

# Morgan Lewis

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September 30, 2024

## VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street, 2<sup>nd</sup> Floor North  
Harrisburg, PA 17120

**Re: Application of PECO Energy Company Filed Pursuant to 52 Pa. Code § 57.71 et seq. for Approval of the Siting and Construction of the Brandon Shores Retirement Mitigation Project Located in Peach Bottom Township, York County, Pennsylvania and Petition for Waiver of 52 Pa. Code § 57.72(c)(10)  
Docket No. A-2024-\_\_\_\_\_**

Dear Secretary Chiavetta:

Enclosed for filing on behalf of PECO Energy Company (“PECO”) is an Application Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, For Approval Of The Brandon Shores Retirement Mitigation Project Located In Peach Bottom Township, York County, Pennsylvania. PECO is undertaking this project to ensure it can continue to provide safe and reliable electric transmission service, which would otherwise be negatively impacted by the planned retirement of the Brandon Shores Generating Station. This project is also necessary to address and alleviate reliability issues caused by significantly increasing demands on the electric transmission system in PJM Interconnection, L.L.C. (“PJM”), the Regional Transmission Organization that encompasses PECO’s service territory and much of the Mid-Atlantic.

PECO has separately paid the associated \$350.00 filing fee. The Application includes:

1. The Siting Application and associated Exhibits in support of the Siting Application;

**Morgan, Lewis & Bockius LLP**

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Philadelphia, PA 19103  
United States

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2. The Direct Testimony in support of the Siting Application; and
3. A Notice of Filing.

Copies of the Application and accompanying attachments are being served by certified mail, return receipt requested upon the persons indicated on the certificate of service.

Copies of the Notice of Filing are being serviced by certified mail, return receipt requested upon the persons indicated on the certificate of service.

PECO requests Commission review and approval of the Application on or before September 30, 2025.

### **REQUEST FOR CONFIDENTIAL TREATMENT**

Attachments 3 and 4 to the Application contain information which PECO considers to be proprietary and confidential and Critical Energy Infrastructure Information. Copies of these pages are contained in a sealed envelope which also has been stamped "CONFIDENTIAL." The public or non-confidential filing contains cover pages stating that no public versions of these Attachments are available.

PECO requests that the copies of the materials that have been labeled "CONFIDENTIAL" and that are contained in the envelope that has been stamped "CONFIDENTIAL" be given confidential treatment by the Commission, including its various offices and bureaus. PECO requests that the confidential materials be excluded from the Commission's public document folder and that the confidential copies not be disclosed to the public.

PECO will provide copies of CONFIDENTIAL Attachments 3 and 4 to parties that have executed an appropriate protective agreement or protective order.

Rosemary Chiavetta  
September 30, 2024  
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If you have any questions pertaining to this matter, please do not hesitate to contact me.

Respectfully submitted,



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*Counsel for PECO Energy Company*

Enclosure

cc: Certificate of Service

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Application of PECO Energy Company Filed :  
Pursuant to 52 Pa. Code § 57.71 *et seq.* for :  
Approval of the Siting and Construction of :                   Docket No. A-2024-\_\_\_\_\_**  
**the Brandon Shores Retirement Mitigation :  
Project Located in Peach Bottom Township, :  
York County, Pennsylvania and Petition for :  
Waiver of 52 Pa. Code § 57.72(c)(10) :**

**CERTIFICATE OF SERVICE**

I hereby certify that on this date, the parties listed below that are entitled to receive a copy of the above-captioned Application pursuant to 52 Pa. Code § 57.74(b) were served by certified mail, return receipt requested, a copy of the above-captioned Application, and the parties listed below that are entitled to receive a Notice of Filing pursuant to 52 Pa. Code § 57.74(c) were served by certified mail, return receipt requested, a copy of the Notice of Filing.

Service by certified mail, return receipt requested, addressed as follows:

**Those entitled to receive the Application:**

Patrick M. Cicero, Esq.  
Office of Consumer Advocate  
555 Walnut Street  
Forum Place – 5th Floor  
Harrisburg, PA 17101-1921

Allison C. Kaster  
Bureau of Investigation and Enforcement  
PA Public Utility Commission  
Commonwealth Keystone Building  
400 North Street, 2nd Floor West  
Harrisburg, PA 17120

NazAarah Sabree, Esq.  
Office of Small Business Advocate  
Suite 1102, Commerce Building  
300 North Second Street  
Harrisburg, PA 17101

York County Commissioners  
28 East Market Street – 2nd Floor  
York, PA 17401  
Attn: Julie Wheller, President Commissioner

York County Planning Commission  
York County Administrative Center  
28 E Market Street, 3rd Floor  
York, PA 17401  
Attn: Felicia Dell, Director

Jonelle Harter Eshbach, Esq.  
York County Solicitor  
Administrative Center  
28 East Market Street  
York, PA 17401

Craig S. Sharnetzka, Esq.  
Peach Bottom Township Solicitor  
CGA Law Firm

Peach Bottom Township  
6880 Delta Road, Suite 3  
Delta, PA 17314

135 North George Street  
York, PA 17401

Attn: David E. Gemmill, Chairperson

PA Department of Environmental Protection  
Market Street State Office Building  
P.O. Box 2063  
Harrisburg, PA 17105-2063  
Attn: Office of Field Operations

The Department of Environmental Resources  
101 S. Second Street  
Post Office Box 2357  
Harrisburg, Pennsylvania 17120  
Attn: Bureau of Environmental Planning

Constellation President  
1310 Point Street  
Baltimore, Maryland 21231  
Attn: Joseph Dominguez, President

**Those entitled to receive a Notice of Filing:**

PA Department of Transportation  
Commonwealth Keystone Building  
400 North Street, 5th Floor  
Harrisburg, PA 17120  
Attn: Jeffery Spotts, Chief Counsel

PA Historical & Museum Commission  
Bureau for Historic Preservation  
Commonwealth Keystone Building, 2nd Fl.  
400 North Street  
Harrisburg, PA 17120-0053  
Attn: Douglass C. McLearen, Chief

York County Conservation District  
2401 Pleasant Valley Road  
Suite #101 RM #139,  
York, PA 17402  
Attn: Eric Jordan, Program Manager

U.S. Fish and Wildlife Service  
Pennsylvania Field Office  
110 Radnor Rd, Suite 101  
State College, PA 16801-4850  
Attn: Lesa Lindsay, Administrative Officer

Federal Aviation Administration  
Eastern Obstruction Evaluation  
10101 Hillwood Parkway  
Fort Worth, TX 76177  
Attn: Dave Maddox

PA Department of Conservation & Natural  
Resources  
Rachel Carson State Office Building  
400 Market St.  
Harrisburg, PA 17105-8767  
Attn: Rebecca Bowen, Ecological Services  
Section Chief

PA Fish and Boat Commission  
Natural Diversity Section  
450 Robinson Lane  
Bellefonte, PA 16823-9620  
Attn: Christopher A. Urban, Chief

PA Game Commission  
2001 Elmerton Avenue  
Harrisburg, PA 17110-9797  
Attn: Dr. Matthew Schnupp, Director

U.S. Army Corps of Engineers  
Baltimore District Corporate Communication  
Office

Hunter L. Kuser  
15 141<sup>ST</sup> Street, Unit B  
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2 Hopkins Plaza  
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Attn: Planning Division

Joshua O. & Lauren M. Griffith  
407 Lay Rd  
Delta, PA 17314

Richard O. Baker  
431 Lay Rd  
Delta, PA 17314

47 Delta LLC  
449 Lay Rd  
Delta, PA 17314

Grimmel Farms LP  
3855 Federal Hill Rd  
Jarrettsville, MD 21084

Troyer Farms LLC  
17905 Troyer Rd  
White Hall, MD 21161-9456

Donald E. & Judy C. Hammons  
99 Stone Rd  
Delta, PA 17314

Holden L. Hersey  
687 Pikes Peak Rd  
Delta, PA 17314-8518

Scott A. & Kimberly C. Taylor  
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Delta, PA 17314

Bruce Hannah Jr.  
171 Stone Rd  
Delta, PA 17314

James Ronald & Betty Yeager  
139 Stone Rd  
Delta, PA 17314

Allen S. & Audrey Coogle  
119 Stone Rd  
Delta, PA 17314

Dated: September 30, 2024

  
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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Application of PECO Energy Company Filed :  
Pursuant to 52 Pa. Code §§ 57.71 et seq. for :  
Approval of the Siting and Construction of :           Docket No. A-2024-\_\_\_\_\_  
the Brandon Shores Retirement Mitigation :  
Project Located in Peach Bottom Township, :  
York County, Pennsylvania and Petition for :  
Waiver of 52 Pa. Code § 57.72(c)(10) :**

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**APPLICATION AND PETITION FOR WAIVER OF  
PECO ENERGY COMPANY**

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**TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:**

PECO Energy Company (“PECO” or the “Company”) hereby files this Application and Petition for Waiver, pursuant to 52 Pa. Code §§ 57.72 et seq. and the Pennsylvania Public Utility Commission’s (“Commission’s”) Interim Guidelines for the Filing of Electric Transmission Line Siting Applications at 52 Pa. Code §§ 69.3101 et seq., requesting Commission approval to site and construct transmission lines and related facilities associated with the proposed Brandon Shores Retirement Mitigation Project (hereinafter, the “Project”). The Project is necessary to mitigate significant and widespread reliability issues that would otherwise result from the planned deactivation of Talen Energy Corporation’s (“Talen’s”) Brandon Shores Generating Station (“Brandon Shores”), located in Anne Arundel County, Maryland, which will have significant effects on the transmission system in the Mid-Atlantic region of the PJM Interconnection, L.L.C. (“PJM”) footprint, including on PECO’s transmission facilities in southeastern Pennsylvania. The Project also supports mitigation of reliability concerns caused by significant load growth in other parts of the PJM footprint.

The Project will be constructed primarily within PECO's existing rights-of-way and/or the rights-of-way of generators immediately adjacent to PECO's existing rights-of-way. The Project involves constructing one new 500 kilovolt ("kV") single-circuit transmission line and one new 230 kV single-circuit transmission line, bifurcating an existing 500 kV circuit into two new circuits at a new substation with new tap structures, and modifying and rerouting one existing 230 kV circuit with partial new construction. All work will be predominantly within PECO's existing transmission corridor. The Project also includes the expansion of the Peach Bottom North substation. Subject to the Commission's approval, construction on the Project is scheduled to begin by March 30, 2026, and it is scheduled to be in-service by December 31, 2028. To support tree clearing in advance of construction, PECO requests that the Project be approved on or before September 30, 2025.

In addition, as explained herein, PECO requests waiver of the requirement in 52 Pa. Code § 57.72(c)(10) to provide alternative routes and of the Commission's interim guidelines at 52 Pa. Code § 69.3105 to the extent necessary. Specifically, much of the Project entails enhancing the connections between the substations near the Peach Bottom Nuclear Generation Station, and the rest of the Project uses existing PECO transmission right-of-way west and south towards the Pennsylvania and Maryland border. Any alternative routes would have considerably more significant environmental, community, and landowner impacts and require significant greenfield construction. Nevertheless, the instant application provides considerable analysis and explanation as to why there are no reasonable alternative routes for the proposed Project. In addition, the Project will have minimal impact on the existing viewshed, will utilize the existing transmission corridors of neighboring generators, and will only directly impact a minimal number of landowners.

In support therefore, PECO states as follows:

**I. INTRODUCTION AND OVERVIEW**

1. This Application and Petition is filed by PECO, a “public utility,” as defined in 66 Pa.C.S. § 102, that provides electric distribution, transmission, and provider of last resort services in Pennsylvania subject to the regulatory jurisdiction of the Commission.

2. PECO’s address is as follows:

PECO Energy Company  
2301 Market Street  
Philadelphia, PA 19103

3. The names and addresses of PECO’s attorneys in this matter who are authorized to receive notices and communications on their clients’ behalf are:

Anthony E. Gay  
PECO Energy Company  
Vice President & General Counsel  
2301 Market Street  
Philadelphia, PA 19103  
(267) 533-1964  
anthony.gay@exeloncorp.com

Kenneth M. Kulak  
Morgan, Lewis & Bockius LLP  
2222 Market Street  
Philadelphia, PA 19103-2921  
(215) 963-5384  
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4. PECO furnishes electric service to approximately 1.7 million electric customers and also serves over 553,000 natural gas customers throughout its certificated service territory, which encompasses approximately 2,100 square miles in Pennsylvania. PECO owns approximately 1,050 miles of transmission lines, approximately 13,000 miles of aerial distribution facilities, and approximately 9,000 miles of underground distribution facilities. In addition, PECO owns approximately 13,800 miles of natural gas mains and services.

5. The proposed Project is necessary to maintain reliability as a result of the upcoming deactivations of Unit 1 and Unit 2 at Brandon Shores as well as to support mitigation of reliability concerns from the unprecedented load growth in northern Virginia.

6. The estimated cost to design and construct the Project is approximately \$118 million. This cost includes approximately \$53 million for the substation work and \$65 million for transmission line work.

7. The Project has a scheduled construction start date of March 30, 2026, to meet an in-service date of December 31, 2028, the same date as the expected deactivation date of Brandon Shores.

8. Accompanying this Application are the following Attachments that provide additional detailed information regarding the Project:

- Attachment 1 – PUC Regulation Cross-Reference Matrix
- Attachment 2 – Purpose and Need Statement for the Project
- Attachment 3 – Existing Transmission System Project Area Maps
- Attachment 4 – Proposed Transmission System Project Area Maps
- Attachment 5 – Design, Engineering, and Safety Statement
- Attachment 6 – Typical Cross-Section of PECO Right-of-Way
- Attachment 7 – Depiction of General Layout of Existing Transmission Corridor
- Attachment 8 – Typical Pole Structure Exhibits
- Attachment 9 – EMF Calculations Graph
- Attachment 10 – Environmental Setting
- Attachment 11 – Property Owners Crossed by Right-of-Way
- Attachment 12 – Easements and Land Rights Description

- Attachment 13 – Representative Property Owner Letter and Notices
- Attachment 14 – Proof of Public Notice of the Project
- Attachment 15 – Vegetation Management for New Transmission Construction Projects
- Attachment 16 – Tree Trimming and Comprehensive Vegetation Management Brochure
- Attachment 17 – List of Agency and Permit Requirements and Permit Matrix
- Attachment 18 – Topographic Overview Map
- Attachment 19 – Aerial Overview Map
- Attachment 20 – Map of Segments of Project

9. Accompanying this Siting Application are the following written direct testimonies further explaining and supporting this Application for approval to site and construct the Project:

- PECO Statement No. 1: William J. Patterer, Vice President of Projects and Contracts Department, provides an overview of the Project as well as the additional testimonies and exhibits filed by PECO in support of the Application, describes PECO’s process for preparing and filing the Application, and explains how PECO will oversee construction, operations, and maintenance of the Project.
- PECO Statement No. 2: Amber C. Thomas, Senior Manager of Regional Transmission Planning for Atlantic City Electric Company, Delmarva Power & Light Company, and PECO, provides an overview of transmission-related system planning (including the PJM Regional Transmission Expansion Plan), the need for the Project to address reliability concerns identified by PJM, and PECO’s obligation to complete the Project.
- PECO Statement No. 3: Barry A. Baker, Vice President and Practice Lead for AECOM Technical Services Corporation (“AECOM”), describes the proposed route for the

project, why there is no reasonable better alternative, and the steps taken to assess such alternatives. He also summarizes the social, environmental, and engineering considerations for the Project, and explains the public outreach efforts undertaken by PECO.

- PECO Statement No. 4: Drew Davis, Vice President of Transmission and Substations, explains the major design features of the Project, describes the safety features that will be incorporated into the Project, and explains PECO's electromagnetic field policy and measures to mitigate the impacts of transmission lines.
- PECO Statement No. 5: Daniel F. Pacheco, Manager, Acquisition and Taxes, Real Estate and Facilities Department, provides an overview of PECO's existing transmission line rights-of-way, explains PECO's process to acquire land rights for additional transmission line rights-of-way, and summarizes the status of negotiations with relevant landowners.

10. Attachments 3 and 4 show critical energy infrastructure information regarding the bulk transmission system of PECO located within PECO's service territory. PECO believes the transmission system data set forth in Attachments 3 and 4 include sensitive information about critical energy infrastructure that should not be publicly accessible. Accordingly, PECO is submitting confidential versions of Attachments 3 and 4.

11. This Application, including the accompanying testimonies and Attachments and Statements, which are incorporated herein by reference, contains all of the information required by 52 Pa. Code §§ 57.72(c), 69.1101, 69.3101 - 69.3107, except to the extent consistent with PECO's requested waiver of 52 Pa. Code § 57.72(c)(10) and 52 Pa. Code § 69.3105 as described below.

## **II. NEED FOR THE PROJECT**

### **A. SYSTEM PLANNING**

12. System planning is the process that ensures that transmission and distribution systems can supply electricity to all customer loads reliably and economically. The reliable and economical operation of transmission systems requires planning guidelines for system expansion and reinforcement.

13. PJM is a Federal Energy Regulatory Commission (“FERC”) approved Regional Transmission Organization charged with ensuring the reliability of the electric transmission system under its functional control and coordinating the movement of electricity in all or parts of 13 states and the District of Columbia. As a transmission owner operating in Pennsylvania, PECO is a member of PJM and has formally transferred certain planning transmission system and operating responsibilities to PJM. In addition, PECO actively collaborates with PJM in the transmission planning process to cost-effectively and efficiently ensure system reliability for customers and PECO participates in the PJM stakeholder process to reliably and economically establish rules and procedures for planning and operating the transmission grid.

14. PECO is also a signatory of the Consolidated Transmission Owners Agreement (“CTOA”) that defines the responsibilities of PJM and each of the transmission owners within the PJM footprint. Pursuant to the CTOA, PJM prepares an annual Regional Transmission Expansion Plan (“RTEP”), which contains the transmission developments needed to ensure reliable transmission service. PJM uses the RTEP process to identify system reinforcements that are required to, among other things, meet the North American Electric Reliability Corporation (“NERC”) reliability standards, PJM reliability planning criteria, and transmission owner reliability criteria. The RTEP process is primarily driven by addressing system reliability needs,

market efficiency, and operational performance, as well as meeting public policy requirements and goals.<sup>1</sup>

15. As part of the RTEP process, PJM performs reliability assessments on Bulk Electric System facilities within the PJM territory (primarily focusing on transmission facilities 69 kV and above) based on standards such as NERC Transmission System Planning Performance Requirements to determine if specific transmission upgrade projects are needed to ensure reliability that supports electric service to customers based on expected system conditions, including load changes as well as generator retirements and additions. If in the course of performing the reliability assessments PJM determines that there are violations of system planning criteria under anticipated contingency and non-contingency conditions, such as thermal overloads, voltage magnitude issues, or voltage drop issues, PJM, in coordination and collaboration with transmission owners, will direct transmission system upgrades to be built to maintain the reliability and safety of the grid. PJM will coordinate with transmission owners, either through competitive or non-competitive processes, to determine necessary transmission construction projects to address potential system violations.

16. PJM recommends solutions (generally referred to as baseline projects) to identified system violations and presents the assumptions, needs, solutions, and alternatives considered at Transmission Expansion Advisory Committee (“TEAC”) and/or Sub-Regional Regional Transmission Expansion Plan (“SRRTEP”) meetings.<sup>2</sup> PJM then seeks approval of the PJM Board

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<sup>1</sup> The RTEP process is set forth in Schedule 6 of PJM’s Amended and Restated Operating Agreement and encompasses a comprehensive series of detailed analyses to ensure electric power continues to flow reliably to customers across the PJM region under stringent reliability planning criteria. An outline of the RTEP process and the reliability criteria used by PJM is available in PJM Manuals 14A through 14H. The PJM Manuals are available at <https://www.pjm.com/library/manuals>.

<sup>2</sup> The TEAC provides advice and recommendations to aid in the development of the RTEP. The SRRTEP provides review and input of subregional RTEP projects and provides recommendations to the TEAC concerning sub-regional RTEP projects.

of Managers for the recommended solutions. Once approved, the transmission owner is notified of its construction responsibility assignments for the baseline project, and the baseline project is incorporated into the RTEP.

17. At any time, PJM may identify an “Immediate-need” reliability project<sup>3</sup> that may not be subject to a competitive bidding process due to the infeasibility of holding a proposal window for the project. Instead, PJM will identify and post the Immediate-need reliability criteria violations and system conditions for review and comment by the TEAC and/or SRRTEP and other stakeholders. The PJM Office of the Interconnection will engage with stakeholders for comments at the TEAC and/or SRRTEP stakeholder meetings regarding the needs, solutions, and/or alternatives for the Immediate-need reliability project. Then the PJM Office of Interconnection will submit a recommended plan for approval to the PJM Board of Managers. Once the PJM Board of Managers approves the plan, the transmission owner is notified of its construction responsibility assignments for the baseline project and the transmission owner acknowledges and accepts this designation following the same process as previously noted above. An Immediate-need reliability project may be identified through PJM’s Generator Deactivation Process, detailed in the PJM Tariff Part V Generation Deactivation requirements and PJM Manual 14D Section 9.1, and is further explained in Attachment 2 to this Application.

## **B. DEFINITION OF THE PROBLEM**

18. On April 6, 2023, Talen, the current operator of Brandon Shores, notified PJM of the planned deactivation of the 1,273 MW (summer rating) coal-fired Units 1 and 2 of Brandon Shores on June 1, 2025. PJM analyzed the effects of the planned deactivation and determined that

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<sup>3</sup> An “Immediate-need” reliability project is defined under the PJM Operating Agreement as “a reliability-based transmission enhancement or expansion that the Office of the Interconnection has identified to resolve a need that must be addressed within three years or less from the year the Office of the Interconnection identified the existing or projected limitations on the Transmission System that gave rise to the need for such enhancement or expansion.”

these retirements would have multiple widespread reliability impacts. PJM identified substantial N-1, N-1-1, load deliverability, and voltage deviation violations on transmission facilities due to the Brandon Shores' deactivation in various transmission owners' service territory in the Mid-Atlantic region, including PECO and several other Exelon Operating Companies, as well as thermal violations affecting several other transmission owners. PJM identified widespread voltage violations due to Brandon Shores deactivations in PECO, Baltimore Gas and Electric Company ("BGE"), Potomac Electric Power Company ("Pepco"), Dominion Energy, First Energy (Allegheny Energy or "APS"), Metropolitan Edison, and PPL Electric Utilities Corp. service territories for N-1 and N-1-1 outages. PJM also identified multiple 115 kV, 138 kV, 230 kV, and 500/230 kV thermal overloads on transmission facilities in BGE, APS, and Pepco due to the deactivation of Brandon Shores units.

19. As a result of PJM's analysis of the Brandon Shores deactivation showing the potential for voltage collapse on the grid in Baltimore and surrounding areas, including southeastern Pennsylvania, PJM identified the need to develop Immediate-need reliability projects. PJM did not develop solutions through a competitive process because Talen requested deactivation to occur in a little over one year. In addition, PJM identified that the deactivation of Brandon Shores would compound significant other reliability concerns identified by PJM in a then-ongoing competitive process initiated only a few months earlier.<sup>4</sup>

20. PJM recognized that system upgrades could not be completed prior to the retirement of Brandon Shores on June 1, 2025, and therefore requested Talen to continue to operate

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<sup>4</sup> PJM opened a competitive solicitation process from February 25, 2023, to May 31, 2023, referred to as the 2022 RTEP Reliability Window 3 "RTEP Window," to address the data center load growth concentrated primarily in northern Virginia, but also in parts of Maryland. With data center load forecasts in this area projected to be around 7,500 MW by 2027-2028, PJM identified significant reliability issues in PECO's service territory as well as other transmission owner zones. During this competitive solicitation process, the deactivation of the Brandon Shores coal units was also announced, which would exacerbate the reliability issues in the Mid-Atlantic region.

Brandon Shores beyond this date. Talen and PJM agreed to Talen continuing to operate Brandon Shores under a Reliability Must-Run (“RMR”) arrangement, and to that end on April 18, 2024, Talen filed with the FERC a Continuing Operations Rate Schedule (typically referred to as an “RMR Agreement”) for Units 1 and 2 of Brandon Shores with a Monthly Fixed Cost Charge of \$14,619,407 (Annual Fixed Cost of \$175,432,884) from June 1, 2025, through December 31, 2028. The cost for the continued operation of Brandon Shores under the RMR Agreement will be borne by various customers within the PJM footprint, including certain Pennsylvania customers. If system upgrades are not completed by December 31, 2028, PJM may request Brandon Shores continue operating under an extended RMR arrangement, further increasing these RMR costs.

### **C. PROPOSED SOLUTION**

21. PJM publicly presented the numerous voltage and thermal violations in the Mid-Atlantic region of the PJM footprint that PJM had identified resulting from the deactivation of Brandon Shores. PECO, in coordination with BGE and Pepco, developed proposals to address the reliability issues resulting from the Brandon Shores deactivation in collaboration with PJM. PJM recommended these projects, along with proposals by other transmission owners, to the PJM Board of Managers, which approved the projects during its July 12, 2023 meeting.

22. PJM provided PECO Notifications of Designation of Construction Responsibility for the Immediate-need projects on July 19, 2023, and March 12, 2024, and those projects, except for a proposal to expand the West Cooper substation (which was subsequently cancelled by PJM), are included in the Project.

23. In May 2023, while PECO was determining the scope of work to mitigate the Brandon Shores deactivation reliability issues, PECO was also participating in PJM’s 2022 RTEP Window 3 process to develop proposals primarily aimed at addressing the reliability issues stemming from significant load growth in the northern Virginia area. PECO recognized that its

2022 RTEP Window 3 proposals would provide a holistic solution to not only address this load growth but that elements of the proposals could also be leveraged to mitigate the reliability issues associated with the loss of generation from the Brandon Shores deactivation. Thus, when PJM determined the projects recommended to address the Brandon Shores deactivation, including PECO's Project, these projects complimented PECO's other planned transmission proposals selected through the 2022 RTEP Window 3. These additional projects are described in PECO's 2022 RTEP Window 3 application ("PJM 2022 RTEP Reliability Window # 3 Project") which is being concurrently filed with the Commission.<sup>5</sup> As PECO's Project and PJM 2022 Reliability Window # 3 Project are designed to function in conjunction with each other and ensure the successful mitigation of the reliability concerns PJM identified from the Brandon Shores deactivation. The 2022 RTEP Window 3 requires the approval and construction of both the PECO Brandon Shores Retirement Mitigation Project and PECO's PJM 2022 Reliability Window # 3 Project.

24. The Project, in addition to separate projects by other public utilities designated by PJM, will also mitigate the potential need for PJM to request Talen to continue to operate the Brandon Shore units beyond 2028 (i.e., the term of the current RMR arrangement). The Project is planned to be in-service prior to the termination of the RMR Agreement. A delayed in-service date of the Project could result in an extension of the RMR Agreement.

25. Upon receipt of all necessary approvals, the Project will extend from the border of Pennsylvania and Maryland to the Peach Bottom North substation, reinforcing the transfer of

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<sup>5</sup> As described in PECO's concurrently filed application, the PJM 2022 Reliability Window # 3 Project will mitigate thermal and voltage issues in the Exelon Mid-Atlantic, Dominion Energy, and First Energy regions, allow for the supply of load to the growing data center load pocket in the northern Virginia area, increase transmission capacity within PECO's territory, and remove congestion on existing facilities in the line 5012 corridor.

power from east of the Peach Bottom Nuclear Generation Station to the Graceton Substation area in Maryland and interconnecting new and upgraded 500 kV transmission lines along this route.

26. In sum, the Project will support the mitigation of thermal and voltage issues in the Mid-Atlantic region of the PJM footprint and increase transmission capacity within PECO's service territory. The Project will also support the mitigation of the reliability concerns identified in the 2022 RTEP Window 3 process. Furthermore, the Project, together with projects of other utilities designated by PJM to address the retirement of Brandon Shores, will mitigate the potential need for Brandon Shores to continue to operate beyond December 31, 2028, the term of the current RMR Agreement, and prevent Pennsylvania customers from having to pay additional costs for a potentially extended RMR arrangement for Brandon Shores.

### **III. DESCRIPTION OF THE PROPOSED PROJECT**

27. In order to address the identified reliability issues described above, PECO proposes to expand and perform upgrades at the Peach Bottom North substation and expand, improve, and construct certain transmission lines. The entire Project will be located within Peach Bottom Township, York County, Pennsylvania. The majority of the transmission construction will occur in PECO's existing rights-of-way and the limited additional transmission construction that will require new rights-of-way will be located adjacent to PECO's existing rights-of-way and will largely leverage the property rights of Constellation Energy Corporation ("Constellation"). Some of the transmission construction that will require new rights-of-way will also use Calpine Corporation's ("Calpine's") existing transmission corridor for the interconnection facilities of Calpine's York Energy Center generation facility.<sup>6</sup>

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<sup>6</sup> In order to utilize Calpine's existing transmission corridor, a short segment of Calpine's existing 5034 Line interconnecting the Calpine plant to the transmission system will be demolished and rebuilt in a new location to the south. While the relocation of this line is necessary to allow for PECO's Project's tie-in to the new Bramah substation, neither the demolition nor rebuilding of the 5034 Line is within the scope of work of the Project for which PECO is

28. PECO proposes to expand the Peach Bottom North substation, including constructing a new substation control building and installing a new rigid bus, two new breakers, and new motor operated disconnected switches, coupling capacitor voltage transformers, and lightning arrestors.

29. The proposed Project involves five transmission lines described as follows:

- PECO will construct a new 500 kV 5040 Line approximately 5.5 miles in length between Graceton substation and Peach Bottom North substation, beginning at the Pennsylvania and Maryland border and extending northeast to the Peach Bottom North substation. PECO's ownership of this line ends at the Maryland border. To construct approximately 4.0 miles of this transmission line, an existing 230 kV 220-93 Line supported by lattice towers with conductors arranged horizontally will be removed and replaced with tubular steel monopole structures with conductors arranged vertically. The remainder of the line will also be constructed with new tubular steel monopole structures. The height of the new structures will be approximately 150 to 200 feet.
- PECO will construct a new approximately 0.44 mile 500 kV 5042 Line tie-in to connect the existing 5042 Line from the Pennsylvania and Maryland border to the Bramah substation. Existing 500 kV lattice towers with conductors arranged horizontally within PECO's existing right-of-way will be replaced. The new line section will be constructed with new steel tubular monopole structures with conductors arranged vertically. The height of the new structures will be approximately 150 to 200 feet.

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responsible. PECO is currently in negotiations with Calpine to potentially acquire at least part of the 5034 Line. If PECO obtains responsibility to construct the newly relocated portion of the 5034 Line, PECO will separately file with the Commission for all necessary authorizations to site and construct those facilities.

- PECO will construct a new 5012 Line section of approximately 0.43 mile in a new right-of-way to connect the existing 5012 line from the Bramah substation to the Peach Bottom South substation. The new line section will be constructed with new tubular H-frame structures with conductors in a horizontal configuration, a single 3-pole dead end structures with conductors in a horizontal configuration, and one single tubular monopole with conductors arranged vertically. The height of the new structures will be 80 to 185 feet. The remainder of the existing line going to Peach Bottom South will use existing lattice towers with conductors arranged horizontally.
- Approximately 1.1 miles of the existing 15.03 miles 230 kV 220-08 Line will be rerouted around the Peach Bottom North substation to accommodate the Peach Bottom North substation expansion. Approximately 0.1 miles of this line will be within PECO's existing right-of-way and use existing lattice towers with conductors arranged horizontally. Within the new right-of-way, the line will be constructed with new tubular H-frame structures with conductors in a horizontal configuration and a single 3-pole dead end structure with conductors in a horizontal configuration. The height of the new structures will be approximately 70 to 110 feet.
- PECO will construct a new approximately 0.47 mile 230 kV 220-93 Line from Cooper substation to Bramah substation. To construct this transmission line, the existing 500 kV 5012 Line supported by lattice towers with conductors arranged horizontally will be removed and replaced with tubular steel monopole structures with conductors arranged vertically and in a delta configuration. The height of the new structures will be approximately 75 to 135 feet.

The table below includes descriptions and line numbers for each of the transmission lines proposed for the Project.

New 230 kV Lines	Line Numbers
Cooper – Bramah	220-93
Nottingham – Cooper	220-08
New 500 kV Lines	Line Numbers
Graceton (from PA/MD Border) – Peach Bottom North	5040
Graceton (from PA/MD Border) – Bramah Tie-in (Existing Line 5012)	5042
Bramah – Peach Bottom South #1 (Existing Line 5012)	5012

30. In each instance where PECO will replace existing 230 kV and 500 kV structures with new structures, PECO will not reuse existing conductors because those assets are over 50 years old and were designed for a lesser load projected around the late 1960s.

31. PECO witness Drew Davis (PECO Statement No. 4) and Attachment 5 provide further information regarding the design and engineering features of the Project. A description of PECO’s vegetation management practices is provided in Attachment 15 to this Application.

32. There is currently no pending litigation regarding the right-of-way routes or environmental matters related to the Project.

#### **IV. HEALTH AND SAFETY**

33. The proposed Project will not create any unreasonable risk of danger to public health or safety. The proposed transmission lines of the Project will be designed, constructed, operated, and maintained in a manner that meets or surpasses all applicable National Electrical Safety Code (“NESC”) minimum standards and all applicable legal requirements. The design, construction and operation of the Project will meet or exceed the requirements specified in the latest revisions of the NESC and all applicable safety standards established by the Occupational

Safety and Health Administration (“OSHA”). All work shall be done in accordance with NESC, OSHA and any applicable local, state, or federal requirements. Descriptions of the NESC standards, PECO’s design criteria, PECO’s safety practices, and PECO’s standards for electromagnetic field management are provided by PECO witness Drew Davis (PECO Statement No. 4) and in Attachment 5 to this Application.

34. PECO will coordinate with the Federal Aviation Administration (“FAA”) and Pennsylvania Bureau of Aviation, as necessary, to assess potential interference with any air navigation facility before construction. Aviation coordination has been initiated through the FAA. PECO will ensure that the pole locations and heights are properly recorded by the FAA. PECO will comply with any additional lighting and other visual aids that may be required by these agencies to ensure aviation safety in the region.

## **V. DESCRIPTION OF LAND RIGHTS**

35. As explained above, construction of the proposed Project will take place primarily within PECO’s existing rights-of-way, with the majority of the Project to be located within PECO’s existing transmission corridor that is approximately 300 feet wide and approximately 6 miles from the Pennsylvania and Maryland border to Peach Bottom North and Peach Bottom South substations. PECO will remove the existing 230 kV and 500 kV transmission lines from most of PECO’s existing transmission corridor to allow for the construction of new transmission lines for the proposed Project, as well as PECO’s separate PJM 2022 RTEP Window Project.

36. In order to construct the new transmission lines of the Project primarily within PECO’s existing rights-of-way and minimize the amount of new property owners affected by the Project, PECO will construct steel monopole structures in the existing transmission corridor which require less ground space than the existing lattice structure. PECO will also sequence the

construction work for the Project to allow for the removal of existing structures while creating enough clearance to install new structures without the need for additional rights-of-way.

37. All construction outside of PECO's existing rights-of-way for which PECO must acquire new land rights will be in land immediately adjacent to PECO's existing rights-of-way. In most cases, PECO will require land rights from a neighboring generator (i.e., Constellation). In the remaining few instances, PECO will acquire land rights from two individual landowners, which in some instances will include Calpine's existing transmission corridor.

38. Of the approximate 359.7 acres required for this Project, PECO needs to acquire land rights for 39.9 acres from two directly impacted landowners<sup>7</sup> and 12.8 acres from Constellation and needs to acquire easements for 7.1 acres from Calpine. A list of the property owners crossed by the Project's rights-of-way are included with the Application as Attachment 11.

39. Shortly after this filing, PECO will begin negotiations with the two directly impacted individual landowners and Constellation to acquire all necessary land rights, as fee simple or easements, required to construct the Project. PECO anticipates the acquisitions to be successfully completed by 2025.<sup>8</sup> In the event that PECO is unable to acquire the land rights needed for the Project, PECO will promptly file a separate application seeking Commission approval to exercise the power of eminent domain to acquire necessary land rights for the Project. If any such condemnation application becomes necessary, PECO will request that it be consolidated and considered together with this Application for the Project.

40. As part of its land acquisitions, PECO will need to negotiate for necessary land rights with one directly impacted landowner for a single parcel of land that is under a conservation

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<sup>7</sup> An affiliate of Transource Pennsylvania, LLC ("Transource") currently has an option to purchase 4.8 acres owned by one of the landowners. PECO intends to seek to acquire an easement for that required land after that transaction is completed.

<sup>8</sup> PECO is in discussions with Calpine regarding the assignment of the existing easement.

easement pursuant to the Agricultural Area Security Law (P.L. 128, No. 43). The easement is recorded in York County. Some form of condemnation for this land may be necessary due to the conservation easement but PECO is currently assessing various options, including whether a deed in lieu of condemnation can be executed. If necessary, PECO will file a Condemnation Application pursuant to 15 Pa. C.S. § 1511(c) for a finding and determination by the Commission, to the extent that any such finding and determination may be required, that the service to be furnished by PECO through the exercise of the power of eminent domain for the necessary or proper service, accommodation, convenience or safety of the public.

## **VI. LAND USE AND ENVIRONMENTAL EVALUATION**

41. As explained above, construction of the proposed Project will take place primarily within PECO's existing rights-of-way or those of nearby generating companies, including Calpine's existing transmission corridor. Therefore, PECO anticipates that the Project will have minimal incremental impact on land use in the Project area.

42. In accordance with the Commission's regulations at 52 Pa. Code § 57.72(c)(7), PECO retained AECOM, an international engineering and environmental consulting firm, to conduct environmental studies to determine the projected environmental impacts of the Project. PECO witness Barry A. Baker (PECO Statement No. 3) provides details of AECOM's environmental studies and included with this Application as Attachment 10 is the Environmental Setting document completed by AECOM that describes the social and natural conditions within and around the Project area. This document also provides a high-level desktop evaluation of conceptual alternative corridors around the Project area and details the potential social and natural effects of these conceptual alternative corridors relative to the minimal effects of the current Project alignment.

43. As further detailed in Attachment 10, specific environmental studies that have been or are being completed for the Project include stream and wetland delineations and the threatened and endangered (“T&E”) animal and plant surveys required as part of the Pennsylvania Natural Diversity Inventory (“PNDI”) review process.

44. Delineation of the streams and wetlands within the Project corridor was completed in March and April 2024. This survey noted the presence of 24 perennial or intermittent streams, most of which are classified by the Pennsylvania Fish and Boat Commission (“PFBC”) as wild trout streams. The survey also identified 21 wetlands that were mostly classified as palustrine emergent based on the dominant vegetation, but also included a few palustrine scrub-shrub and palustrine forested wetlands. Due to their location adjacent to the wild trout streams, these wetlands are considered Exceptional Value due to the ecological functions they serve in maintaining the water quality of the adjoining streams. Wetlands that are deemed Exceptional Value are provided additional protection by the state regulatory agency, the Pennsylvania Department of Environmental Protection (“PADEP”). Impacts to these regulated features will be incorporated into the environmental permitting process that will be coordinated with the PADEP and the U.S. Army Corps of Engineers.

45. The PNDI review of the proposed route alignment was conducted in March 2024. The PNDI review noted the potential presence of T&E species associated with the Pennsylvania Department of Conservation and Natural Resources (“DCNR”) (plants); the PFBC (fish, amphibians), and the U.S. Fish and Wildlife Service (“USFWS”) (bog turtles).

46. DCNR has provided a list of twelve T&E plant species for which botanical surveys need to be conducted. These surveys are typically conducted during the flowering of the species, which could range seasonally from spring through fall. At the time of this application submission,

spring and summer surveys had been completed with several of the T&E plant species having been identified within the Project corridor. Additional surveys for other T&E plants will be conducted this fall. An assessment of potential Project impacts on T&E plants and any potential avoidance or minimization efforts will be submitted to DCNR for review and concurrence.

47. Coordination with PFBC noted the potential presence of a skink species for which habitat surveys are currently being conducted. These surveys have confirmed that skink habitat is located within the Project area. An assessment of potential Project impacts and any potential avoidance or minimization efforts will be submitted to PFBC for review and concurrence.

48. The delineated wetlands have been assessed by qualified bog turtle surveyors for potential habitat, which was noted at several of the wetlands in the Project area. As a result of the habitat surveys, presence/absence surveys for these turtles were conducted at these specific wetlands, with no bog turtles found in the wetland areas. A comprehensive findings report has been submitted to the USFWS and their response is forthcoming.

49. In accordance with the Commission's regulations at 52 Pa. Code § 57.72(c)(8), AECOM also evaluated the presence of archeologic, geologic, historic, scenic or wilderness areas of significance within two miles of the Project corridor.

50. A desktop survey of existing historic structures and archeological resources within the Project area was conducted by accessing the Pennsylvania Historical and Museum Commission's ("PHMC") Pennsylvania State Historic and Archeological Resource Exchange to review available information on historic structures, archeological surveys, and previously recorded archeological sites. The review concluded no National Register of Historic Places ("NRHP")-listed or -eligible archeological sites are located within two miles of the Project corridor. This

review did identify several NRHP-listed or -eligible historic districts, bridges and buildings located within two miles of the Project including:

- Delta Historic District, which covers most of Delta Borough.
- Coulsontown Cottage Historic District located off of Ridge Road south of Delta.
- Muddy Creek Bridge, a railroad crossing of Muddy Creek located north of Delta.
- Delta Trestle Bridge, a railroad crossing of Scott Creek located north of Delta
- Scott Creek Bridge, a railroad crossing of Scott Creek located north of Delta.
- Whiteford House, historic building located on Broad Street in Delta.
- Sample House, historic building located on Flintville Road just south of the Cooper Substation.

51. Project coordination with PHMC was initiated in April 2024. The response letter received on May 7, 2024, indicated that the Project would have No Effect on above-ground resources but that archeological surveys would be necessary. These archeological surveys will be completed in fall 2024. This assessment and any potential avoidance or minimization efforts will be submitted to PHMC for review and concurrence.

52. No unique geologic, scenic, or wilderness areas are located within the Project area, according to DCNR.

53. PECO will use and update previously established access roads for construction to the extent practical to further reduce interference with existing uses and minimize land use impacts.

54. There are no airports within two miles of the Project area and the Project will not interfere with any airport operations. In any event, PECO will comply with any applicable requirements of the FAA and the Pennsylvania Department of Transportation, Bureau of Aviation.

55. The Project will not affect any national parks, state parks, local parks, recreational areas, or natural landmarks. None of these features are located within the Project area.

56. No communication towers, pipelines, or other utilities will be adversely affected by the proposed Project.

57. A National Pollutant Discharge Elimination System (“NPDES”) permit for the Discharges of Stormwater Associated with Construction Activities and erosion and sedimentation (“E&S”) control plans will be required for the Project to minimize the displacement of soils. The E&S plans will require prior approval from the York County Conservation District and PADEP before the NPDES permit can be issued. Both of these agencies will be served with this Application. During construction, PECO will adhere to all conditions specified in the NPDES permit. Impacts to local soil resources are anticipated to be minimal. PECO will obtain all approvals and permits necessary for the construction of the Project and will comply with any conditions placed on those permits

58. PECO will continue to consult with the jurisdictional agencies regarding potential impacts to protected species, complete all required surveys, obtain all necessary approvals and permits for Project construction, and comply with conditions placed on those permits.

**VII. PETITION FOR WAIVER OF 52 PA. CODE § 57.72(C)(10)**

59. In 52 Pa. Code § 57.72(c)(10) of the Commission’s siting regulations, an application is required to include:

A general description of reasonable alternative routes to the proposed HV line, including a description of the corridor planning methodology, a comparison of the merits and detriments of each route, and a statement of the reasons for selecting the proposed HV line route.

60. PECO conducted a high-level desktop evaluation of conceptual “alternative corridors” that indicated there are no better practicable alternatives to the transmission routes

proposed in the Project. Because the lack of practicable alternatives is evident due to the many environmental and social constraints around the Project area, PECO is not proposing specific alternative routes to the proposed lines. Instead, PECO is providing its alternative corridor evaluation (in Attachment 10) and PECO witness Baker explains why any project siting within such alternative corridors would not be reasonable. To the extent the Commission determines that the evaluation PECO performed does not fully meet the requirements of 52 Pa. Code § 57.72(c)(10), PECO requests waiver of this requirement to the extent necessary because the proposed transmission routes are the only practicable option for the Project and the public interest would not be served by PECO expending the resources to conduct a more expensive alternative routes analysis where the results are clear in advance based on the analysis of alternative corridors PECO has already conducted and provides in the Application.

61. The Commission has granted waiver of this requirement to provide alternative routes in prior applications entirely within existing utility rights-of-way. *See, e.g., PPL Electric Utility Co.*, Docket No. A-2022-3030969 (Dec. 23, 2022); *PPL Electric Utilities Co.*, Docket No. A-2019-3007945 (July 11, 2019). While the Project requires some additional rights-of-way for efficient and cost-effective construction of the Project, the vast majority of the Project will be constructed within PECO's existing rights-of-way and those of nearby generators.

62. The Commission has also permitted larger projects to proceed without specifying alternative routes through a segment-by-segment approach where individual segments of a proposed project meet one or more of the criteria for a Letter of Notification under the Commission's regulations at 52 Pa. Code § 57.72(d)(1) but the project as a whole does not.

63. In 52 Pa. Code § 5.43 of the Commission's regulations, a party is allowed to petition for waiver of the Commission's regulations. Pursuant to Section 57.72(e) of the Commission's

regulations, one or more of the Commission's siting requirements may be waived. Section 57.72(e) provides as follows:

The Commission or the presiding officer may – upon the petition of any party, upon the Commission's own motion, or upon the presiding officer's own motion – waive one or more or all of the requirements in this subchapter. The petition shall clearly state the requirement sought to be waived and the reasons therefor.

Additionally, Section 35.8 of the General Rules of Administrative Practice and Procedure allows a concerned party to petition an agency for waiver of a regulation. 1 Pa. Code § 35.18.

64. Because PECO's alternative corridor evaluation achieves the objective of 52 Pa. Code § 57.72(c)(10) and indicates there would be no benefit in PECO conducting the additional analysis of specific routes within those alternative corridors, PECO requests the Commission waive the requirements of 52 Pa. Code § 57.72(c)(10) to the extent necessary to approve the Application.

**A. THERE IS NO REASONABLE BETTER ALTERNATIVE FOR THE PROJECT**

65. PECO considered a number of transmission line siting constraint factors and determined that the only practicable routes for the Project are the transmission routes proposed in this Application. PECO witness Barry A. Baker (PECO Statement No. 3) describes the guidelines and factors considered, including minimizing potential environmental and land use impacts and conflicts with designated state lands, recreation lands, natural preserves, or other conservation areas. The Project as proposed takes advantage of PECO's existing rights-of-way and other utility corridors to significantly reduce potential impacts to the environment, community, and individual landowners. The fact that PECO will primarily use PECO's existing rights-of-way or other transmission corridors is one of the reasons why PJM designated PECO responsible for the Project.

66. The majority of the Project's proposed transmission construction will occur entirely in PECO's existing transmission corridor between the Pennsylvania and Maryland border and approximately the Cooper substation. This transmission route is the only practicable option because any other potential transmission route would require PECO acquiring new land rights and would significantly increase the potential impacts to the environment. These substations are located relatively close to each other, within a span of approximately two miles. The Project proposes leveraging PECO's existing rights-of-way to connect these substations through direct and relatively straight transmission routes as these routes are the most efficient and cost-effective options and will have the least potential impacts on their surroundings. New land rights necessary for the Project will be immediately adjacent to PECO's existing rights-of-way. There are no other logical alternatives for connecting the existing and new substations.

67. To the extent potential alternative transmission routes could exist, these routes would be unquestionably worse from an environmental and landowner perspective. Any other route from the Pennsylvania and Maryland border to the substations or to connect the substations other than the transmission routes proposed as part of the Project would be convoluted and technically complex, require entirely new land rights, and would significantly increase the potential impacts to the environment. In particular, the area surrounding the Project area is a mixture of dense residential development, social and natural resources, and challenging terrain. Any potential alternative transmission route would require identifying a route either north or south of the proposed Project area where numerous social, environmental, and engineering constraints would make construction of the new transmission line challenging.

68. To the north of the proposed Project area, there are multiple social constraints including the residential areas around the village of Bryansville, Susquehanna Trails Residential

Development, and along most of the local roadways. Any alternative route would require acquisition of new easements from at a minimum 20 different landowners. Such acquisitions could dramatically alter the landscape of these properties, affect their land use operations, and introduce new structures on landowners' properties. The new route would need to cross over an existing PECO transmission line, which would result in the construction of taller transmission structures and create varying structure heights and numerous angle changes leading to an increase in the complexity of engineering and construction compared to the generally linear alignment of the existing corridor. A new route would also extend through at least four or five new forested areas that would result in potential acres of tree clearing compared to the minimal tree clearing anticipated for building the project within the existing PECO corridor. In addition, a new route would need to span over at least four or five new stream valleys and could result in additional riparian impacts. Further, wetlands may be located along the potential alignment that could be negatively affected and result in complex permitting and mitigation requirements.

69. To the south of the proposed Project area, there are multiple social constraints including the residential areas around the town of Delta and the Delta Ridge residential development. In particular, the town of Delta and the surrounding development, as well as the Calpine Power Plant, define a barrier to any alternative route that would force the alignment further south and into the state of Maryland where the route would encounter more dense residential areas including the towns of Cardiff and Whiteford. Any alternative route would require acquisition of new easements from at a minimum 10 different landowners in Pennsylvania and at a minimum 15 different landowners in Maryland. Such acquisitions could dramatically alter the landscape of these properties, affect their land use operations, and introduce new structures on landowners' properties. The new route would extend near local churches, cemeteries, and other culturally

sensitive sites. Unlike the generally linear alignment of the existing corridor, a route to the south would be convoluted increasing the complexity of engineering and construction. A new route may be able to avoid new impacts to the forested areas of Pennsylvania but would have to cross larger forested tracts in Maryland, which has strict regulations on forest clearing that would require PECO to implement different mitigation approaches for affected trees. In addition, wetlands may be located along the potential alignment that could be negatively affected and result in complex permitting and mitigation requirements in two states.

70. The proposed routes of the Project primarily utilize pathways that have largely already been developed by PECO and/or generating companies for transmission purposes and will have as minimal impacts on the environment as possible. Any alternative route would create significantly more impacts and would not provide any material benefits.

**B. AN ALTERNATIVE ROUTES ANALYSIS IS UNNECESSARY BECAUSE PECO HAS ALREADY SATISFIED THE PURPOSE OF 52 PA. CODE § 57.72(c)(10)**

71. PECO has already performed an evaluation that achieves the purpose of the alternative route proposal requirement in 52 Pa. Code § 57.72(c)(10), and there would be no benefit in requiring PECO to propose and analyze specific routes within the corridors analyzed here. PECO conducted an alternative corridor evaluation that found the proposed transmission routes were clearly the only practicable transmission routes for the Project. This evaluation achieves the objective of 52 Pa. Code § 57.72(c)(10), and proposed alternative routes would provide no useful additional information to determine whether the proposed Project siting is appropriate.

72. The alternative corridor evaluation, which is included as part of Attachment 10 to this Application, assesses conceptual alternative corridors to the north or south of the Project area and depicts the multiple and varied environmental and social constraints that would be impacted by any potential transmission routes in these corridors. All scopes of work of the Project east of

approximately the Cooper substation are strengthening connections between new and existing substations that are already geographically close to each other. Thus, hypothetical alternative transmission routes could only be located west of the Cooper substation, but these are not practicable due to the numerous environmental and social constraints the transmission routes would either impact or have to convolutedly wrap around.

73. The Commission has granted requests for waivers of its siting regulations in circumstances where a proposed project would be located within an existing right-of-way, as with the majority of the Project. *See Re Metropolitan Edison Company*, Docket No. P-80070232, 1981 Pa. PUC LEXIS 56 (June 19, 1981) (granting waiver of the Commission's siting regulations for construction of a second transmission line that would be located within an existing right-of-way where the transmission line was already present and construction of the new line would not substantially alter the right-of-way); *Philadelphia Electric Company*, Docket No. P-880293, 1988 Pa. PUC LEXIS 383 (Apr. 20, 1988) (granting waiver of the siting regulations where use of an established railroad right-of-way eliminated the need to acquire and a clear new right-of-way and, thus, eliminated potential adverse environmental impacts and significantly reduced costs); *Pennsylvania Electric Company*, Docket No. A-110400F0045 (Feb. 6, 2006) (granting request for waiver of Commission's siting regulations because the proposed project was 2.6 miles long and was located along the right-of-way of an existing line and across the property of the sole customer to be served by the line).

74. The Commission has further recognized that waiver of certain of the Commission's regulations governing review and approval of the siting and construction of high-voltage electric transmission lines set forth at 52 Pa. Code §§ 57.71 *et seq.* is appropriate if a proposed transmission project meets one or more of the criteria for a Letter of Notification under 52 Pa. Code §

57.72(d)(1) on a segment-by-segment basis. The Commission has considered single transmission lines as composed of discrete segments that each individually can satisfy the criteria in Section 57.72(d)(1) even where the entire transmission line assessed on the basis of its total distance may not meet the criteria in Section 57.72(d)(1).

75. For example, in *PPL Electric Utilities Co.*, Docket No. P-2016-2545583 (Aug. 11, 2016) the Commission granted a requested waiver of certain provisions of the Commission’s siting regulations at 52 Pa. Code §§ 57.71 *et seq.* on a segment-by-segment basis. The Commission noted that the proposed project did not meet the “strict definition of any of the situations” in 52 Pa. Code § 57.72(d) but found that waiver of the strict application of 52 Pa. Code § 57.72(d) was appropriate and that the project’s individual parts satisfied the criteria in 52 Pa. Code § 57.72(d)(1). “As proposed, [Petitioner’s] project can be split into two main parts: (1) constructing approximately 4.13 miles of new transmission line and (2) reconductoring 0.52 miles of existing transmission line within existing rights-of-way.” After splitting the Project into two parts, the Commission then went “a step further and look[ed] at each of the three types of lines” in the first part (i.e., 4.13 miles of new transmission line) and analyzed each individually. Thus, the Commission divided a single proposed project into four individual segments for the purposes of the waiver analysis. Under this segment-by-segment approach, the Commission granted the requested waiver after finding that each segment either satisfied 52 Pa. Code § 57.72(d)(1)(v) (the scope of work for the 0.52 miles segment was limited to reconductoring an existing transmission line) or 52 Pa. Code § 57.72(d)(1)(vi) (each of the three segments that collectively totaled 4.13 miles would individually be less than two miles). As additional supporting factors, the

Commission also found that one of the segments satisfied 52 Pa. Code § 57.72(d)(1)(iv) and that each new transmission line segment would be located on the petitioner’s existing property.<sup>9</sup>

76. In explaining the segment-by-segment approach in *PPL Electric Utilities Co.*, Docket No. P-2016-2545583 (Aug. 11, 2016), the Commission cited an earlier case where “the proposed project as a whole did not fit any one . . . criterion” but “[t]he Commission still granted the waiver because the project’s individual parts were able to satisfy the requirements of § 57.72(d).” In that case, the Commission divided a proposed project for 4.0 miles of a new or reconstructed transmission line into three segments, one 3.1 miles, one 0.5 miles, and one 0.4 miles. The Commission granted the requested waiver because the first segment was entirely within the petitioner’s existing right-of-way and the latter two segments were each less than two miles. *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015).

77. In addition, the Commission has granted requests for waivers of its siting regulations in circumstances where a proposed project is close to meeting the criteria in 52 Pa. Code § 57.72(d)(1) even if the project would not meet a strict application of that criteria. For example, in *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010) the Commission granted a requested waiver of certain provisions of 52 Pa. Code § 57.72(d) for a 2.03 miles project even though it “d[id] not meet the strict application of any of the [52 Pa. Code § 57.72(d)] exceptions” because “the line does come reasonably close to fitting within 52 Pa. Code § 57.71(d)(1)(vi) [sic].” In granting the requested waiver, the Commission also considered that the project would “be located entirely in an established utility corridor” composed of property

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<sup>9</sup> The Commission did not explicitly identify a criterion in relation to the segments being constructed entirely on the petitioner’s existing property but later referred to this land as the petitioner’s existing right-of-way thereby indicating this factor met the requirement at 52 Pa. Code § 57.72(d)(1)(i).

owned in fee by the utility, right-of-way owned by the utility, and property and right-of-way owned by a neighboring utility.

78. The Commission has also considered contributing factors not explicitly identified in the 52 Pa. Code § 57.72(d)(1) criteria in granting waivers of its siting regulations. For example, the Commission has found it may be favorable if a proposed project uses a transmission corridor of a utility other than the applicant. *See PPL Electric Utilities Corporation*, A-2011-2239171 (Aug. 25, 2015) (“The proposed Elroy-Hatfield Transmission line will be constructed entirely in an existing utility corridor. This corridor includes property owned in fee by PPL Electric, rights-of-way owned by PPL Electric, property owned in fee by PECO and rights-of-way owned by PECO. No additional rights-of-way are required. PPL Electric has entered into an agreement with PECO under which PPL Electric is permitted to occupy PECO’s land and rights-of-way in the utility corridor.”); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010). This is comparable to the use of an existing transmission corridor used by generators for generating connecting facilities. Another contributing factor the Commission has recognized is if a proposed project will have a minimal viewshed impact. *See Trans-Allegheny Interstate Line Company and Pennsylvania Electric Company*, Docket No. P-2012-2289393 (Dec. 20, 2012) (“the view shed impact of the Project is minimal since it will run parallel to an existing transmission line”). In addition, the Commission has recognized as a contributing factor if an applicant has acquired or expects to acquire all necessary real property rights for a proposed project. *See Trans-Allegheny Interstate Line Company and Pennsylvania Electric Company*, Docket No. P-2012-2289393 (Dec. 20, 2012) (“TrAILCo has executed options to acquire right-of-way agreements with all of the owners over whose property the Project will cross”); *PPL Electric Utilities*, Docket No. A-2019-3009112 (Sep. 19, 2019).

79. Here, the Project can be divided into six component transmission segments, each of which is individually appropriate for waiver of the requirement for a full alternative route analysis under 52 Pa. Code § 57.72(c)(10) for the following reasons:

- Segment 1 – The new Graceton substation to Peach Bottom North substation 500 kV 5040 Line consists of two segments. The first segment is approximately 4.0 miles from the Pennsylvania and Maryland border to the Cooper substation at approximately PECO’s existing structure 16-1 of the 229-93 Line. This segment is appropriate for waiver of 52 Pa. Code § 57.72(c)(10) because it is entirely within PECO’s existing right-of-way and will not substantially alter the right-of-way. *Compare PPL Electric Utility Co.*, Docket No. A-2022-3030969 (Dec. 23, 2022); *PPL Electric Utilities Co.*, Docket No. A-2019-3007945 (July 11, 2019); *PPL Electric Utilities Co.*, Docket No. P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Re Metropolitan Edison Company*, Docket No. P- 80070232, 1981 Pa. PUC LEXIS 56 (June 19, 1981). As a contributing factor, the new segment will have a minimal viewshed impact because the new transmission structures of the segment will replace existing structures and the new structures will be thinner and have a more modern design than the existing structures. *Compare Trans-Allegheny Interstate Line Company and Pennsylvania Electric Company*, Docket No. P-2012-2289393 (Dec. 20, 2012).
- Segment 2 – The second segment of the Graceton substation to Peach Bottom North substation 500 kV 5040 Line is approximately 1.5 miles from the Cooper substation to

- Peach Bottom North substation. This segment is appropriate for waiver of 52 Pa. Code § 57.72(c)(10) because it is less than two miles. *Compare PPL Electric Utilities Co.*, P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *Duquesne Light Company*, Docket No. P-2014-2401906 (May 22, 2014); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Pennsylvania Electric Co.*, A-110400F0045 (2006).
- Segment 3 – The entirety of the approximately 0.44 miles Graceton substation to Bramah substation 500 kV 5042 Line tie-in to the Bramah substation is a discrete segment of the Project. This segment is appropriate for waiver of 52 Pa. Code § 57.72(c)(10) because it is less than two miles. *Compare PPL Electric Utilities Co.*, P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *Duquesne Light Company*, Docket No. P-2014-2401906 (May 22, 2014); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Pennsylvania Electric Co.*, A-110400F0045 (2006). As a contributing factor, this segment will utilize Calpine’s existing transmission corridor. *Compare PPL Electric Utilities Co.*, A-2011-2239171 (Aug. 25, 2015); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010). In addition, approximately 330 to 340 feet of this segment will be built within PECO’s existing right-of-way.
  - Segment 4 – The entirety of the approximately 0.43 miles Bramah substation to Peach Bottom South substation 500 kV 5012 Line tie-in to the Bramah substation is a discrete segment of the Project. This segment is appropriate for waiver of 52 Pa. Code §

57.72(c)(10) because it is less than two miles. *Compare PPL Electric Utilities Co.*, P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *Duquesne Light Company*, Docket No. P-2014-2401906 (May 22, 2014); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Pennsylvania Electric Co.*, A-110400F0045 (2006). As a contributing factor, this segment will utilize Calpine's existing transmission corridor. *Compare PPL Electric Utilities Co.*, A-2011-2239171 (Aug. 25, 2015); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010). In addition, approximately 100 feet of this segment will be built within PECO's existing right-of-way.

- Segment 5 – The entirety of the approximately 1.1 miles 230 kV 220-08 Line segment around the Peach Bottom North substation is a discrete segment of the Project. This segment is appropriate for waiver of 52 Pa. Code § 57.72(c)(10) because it is less than two miles. *Compare PPL Electric Utilities Co.*, P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *Duquesne Light Company*, Docket No. P-2014-2401906 (May 22, 2014); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Pennsylvania Electric Co.*, A-110400F0045 (2006). As a contributing factor, this segment will utilize Calpine's existing transmission corridor. *Compare PPL Electric Utilities Co.*, A-2011-2239171 (Aug. 25, 2015); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010). In addition, approximately 0.1 miles of this segment will be built within PECO's existing right-of-way. As another contributing factor, the portion of the new segment that will be

constructed within PECO's existing right-of-way will have a minimal viewshed impact because the new transmission structures of the segment will replace existing structures and the new structures will be thinner and have a more modern design than the existing structures. *Compare Trans-Allegheny Interstate Line Company and Pennsylvania Electric Company*, Docket No. P-2012-2289393 (Dec. 20, 2012).

- Segment 6 – The entirety of the approximately 0.47 miles 230 kV 220-93 Line from Cooper substation to Bramah substation is a discrete segment of the Project. This segment is appropriate for waiver of 52 Pa. Code § 57.72(c)(10) because it is entirely within PECO's existing right-of-way and will not substantially alter the right-of-way. *Compare PPL Electric Utility Co.*, Docket No. A-2022-3030969 (Dec. 23, 2022); *PPL Electric Utilities Co.*, Docket No. A-2019-3007945 (July 11, 2019); *PPL Electric Utilities Co.*, Docket No. P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Re Metropolitan Edison Company*, Docket No. P- 80070232, 1981 Pa. PUC LEXIS 56 (June 19, 1981). This segment is also appropriate for waiver of 52 Pa. Code § 57.72(c)(10) because it is less than two miles. *Compare PPL Electric Utilities Co.*, P-2016-2545583 (Aug. 11, 2016); *PPL Electric Utilities Co.*, Docket No. P-2015-2497851 (Nov. 19, 2015); *Duquesne Light Company*, Docket No. P-2014-2401906 (May 22, 2014); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010); *Pennsylvania Electric Co.*, Docket No. P-2008-2037618 (June 24, 2008); *Pennsylvania Electric Co.*, A-110400F0045 (2006). As a contributing factor, the new segment will have a minimal viewshed impact because the new transmission

structures of the segment will replace existing structures and the new structures will be thinner and have a more modern design than the existing structures. *See Trans-Allegheny Interstate Line Company and Pennsylvania Electric Company*, Docket No. P-2012-2289393 (Dec. 20, 2012). An additional contributing factor is that this segment will utilize Calpine's existing transmission corridor. *See PPL Electric Utilities Co.*, A-2011-2239171 (Aug. 25, 2015); *PPL Electric Utilities Co.*, Docket No. P-2010-2206466 (Feb. 10, 2010).

80. Thus, consistent with the segment-by-segment analysis undertaken by the Commission in other proceedings, PECO requests the Commission waive the requirements of 52 Pa. Code § 57.72(c)(10) to the extent necessary to approve the Application.

#### **VIII. NOTICE**

81. PECO has provided public notices in accordance with Section 69.3102 of the Commission's Interim Siting Guidelines, 52 Pa. Code § 69.3 102.

82. PECO has provided information regarding the Project to representatives of Peach Bottom Township and York County. These entities have not objected to the proposed Project.

83. Copies of this Application and the Notice of Filing are being served on the entities identified in 52 Pa. Code § 57.74 of the Commission's regulations.

84. PECO will provide such additional forms of notice as may be directed by the Commission.

**IX. CONCLUSION**

WHEREFORE, PECO respectfully requests (1) Commission approval to construct the Project in Peach Bottom Township, York County, Pennsylvania, as explained above and in the Attachments hereto, and (2) Commission permission to waive information required by certain of the Commission's siting regulations as explained above to the extent the Commission may find that PECO did not otherwise provide information to fully meet 52 Pa. Code § 57.71(c)(10).

Respectfully submitted,



Kenneth M. Kulak  
Morgan, Lewis & Bockius LLP  
2222 Market Street  
Philadelphia, PA 19103-2921  
(215) 963-5384  
ken.kulak@morganlewis.com

VERIFICATION

I, William J. Patterer, hereby declare that I am the Vice President of Projects and Contracts for PECO Energy Company; that, as such, I am authorized to make this verification on its behalf; that the facts set forth in the foregoing petition are true and correct to the best of my knowledge, information, and belief; and that I make this verification subject to the penalties of 18 Pa. C.S.A. § 4904 pertaining to false statements to authorities.

DATE: September 30, 2024

  
\_\_\_\_\_  
WILLIAM J. PATTERER

# **Notice of Filing**

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**Application of PECO Energy Company :  
Filed Pursuant to 52 Pa. Code § 57.71 *et seq.* for Approval of the Siting and :     Docket No. A-2024-\_\_\_\_\_  
Construction of the Brandon Shores :  
Retirement Mitigation Project Located in :  
Peach Bottom Township, York County, :  
Pennsylvania and Petition for Waiver of :  
52 Pa. Code § 57.72(c)(10)**

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**NOTICE OF FILING**

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PECO Energy Company (“PECO” or the “Company”) will file an Application with the Pennsylvania Public Utility Commission (“Commission”) on or about September 30, 2024, pursuant to the Commission’s regulations at 52 Pa. Code § 57.72 *et seq.* and its Interim Guidelines for the Filing of Electric Transmission Line Siting Applications at 52 Pa. Code § 69.3101 *et seq.* The purpose of the Application is to seek the Commission review and approval required to locate, construct, operate, and maintain transmission lines and related facilities associated with the proposed Brandon Shores Retirement Mitigation Project (hereinafter, the “Project”). The entire Project will be located within Peach Bottom Township, York County, Pennsylvania. Pursuant to 52 Pa. Code § 57.74(c), you are receiving this Notice because you are the specified official of a relevant agency or because you are the record owner of property within the proposed rights-of-way for the Project. You are not required to appear or participate in this matter, but you may request Commission permission to intervene.

## OVERVIEW OF THE PROJECT

PECO is undertaking the Project to ensure it can continue to provide safe and reliable electric transmission service, which would otherwise be negatively impacted by the planned retirement of the Brandon Shores Generating Station. This project is also necessary to address and alleviate reliability issues caused by significantly increasing demands on the electric transmission system in PJM Interconnection, L.L.C. (“PJM”), the Regional Transmission Organization that encompasses PECO’s service territory and much of the Mid-Atlantic.

PECO was designated by PJM as responsible for the Project and is therefore obligated to construct the Project. Through the above-captioned Application, PECO seeks Commission approval of the siting and construction of Project.

The Project involves constructing five transmission lines predominantly within PECO’s existing transmission corridor. The Project also includes the expansion of the Peach Bottom North substation.

Subject to the Commission’s approval, construction on the Project is scheduled to begin in March 2026, and is scheduled to be in-service in December 2028.

## ROUTE FOR THE PROJECT

The Project will be constructed primarily within PECO’s existing rights-of-way and/or the rights-of-way of electric generators immediately adjacent to PECO’s existing rights-of-way. In particular, the majority of the Project will be sited within PECO’s existing transmission corridor that is approximately 300 feet wide and stretches approximately six miles from the Pennsylvania and Maryland border to Peach Bottom North and Peach Bottom South substations. PECO conducted an evaluation of conceptual “alternative corridors” and determined that there are no

better practicable alternatives to the transmission routes proposed in the Project due to many environmental, social, and engineering constraints around the Project area.

PECO proposes constructing five transmission lines described as follows:

- PECO will construct a new approximately 5.5 mile Graceton substation to Peach Bottom North substation 500 kV 5040 Line beginning at the Pennsylvania and Maryland border and extending northeast to the Peach Bottom North substation. PECO's ownership of this line ends at the Maryland border.
- PECO will construct a new approximately 0.44 mile 500 kV 5042 Line tie-in to connect the existing 5042 Line from the Pennsylvania and Maryland border to a new Bramah substation that will be constructed by an unaffiliated company.
- PECO will construct a new 5012 Line section of approximately 0.43 mile in new right-of-way that will connect the existing 5012 Line from the Bramah substation to Peach Bottom South substation.
- Approximately 1.1 miles of the existing 15.03 mile 230 kV 220-08 Line will be rerouted around the Peach Bottom North substation to accommodate the Peach Bottom North substation expansion.
- PECO will construct a new approximately 0.47 mile 230 kV 220-93 Line from Cooper substation to Bramah substation.

#### MAP

Enclosed are maps showing the transmission routes for the Project across all affected properties.

### EXAMINATION

A complete copy of the Application for the Project is available for examination during ordinary business hours at the following locations:

Peach Bottom Township Office  
6880 Delta Road  
Delta PA 17314

### PARTICIPATION

You are not required to appear or participate in this matter, but you may request Commission permission to intervene. To intervene as a formal party to this proceeding, you may file a petition to intervene with the Secretary of the Pennsylvania Public Utility Commission at P.O. Box 3265 Harrisburg, Pennsylvania 17105-3265. The petition to intervene should state your alleged right or interest to participate in the formal proceeding, the grounds of the proposed intervention, and your position regarding the issues in the formal proceeding. A copy of the petition to intervene should be served on the undersigned counsel for PECO.

### QUESTIONS

In the event you have any questions concerning the proposed Project but do not wish to participate as a formal party to the proceeding, you should contact either Anthony E. Gay, Vice

President & General Counsel for PECO, at (267) 533-1964, or Kenneth M. Kulak, legal counsel for PECO, at (215) 963-5384.

Respectfully,

A handwritten signature in black ink, appearing to read "Kenneth M. Kulak". The signature is fluid and cursive, with the first name being the most prominent.

Kenneth M. Kulak  
Morgan Lewis & Bockius LLP  
2222 Market Street  
Philadelphia, PA 19103-2921  
(215) 963-5384  
ken.kulak@morganlewis.com

**PECO Statement No. 1:  
Testimony of William J. Patterer**

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**APPLICATION OF PECO ENERGY COMPANY FILED PURSUANT  
TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL  
OF THE SITING AND CONSTRUCTION OF THE BRANDON  
SHORES RETIREMENT MITIGATION PROJECT IN PEACH  
BOTTOM TOWNSHIP, YORK COUNTY, PENNSYLVANIA AND  
PETITION FOR WAIVER OF 52 PA. CODE § 57.72(C)(10)**

**DOCKET NO. A-2024-\_\_\_\_**

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**DIRECT TESTIMONY**

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**WITNESS: WILLIAM J. PATERER**

**SUBJECTS: DIGEST TO THE TESTIMONY AND  
EXHIBITS; SUMMARY OF THE PROJECT;  
PECO'S APPLICATION, SITING, AND  
DECISION-MAKING PROCESSES; ROUTE  
DETERMINATION; OVERSIGHT OF  
CONSTRUCTION, OPERATIONS, AND  
MAINTENANCE; AND RIGHT-OF-WAY  
ACQUISITIONS**

**DATED: SEPTEMBER 30, 2024**

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**PREPARED DIRECT TESTIMONY  
OF  
WILLIAM J. PATERER**

**I. INTRODUCTION AND EXPERIENCE**

**Q. Please state your name and business address.**

A. My name is William J. Patterer. My business address is PECO Energy Company, 2301 Market Street, Philadelphia, PA 19103.

**Q. By whom are you employed and in what capacity?**

A. I am employed by PECO Energy Company (“PECO” or “Company”) as the Vice President of Projects and Contracts.

**Q. What are your current responsibilities?**

A. I am responsible for overseeing the project, construction, and contract management functions to effectively execute capital spending on new infrastructure as well as upgrades to the Company’s existing transmission, distribution, and gas assets.

**Q. Please describe your educational background and professional experience.**

A. I hold a Bachelor of Science in Mechanical Engineering from Villanova University and Master of Science in Engineering from Catholic University. In addition, I have a Master of Business Administration in Finance from Villanova University. I have also completed the Basic Rate Design Course offered by New Mexico State University and the EEI Advanced Rate Course offered by Indiana University.

I have been employed by PECO for over 25 years. I began my career in 1998 in PECO Nuclear serving as a Systems Engineer. I then transferred into the Rates Department as a Senior Rates Engineer where I was responsible for development

1 and implementation of new regulatory strategies and pricing policies. In 2004, I  
2 was promoted to Senior Rates Specialist in the same group with project management  
3 responsibility for major regulatory projects, including supporting merger and  
4 acquisition activities. In 2007, I was promoted to Manager of Regulatory Strategy  
5 with responsibility for managing base rate case filings and other major regulatory  
6 filings such as default service procurement. In 2012, I was promoted to Director of  
7 Regulatory and Revenue Policy where I was responsible for developing policies and  
8 strategies for the Company's regulatory initiatives, including electric and gas  
9 distribution rate cases before the Pennsylvania Public Utility Commission  
10 ("Commission"), transmission rate cases before the Federal Energy Regulatory  
11 Commission ("FERC"), electric and gas long-term infrastructure improvement  
12 plans, and smart meter deployment. In 2019, I assumed responsibilities as Director  
13 of Regional Operations where I oversaw Construction and Maintenance,  
14 Engineering and New Business teams in both suburban regions. In 2023, I was  
15 promoted to my current position.

16 **Q. Have you testified previously before the Commission or other regulatory**  
17 **agencies.**

18 A. Yes, I have testified before the Commission in the following cases:

- 19 • Docket No. A-2016-2546450 – Petition of PECO Energy for Approval of  
20 Its Microgrid Integrated Technology Pilot Plan;
- 21 • Docket No. P-2008-2062739 – Petition of PECO Energy for Approval of  
22 Its Default Service Program and Rate Mitigation Plan;

- 1 • Docket No. M-2009-2123944 – Petition of PECO Energy Company for
- 2 Approval of its Initial Dynamic Pricing and Customer Acceptance Plan;
- 3 • Docket No. M-00021689 – Demand Side Response Working Group;
- 4 • Docket No. R-00016938 – PECO Energy Company Wind Service Energy
- 5 Rider; and
- 6 • Docket No. A-110550F0160 – Joint Application of PECO Energy
- 7 Company and Public Service Electric and Gas Company for Approval of
- 8 the Merger of Public Service Enterprise Group, Inc. with and into Exelon
- 9 Corporation.

10 **Q. On whose behalf are you providing this testimony?**

11 A. I am testifying in support of the PECO’s application (“Application”) for approval  
12 to locate and construct the Brandon Shores Retirement Mitigation Project  
13 (“Project”).

14 **Q. What is the purpose of your testimony?**

15 A. I will provide an overview to the testimony and exhibits filed by PECO in support  
16 of this Application. In addition, the purpose of my testimony is to provide an  
17 overview of the Project, describe PECO’s process for preparing and filing the  
18 Application, describe PECO’s siting process, provide an overview of PECO’s  
19 decision-making process for planning and siting the Project, explain how PECO will  
20 oversee construction, operations, and maintenance of the Project, and provide a  
21 summary of the status of right-of-way acquisitions.

1 **Q. Are you responsible for the oversight and preparation of any of the**  
2 **attachments or exhibits filed with the Siting Application?**

3 A. Yes. I am sponsoring the following attachments:

- 4 • Attachment 1 – PUC Regulation Cross-Reference Matrix;
- 5 • Attachment 3 – Existing Transmission System Project Area Map;
- 6 • Attachment 4 – Proposed Transmission System Project Area Map; and
- 7 • Attachment 15 – Vegetation Management Program for New  
8 Transmission Construction Projects.

9 **II. DIGEST TO THE TESTIMONY AND EXHIBITS**

10 **Q. Please describe the Application filed by PECO in this proceeding.**

11 A. The Application filed with the Commission included an overview of the Project, a  
12 description of the proposed transmission lines, an explanation of the need for the  
13 transmission lines, a summary of the process of selecting the route for the  
14 transmission lines, a description of the necessary rights-of-way, and a summary of  
15 the estimated cost of the transmission lines and the scheduled in-service date.

16 In addition to me, four other witnesses are submitting direct testimony on  
17 PECO's behalf in support of its Application:

- 18 • PECO Statement No. 2: Amber C. Thomas, Senior Manager of Regional  
19 Transmission Planning for Atlantic City Electric Company, Delmarva  
20 Power & Light Company, and PECO, provides an overview of system  
21 planning including the PJM Interconnection, L.L.C. ("PJM") Regional  
22 Transmission Expansion Plan, the need for the Project to address

1 reliability concerns identified by PJM, and PECO's obligation to  
2 complete the Project.

- 3 • PECO Statement No. 3: Barry A. Baker, Vice President and Practice Lead  
4 for AECOM Technical Services Corporation, describes the proposed  
5 route for the project, why there is no reasonable better alternative route,  
6 and the steps taken to assess such alternatives. He also summarizes the  
7 social, environmental, and engineering considerations for the Project, and  
8 explains the public outreach efforts undertaken by PECO.

- 9 • PECO Statement No. 4: Drew Davis, Vice President of Transmission and  
10 Substations, explains the major design features of the Project, describes  
11 the safety features that will be incorporated into the Project, and explains  
12 PECO's electromagnetic field policy and measures to mitigate the  
13 impacts of transmission lines.

- 14 • PECO Statement No. 5: Daniel F. Pacheco, Manager, Acquisition and  
15 Taxes, Real Estate and Facilities Department, provides an overview of  
16 PECO's existing transmission line rights-of-way, explains PECO's  
17 process to acquire land rights for additional transmission line rights-of-  
18 way, and summarize the status of negotiations with relevant landowners.

19 Each of these witnesses is also sponsoring various exhibits that accompany  
20 the Application, as identified in their respective written direct testimonies.



1 (3) a new approximately 0.43 mile Bramah to Peach Bottom South 500 kV 5012  
2 Line tie-in to the Bramah substation, (4) an approximately 1.1 miles 230 kV 220-08  
3 Line segment around the Peach Bottom North substation, and (5) a new  
4 approximately 0.47 mile 230 kV 220-93 Line from the Cooper substation to the  
5 Bramah substation. As part of the Project, PECO will replace certain existing  
6 transmission lattice tower structures with monopole designs to modernize the  
7 transmission infrastructure and allow for vertical stacking of conductors. The  
8 majority of the transmission construction will occur in PECO's existing rights-of-  
9 way, and the limited additional transmission construction that will require new  
10 rights-of-way will be located adjacent to PECO's existing rights-of-way and will  
11 largely leverage the property rights of neighboring generators. The Project is  
12 scheduled to be in-service by December 31, 2028. The cost of the Project is  
13 currently estimated to be approximately \$118 million. Based on our experience and  
14 at the current 30% level of design and engineering, the total costs of the projects  
15 that PJM assigned to PECO could increase or decrease by up to 25%. Additional  
16 information regarding the Project, including the existing and proposed transmission  
17 system project area maps is included with the Application as Attachments 3 and 4.

18 As explained by Ms. Amber Thomas, PECO Statement No. 2, PECO is  
19 obligated and responsible for the construction, ownership, maintenance, and  
20 operation of the transmission lines of the Project and the substation expansion.

1 **IV. PECO'S APPLICATION, SITING, AND DECISION-MAKING PROCESSES**

2 **Q. Please describe the process PECO employed in preparing the Application.**

3 A. The Application demonstrates that the Project is needed to provide reliable service,  
4 is appropriately designed, and is sited in a reasonable location. The need for the  
5 Project is summarized above and explained more fully by Ms. Amber Thomas,  
6 PECO Statement No. 2. The siting process and environmental assessment are  
7 described by Mr. Barry Baker, PECO Statement No. 3. The design and safety  
8 features and applicable rights-of-way of the Project are described by Mr. Drew  
9 Davis, PECO Statement No. 4, and Mr. Daniel Pacheco, PECO Statement No. 5,  
10 respectively.

11 PECO's process to prepare this Application recognized the regulatory  
12 requirements of the Commission and the successful format that has been used in  
13 prior applications before the Commission. Early in the preparation process, PECO  
14 identified the testimonies and attachments necessary for the Application. Teams of  
15 experts were assigned responsibility for developing the necessary material to  
16 support each component of the Application. PECO has maintained oversight of all  
17 aspects of this Project throughout the period prior to the filing of this Application,  
18 and will continue to do so through engineering, construction, and project  
19 commissioning. A matrix cross-referencing Commission regulations applicable to  
20 the Application is included with the Application as Attachment 1. In addition,

1 included with the Application as Attachment 17 is a list of agency and permit  
2 requirements and a permit matrix applicable to the Application.

3 **Q. Please summarize PECO's experience and expertise in planning and**  
4 **constructing high voltage transmission line projects.**

5 A. PECO's experience and expertise in planning and constructing high voltage  
6 transmission line projects dates back many decades. Today, PECO owns and  
7 maintains approximately 188 miles of 500 kV and 230 miles of 230 kV high voltage  
8 transmission line. PECO has the expertise to plan, design, and construct high  
9 voltage transmission line projects and related construction, including work activities  
10 at substations. PECO maintains a staff of planning and design engineers for high  
11 voltage transmission projects and may supplement that staff with contract resources  
12 as appropriate. The following are examples of other high voltage transmission line  
13 projects PECO has constructed:

- 14 • In 2016, PECO constructed the new 230 kV 220-43 Line (1.88 miles)  
15 from the Linwood substation to Chichester substation in Lower  
16 Chichester Township and Trainer Borough, Docket No. A-2016-  
17 2523055;
- 18 • In 2019, PECO reconductored the 138 kV 130-20 Line (4 miles) from the  
19 Emilie substation to Falls substation in Bristol and Falls Townships,  
20 Docket No. A-2019-3011226;

- 1 • In 2022, PECO rebuilt the 138 kV 130-54 Line (0.66 miles) from the  
2 Newlinville substation to Cliffs Steel substation in Bristol Township,  
3 Docket No. A-2022-3030419; and
- 4 • In 2022, PECO rebuilt 1.3 miles of the 138 kV 130-36 Line from the  
5 Llanerch substation to the Bryn Mawr substation in Haverford Township,  
6 Docket No. A-2022-3034261.

7 **Q. What are the goals of PECO’s siting process?**

8 A. Through the siting process, PECO aims to achieve a reasonable balance of multiple  
9 competing factors in selecting a transmission line route and constructing  
10 transmission facilities. These factors include: minimizing the impacts on the  
11 environment, landowners, and land use; minimizing costs; and avoiding population  
12 centers, historic and cultural sites, and scenic areas. PECO strives to achieve all of  
13 these goals, but it is not always possible to fully realize each goal because some  
14 goals may be mutually exclusive. For example, PECO often cannot site  
15 transmission lines in residential areas without impacting at least some landowners.  
16 Nevertheless, PECO undertakes all reasonable efforts to mitigate the impacts of  
17 transmission projects, including compliance with all permits, procedures, and  
18 requirements of those agencies that have jurisdiction and responsibility for the  
19 applicable environmental impacts.



1 **Q. Please explain how decisions are made by the siting team.**

2 A. PECO's siting team works toward building a consensus on important decisions for  
3 the Project. For example, the siting team identifies the superior route option, which  
4 for this Project was a clear choice, and the siting team collectively agrees on the  
5 selection of that route.

6 **Q. What was your role on the siting team for the Project?**

7 A. My responsibility was to lead the siting team, including overseeing various aspects  
8 of the project design, application development for regulatory approvals, project cost  
9 assessments and refinements, and development of the overall schedule from  
10 inception through construction to in-service. The efforts of the siting team were  
11 intended to minimize impacts to the environment and landowners while meeting  
12 electrical and reliability objectives of the Project. The siting team also assessed  
13 routes for the transmission lines of the Project, with consideration of potential  
14 alternatives, resulting in the determination of the proposed route based on practical,  
15 environmental, reliability, and economic considerations. As explained further by  
16 Mr. Barry Baker, PECO Statement No. 3, PECO ultimately determined that the  
17 proposed route was the only reasonable option because by using the proposed route  
18 the Project will use consists of mostly existing PECO or neighboring generators'  
19 land rights. Because there were no better practicable alternatives for the Project,  
20 PECO did not conduct a full study of alternative routes.

21 In the performance of these responsibilities, I provided leadership oversight  
22 of a comprehensive schedule for project execution including siting application

1 development. This schedule includes complex coordination amongst multiple  
2 vendors associated with the project as well as internal stakeholders from various  
3 business units throughout PECO such as Project Management, Transmission and  
4 Substations, Transmission Planning, Transmission Systems Operations, External  
5 Affairs, Environmental Affairs, Communications, Real Estate, and Legal. This is a  
6 comprehensive schedule for regulatory reviews (Commission and environmental  
7 agencies) and timing of applications and information filing. This includes ensuring  
8 that the application satisfied the requirements of the Commission and environmental  
9 agencies. The above schedule comprised overseeing the conduct of numerous  
10 environmental and technical studies including, but not limited to, wetlands  
11 delineation, threatened and endangered species assessments, important plant species  
12 assessments, cultural and historical resource assessments, a lead paint assessment  
13 for existing transmission structures, and development of a comprehensive  
14 electromagnetic field study for the project expanse.

15 I was also responsible for the development of PECO's strategy to ensure key  
16 stakeholders, including local and municipal officials as well as adjacent property  
17 owners, are aware of the technical project details including route and associated  
18 facilities includes providing information housed on PECO's webpage media and  
19 presented through an Open House event as required by the Commission. This  
20 strategy ensures that these key stakeholders receive timely communications on an  
21 ongoing basis as the project proceeds related to important construction sequencing  
22 and other key project execution details.



1 activities in a safe, timely, and efficient manner. Mr. Drew Davis, PECO Statement  
2 No. 4, further explains PECO's planned maintenance activities for the Project.

3 **Q. Please describe the procedures that will be employed to maintain the rights-of-**  
4 **way free of incompatible vegetation following the completion of construction**  
5 **and the commencement of operations.**

6 A. PECO will approach maintaining clear rights-of-way for the Project consistent with  
7 its overall vegetation management program and in compliance with North American  
8 Electric Reliability Corporation reliability standard FAC-003-5 which mandates  
9 certain clearances and activities that electric utilities must adhere to. A copy of this  
10 vegetation management program is provided at Attachment 15. To summarize the  
11 program, for the initial clearing of a new right-of-way, PECO initially removes all  
12 vegetation except for grasses and herbaceous or non-woody plants within the right-  
13 of-way. Thereafter, rights-of-way are managed using integrated vegetation  
14 management to promote the establishment of low growing compatible plant  
15 communities. Incompatible species are controlled using a number of methods,  
16 including the use of herbicides. Such selective management allows compatible  
17 species of vegetation that do not grow high enough to pose a threat to the reliable  
18 operation of the transmission line to remain within the right-of-way. The edges of  
19 the right-of-way are periodically maintained by pruning and tree removals to  
20 prevent narrowing over time. Tower areas are regularly maintained to address  
21 vegetation that could come into contact with the structure.

1 All vegetation management work is performed by qualified professionals,  
2 and all herbicides are Environmental Protection Agency-approved and applied by  
3 trained applicators as required by the Pennsylvania Department of Agriculture.  
4 PECO does not currently use aerial herbicide application techniques.

## 5 **VII. RIGHT-OF-WAY ACQUISITIONS**

6 **Q. What is the status of PECO's acquisitions of applicable land rights?**

7 A. The majority of the Project is located within PECO's existing rights-of-way. As  
8 explained by Mr. Daniel F. Pacheco, PECO Statement No. 5, it is necessary for  
9 PECO to acquire certain land rights for the Project. Shortly after this filing, PECO  
10 will begin negotiations with landowners and easement holders to obtain all  
11 necessary and relevant land rights for the Project.

## 12 **VIII. CONCLUSION**

13 **Q. Does this conclude your testimony?**

14 A. Yes.

## VERIFICATION

I, William J. Patterer, hereby state that the facts set forth in my Testimony are true and correct to the best of my knowledge, information, and belief. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATE: September 30, 2024

  
\_\_\_\_\_  
WILLIAM J. PATTERER

**PECO Statement No. 2:  
Testimony of Amber C. Thomas**

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF PECO ENERGY COMPANY FILED PURSUANT  
TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL  
OF THE SITING AND CONSTRUCTION OF THE BRANDON  
SHORES RETIREMENT MITIGATION PROJECT IN PEACH  
BOTTOM TOWNSHIP, YORK COUNTY, PENNSYLVANIA AND  
PETITION FOR WAIVER OF 52 PA. CODE § 57.72(C)(10)

DOCKET NO. A-2024-\_\_\_\_

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DIRECT TESTIMONY

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WITNESS: AMBER THOMAS

SUBJECTS: PJM REGIONAL TRANSMISSION  
EXPANSION PLAN PROCESS; NEED FOR  
THE PROJECT AND PJM'S SELECTION OF  
PECO; AND PECO'S OBLIGATION TO  
CONSTRUCT THE PROJECT

DATED: SEPTEMBER 30, 2024

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**PREPARED DIRECT TESTIMONY  
OF  
AMBER THOMAS**

**I. INTRODUCTION AND EXPERIENCE**

**Q. Please state your name and business address.**

A. My name is Amber Christine Thomas. My business address is PECO Energy Company, 2301 Market Street, Philadelphia, PA, 19103.

**Q. By whom are you employed and in what capacity?**

A. I am employed by Exelon Business Services Company, LLC (“Exelon”). I am the Senior Manager of Regional Transmission Planning for Exelon’s Mid-Atlantic North Region, which is comprised of three of Exelon’s six utilities: Atlantic City Electric Company (“ACE”), Delmarva Power & Light Company (“Delmarva Power”), and PECO Energy Company (“PECO” or “Company”).

**Q. What are your current responsibilities?**

A. I am responsible for leading a team of engineers who are responsible for transmission planning activities related to the development of transmission infrastructure for ACE, Delmarva Power, and PECO. My team, in coordination with other departments, is responsible for performing and evaluating analysis which supports the development of transmission system upgrades to maintain and support reliability. My primary responsibilities include: (1) overseeing the evaluation and/or mitigation of transmission system needs identified through power flow analysis, dynamic studies, short circuit studies, and market efficiency analysis to meet reliability criteria and standards of PJM Interconnection, LLC (“PJM”), North

1 American Electric Reliability Corporation (“NERC”), ReliabilityFirst Corporation,  
2 and Federal Energy Regulatory Commission (“FERC”); (2) developing plans for  
3 the expansion of the ACE, Delmarva Power, and PECO systems (inclusive of  
4 supplying service to local cooperatives and municipal electric companies) to support  
5 new load connections and generator interconnections which span Delaware,  
6 Maryland, New Jersey, and Pennsylvania; and (3) providing technical guidance with  
7 respect to transmission-related working groups, task forces, forums, and committees  
8 such as the PJM Planning, Transmission Expansion Advisory Committee  
9 (“TEAC”), Subregional RTEP<sup>1</sup> Committee, and Transmission Owners Agreement-  
10 Administrative Committee.

11 **Q. Please describe your educational background and professional experience.**

12 A. I earned my Bachelor of Science’s degree in Electrical Engineering with a  
13 concentration in Power Systems from Drexel University in Philadelphia. I have  
14 worked in the electric utility industry for almost 15 years, and have held various  
15 positions in transmission planning, transmission system modeling, transmission  
16 regulatory and rates, and transmission strategy, including close to a decade of  
17 transmission planning experience at PJM. Prior to my current role, I was the  
18 Principal of Transmission Development & Strategy at Exelon, where I was  
19 responsible for the development and advocacy of various transmission policies at  
20 PJM, FERC, the state public utility commissions within the PJM footprint, and the

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<sup>1</sup> “RTEP” is defined as Regional Transmission Expansion Plan.

1 Edison Electric Institute. My responsibilities included the formulation and framing  
2 of policy positions relating to generator interconnection reform, utility investment  
3 of network upgrades to support generator interconnections, cost allocation of  
4 transmission investment, infrastructure resilience, and transmission and  
5 interregional planning.

6 Prior to joining Exelon, I was the Senior Transmission Regulatory & Rates  
7 Specialist at PPL Electric Utilities. My responsibilities at that time included  
8 development of transmission strategy, formulation of policy, and advocacy of  
9 regulatory issues at PJM, FERC, the Pennsylvania Office of Consumer Advocate,  
10 and the Pennsylvania Public Utility Commission (“Commission”). My focus area  
11 at that time was with respect to developing and/or enhancing policies related to  
12 PJM’s Supplemental Project Planning, asset management, utility investment of  
13 network upgrades, mitigation of CIP-014 assets, and utility rate design.

14 Prior to working at PPL Electric Utilities, I was a senior engineer at PJM. As  
15 an engineer at different periods within PJM’s Transmission Planning and System  
16 Planning Modeling & Support groups, I was responsible for performing stability,  
17 power flow, and short circuit analyses within the PJM footprint, supporting  
18 generator deactivation studies and generation queue studies, performing integration  
19 studies for new transmission owners joining PJM, recommending transmission  
20 project proposals to address system needs identified through PJM RTEP criteria or  
21 Transmission Owner FERC 715 Criteria, supervising a team of engineers to develop  
22 power flow and short circuit cases for PJM RTEP’s processes, supervising the

1 development of internal and external applications, updating PJM transmission  
2 manuals, and creating deskside references on transmission planning for engineers,  
3 amongst other activities.

4 **Q. Have you testified previously before the Commission or other regulatory**  
5 **agencies?**

6 A. I have not testified before the Commission. I have testified before the Maryland  
7 Public Service Commission in relation to Case No. 9698 for Delmarva Power's  
8 Vienna Substation-Maryland/Delaware State Line 138 kV transmission line rebuild.

9 **Q. On whose behalf are you providing this testimony?**

10 A. I am testifying in support of the PECO's application ("Application") for approval  
11 to locate and construct the Brandon Shores Retirement Mitigation Project  
12 ("Project").

13 **Q. What is the purpose of your testimony?**

14 The purpose of my testimony is to provide an overview of the PJM RTEP process,  
15 explain the need for the Project with identification of the reliability issues mitigated  
16 by the Project, and summarize how PJM selected PECO to construct the Project  
17 through the RTEP process. Furthermore, I will describe PECO's obligation to  
18 complete the Project and the adverse risks if the Project is not constructed.

19 **Q. Are you responsible for the oversight and preparation of any of the**  
20 **attachments or exhibits filed with the Siting Application?**

21 Yes. I am sponsoring Attachment 2 – Purpose and Need Statement for the Project.

## II. PJM'S RTEP PROCESS

### Q. Please describe PJM.

A. PJM is an independent regional transmission organization (“RTO”) regulated by FERC that is responsible for independently operating the competitive wholesale electricity market and performing regional transmission planning functions to ensure the reliability of the interstate electric transmission system under its functional control. The PJM electric system serves over 65 million customers through a territory including all or portions of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, as well as the District of Columbia, in the mid-Atlantic region. PJM, like other FERC-approved and federally-regulated RTOs, has a number of specific duties and responsibilities established by federal law and FERC decisions, including ensuring the reliability of the transmission grid in the PJM region and operating the regional transmission system in a manner consistent with applicable laws, regulations, and tariffs.

PECO, as an owner of transmission facilities in Pennsylvania and signatory to the PJM Consolidated Transmission Owners Agreement (“CTOA”), is a member of PJM and actively participates in the PJM stakeholder processes including the transmission planning process.

1 **Q. Please describe PJM's role in transmission planning, including administering**  
2 **the RTEP process.**

3 A. Annually as part of the RTEP process, PJM is responsible for performing various  
4 reliability tests such as N-1, N-1-1, and generator deliverability criteria tests on all  
5 Bulk Electric System facilities within the PJM footprint based on NERC  
6 Transmission System Planning Performance Requirements. These analyses are  
7 performed by considering: 1) for N-1, how the transmission system will respond to  
8 the loss of a single facility (i.e., transmission line, transformer, generator facility);  
9 2) for N-1-1, how the transmission system will respond to the sequential loss of a  
10 single facility followed by system adjustments (i.e., redispatch) before the loss of  
11 the second facility; and 3) for generator deliverability, how the transmission system  
12 will respond to the transfer of generation from one part of the system to another part  
13 of the system with the loss of various facilities. PJM is also responsible for  
14 performing these tests for generator deactivation requests. For a generator  
15 deactivation request, PJM performs these reliability analyses to determine the  
16 impacts to the system of a generator unit retiring.

17 If PJM determines that there are system violations – such as thermal  
18 overloads, voltage magnitude or voltage drop issues – due to the outage of system  
19 facilities, PJM will direct transmission system upgrades to be built to maintain and  
20 ensure the reliability and safety of the grid. PJM coordinates with transmission  
21 owners, either through competitive or non-competitive processes, to determine what  
22 projects should be recommended to mitigate the system violations. Then PJM will

1 recommend solutions to the system violations and present the needs, solutions, and  
2 alternatives at the TEAC and/or Subregional RTEP Committee meetings. PJM staff  
3 will then recommend the proposed projects to the PJM Board of Managers for  
4 approval, and once the Boards approves, the projects are included in the RTEP.

5 **Q. What are some of the drivers within PJM’s RTEP processes?**

6 A. PJM’s RTEP is primarily driven by system reliability needs, market efficiency,  
7 operational performance, as well as meeting public policy requirements and goals.

8 **Q. Is PJM’s RTEP process documented?**

9 A. Yes. The PJM RTEP Protocol and PJM’s planning role are set forth in the PJM  
10 Open Access Transmission Tariff (“Tariff”), Schedule 6 of the PJM Operating  
11 Agreement (“OA”), and PJM Manuals 14A through 14H.

12  
13 **III. NEED FOR THE PROJECT AND PJM’S SELECTION OF PECO**

14 **Q. Please explain how the PJM RTEP process determines whether there is a**  
15 **transmission need for a system upgrade.**

16 A. As part of PJM’s annual RTEP process as outlined in PJM’s OA Schedule 6, PJM  
17 Tariff Part V Generation Deactivation, and Manuals 14B, 14D, and 14F, among  
18 other requirements and procedures, PJM studies the need for system expansion or  
19 enhancement projects (e.g., baseline projects) across a 15-year planning horizon to  
20 primarily address the following:

- 21 • Baseline reliability upgrades (inclusive of FERC Form # 715 projects, which are  
22 Transmission Owner reliability criteria filed with FERC);

- 1 • Market efficiency upgrades;
- 2 • Operational Performance upgrades; and
- 3 • State Agreement Approach projects.

4 These system upgrades adhere to planning criteria that include:

- 5 • Conforming to the applicable reliability principles, guidelines, and the
- 6 reliability standards of NERC, ReliabilityFirst Corporation, and SERC
- 7 Reliability Corporation;
- 8 • Improving market efficiency by identifying the system upgrades that can
- 9 relieve transmission constraints;
- 10 • Improving operational performance, particularly to maintain reliability criteria;
- 11 and
- 12 • Addressing state public policy goals and initiatives through the State
- 13 Agreement Approach described in the Operating Agreement.

14 **Q. Please provide a summary of the need for the Project.**

15 A. The Project is needed to mitigate potential reliability issues and maintain reliability  
16 as a result of deactivations of Unit 1 and Unit 2 at the 1,273 MW (summer rating)  
17 coal-fired Brandon Shores Generating Station (“Brandon Shores”).

18 On April 6, 2023, Talen Energy, the current operator of Brandon Shores,  
19 notified PJM of the planned deactivation of these units on June 1, 2025. After  
20 analyzing the effects of the planned deactivation, PJM determined these retirements  
21 would have multiple widespread reliability impacts. Specifically, PJM identified

1 widespread voltage deviation violations for N-1 and N-1-1 contingencies due to the  
2 deactivation of Brandon Shores in the service territories of PECO as well as  
3 Baltimore Gas and Electric Company (“BGE”), Potomac Electric Power Company  
4 (“Pepco”), Dominion Energy, Allegheny Power (“FirstEnergy Corporation”),  
5 Metropolitan Edison, and PPL Electric Utilities. Additionally, PJM identified  
6 thermal violations for N-1 and N-1-1 contingencies on 115kV, 138kV, and 230kV  
7 lines in the BGE, FirstEnergy Corporation, and Pepco service territories, among  
8 other violations. PJM determined that these thermal and voltage violations must be  
9 mitigated to maintain reliability once the Brandon Shores generator units retire. As  
10 a result, PJM directed the development of certain transmission facilities within  
11 PECO’s service territory to address these needs. Included as Attachment 2 to the  
12 Application is a Purpose and Need Statement for the Project.

13 **Q. Please describe how PECO addressed the violations of system planning criteria**  
14 **and system needs identified by PJM.**

15 A. PJM’s analysis of the Brandon Shores deactivation and identification of the  
16 resulting reliability concerns led to PJM identifying the need to develop Immediate-  
17 need reliability projects since the Brandon Shores units would be deactivating in  
18 slightly over 2 years from the time Talen requested the deactivation. Furthermore  
19 the deactivation would compound significant other reliability concerns identified by  
20 PJM in a then-ongoing competitive process initiated only a few months earlier.<sup>2</sup> On

---

<sup>2</sup> In February 2023, PJM initiated a separate “2022 RTEP Window 3” process to competitively solicit proposals to address reliability concerns related to the projected growth of significant load concentrated primarily in northern

1 May 7, 2023, PJM provided public notice that it was assessing the potential for  
2 Immediate-need projects. PECO, in collaboration with BGE and Pepco, proposed  
3 system upgrades to resolve the Immediate-need issues identified due to the Brandon  
4 Shores planned deactivation. Thereafter, PJM published to the TEAC a generation  
5 deactivation notification update that identified recommended system  
6 reinforcements to fully address the identified reliability concerns, which included  
7 of the facilities proposed by PECO. These system upgrades proposed for PECO are  
8 essentially the same transmission projects as the current Project.

9  
10 **Q. Please describe the project proposed to PJM to address the Brandon Shores**  
11 **Deactivation Reliability Violations.**

12 A. PECO, in coordination and collaboration with BGE and Pepco, proposed system  
13 upgrades to resolve the immediate need issues identified due to the Brandon Shores  
14 planned deactivation. As a separate process, PJM began the PJM 2022 RTEP  
15 Reliability Window 3 competitive process a couple of months before the Brandon  
16 Shores deactivation request was announced to develop proposals primarily aimed at  
17 addressing the reliability issues stemming from the significant load growth in the  
18 northern Virginia area. PECO was able to leverage its West Cooper Max Proposal  
19 to address both the forecasted load growth needs identified in the PJM 2022 RTEP  
20 Reliability Window 3 competitive process as well as the system needs due to the

---

Virginia, but also in parts of Maryland, due to the load growth in those areas mainly from the development of data centers in that region.

1 planned retirement of Brandon Shores. As originally proposed to address for the  
2 Brandon Shores deactivation, PECO proposed the following:

- 3 • Establish a new West Cooper substation by cutting into the existing 5012  
4 Peach Bottom South – Conastone 500 kV line and building a new 3 breaker  
5 ring substation, 500/230 kV transformer, and control house;
- 6 • Build a new Peach Bottom to Graceton (PECO) – New 500 kV transmission  
7 line;
- 8 • Reconfigure the Cooper transmission feed; and
- 9 • Upgrade Peach North Substation by adding 3 500 V breakers to form a  
10 breaker-and-a-half bay to allow for new 500 kV line termination.

11 **Q. Will the Project address the reliability concerns identified by PJM?**

12 A. Yes. As explained above, the Project was designed to resolve the significant and  
13 widespread reliability issues that would otherwise result from the retirement of  
14 Brandon Shores. Upon completion, the Project will mitigate thermal and voltage  
15 issues in the Exelon Mid-Atlantic region and increase transmission capacity within  
16 PECO's territory. The Project will also support the mitigation of the reliability  
17 concerns identified in PJM's separate 2022 PJM Window 3 process.

18 **Q. Please describe the reliability must-run designation for the Brandon Shores**  
19 **generators.**

20 A. Within PJM, Reliability Must-Run ("RMR") refers to the need for a generator unit  
21 to continue to run past its requested retirement date in order to maintain system  
22 reliability. Typically, the unit remains operational beyond its proposed retirement

1 when interim operational steps cannot address the reliability issues on the system  
2 and to allow for transmission upgrades to be built. Because Brandon Shores would  
3 deactivate before any mitigation could be completed (i.e., by June 1, 2025), and due  
4 to a lack of operating measures available to address the reliability issues on the  
5 transmission system until the system upgrades are completed (including the Project  
6 as well as system upgrades by other transmission owners), PJM requested Talen to  
7 extend its operation of Brandon Shores. On April 18, 2024, Talen filed with the  
8 FERC a Continuing Operations Rate Schedule (typically referred to as a “RMR  
9 Agreement”) for Units 1 and 2 of Brandon Shores with a Monthly Fixed Cost  
10 Charge of \$14,619,407 (Annual Fixed Cost of \$175,432,884) from June 1, 2025,  
11 through December 31, 2028, subject to earlier termination and/or termination within  
12 180 days with written notice from PJM of such request. The cost for the continued  
13 operation of Brandon Shores under the RMR Agreement will be borne by various  
14 customers within the PJM footprint, including Pennsylvania customers. This  
15 monthly charge will continue until the Brandon Shores generators are retired and  
16 the reliability issues identified by PJM are addressed, including those prompting the  
17 Project. Once the Project is complete, along with the other projects associated with  
18 the Brandon Shores deactivation, then the RMR Agreement for Brandon Shores  
19 should no longer be needed.

#### 20 **IV. PECO’S OBLIGATION TO CONSTRUCT THE PROJECT**

21 **Q. Is PECO obligated to construct the Project?**

22 **A. Yes.**

1 **Q. Please explain why PECO is obligated to complete the Project.**

2 A. Since PJM functions as the RTO with a primary responsibility of coordinating the  
3 planning and operation of the transmission facilities within its footprint, PECO, as  
4 a member of PJM, has formally transferred certain planning and operating  
5 responsibilities to PJM and is subject to the provisions of the CTOA.

6 Article 4.1.1 of the CTOA authorizes PJM to provide transmission service  
7 over its transmission facilities in the PJM region under the PJM Tariff. Article  
8 4.1.4 recognizes that, as a signatory, PECO has turned over the preparation of  
9 expansion planning to PJM and will subsequently work with and cooperate in the  
10 development of the RTEP. Article 4.2 describes signatories' obligation to build the  
11 projects identified in the RTEP. Specifically, Article 4.2.1 states

12 Parties designated as the appropriate entities to construct and own or finance  
13 enhancements or expansions applicable to the PJM Region specified in the  
14 Regional Transmission Expansion Plan or required to expand or modify  
15 Transmission Facilities pursuant to the PJM Tariff shall construct and own  
16 or finance such facilities or enter into appropriate contracts to fulfill such  
17 obligations.

18  
19 Article 4.2.2 of the CTOA further outlines the responsibility of the transmission  
20 owner to which an RTEP project has been designated to accept construction  
21 responsibility. Specifically, Article 4.2.2 states

22 Within ninety (90) days of receiving notification from PJM pursuant to  
23 Section 1.6 of the Regional Transmission Expansion Planning Protocol, that  
24 the PJM Board has approved a Regional Transmission Expansion Plan  
25 designating a Party to construct and own or finance specified enhancements  
26 or expansions applicable to the PJM Region, such Party shall provide to PJM  
27 and the Administrative Committee: (1) an acknowledgement of such  
28 designation or the reasons why the Party disagrees with such designation or

1 any aspect thereof, and (2) a proposed preliminary schedule for such  
2 enhancements or expansions.

3  
4 The PJM Board of Managers approved the Project on July 12, 2023.

5 Thereafter, PJM designated PECO responsible for the construction of the Project  
6 on July 19, 2023. Pursuant to the CTOA, PECO is obligated to construct the  
7 Project because of PJM's designation.

8 **Q. What happens if the Project is not constructed, or construction is delayed?**

9 A. If the Project is not constructed or construction is delayed, the widespread reliability  
10 violations identified by PJM will not be fully mitigated. Specifically, if the Project  
11 is not constructed, PECO will be in violation of the PJM reliability criteria tests  
12 which identified the overloads and other reliability issues that led to the proposed  
13 Project. For example, if the Project is not completed and the specific outage events  
14 identified in the analyses were to occur, in the worst case, catastrophic failure of  
15 various transmission facilities could occur and/or customer load would be dropped  
16 to prevent such failures. This could result in customers losing power and being  
17 without power for significant durations until the facilities were repaired. The  
18 severity of these issues would not only impact customers in PECO's service  
19 territory, but based on the results identified by PJM, these issues could impact  
20 customers across the mid-Atlantic and service territories of BGE, Pepco, Dominion  
21 Energy, and parts of the FirstEnergy Corporation service territory. Furthermore, if  
22 the Project is not constructed or is delayed, PJM may determine a need to extend  
23 the duration that the Brandon Shores generators must remain operation so that PJM

1 can continue to reliably operate the transmission system. This in turn could lead to  
2 PJM requesting an extension of the Brandon Shores RMR Agreement, increasing  
3 the costs borne by certain Pennsylvania ratepayers.

4 In order to avoid these potential consequences and to reliably maintain the  
5 grid for when Brandon Shores deactivates, the Project must be constructed.  
6 Therefore it is critical that the Commission approve of the Project as requested in  
7 the Application.

#### 8 **V. CONCLUSION**

9 **Q. Does this conclude your testimony?**

10 **A. Yes.**

## VERIFICATION

I, Amber Christine Thomas, hereby state that the facts set forth in my Testimony are true and correct to the best of my knowledge, information, and belief. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATE: September 30, 2024   
AMBER C. THOMAS

**PECO Statement No. 3:  
Testimony of Barry A. Baker**

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF PECO ENERGY COMPANY FILED PURSUANT  
TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL  
OF THE SITING AND CONSTRUCTION OF THE BRANDON  
SHORES RETIREMENT MITIGATION PROJECT IN PEACH  
BOTTOM TOWNSHIP, YORK COUNTY, PENNSYLVANIA AND  
PETITION FOR WAIVER OF 52 PA. CODE § 57.72(C)(10)

DOCKET NO. A-2024-\_\_\_

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DIRECT TESTIMONY

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WITNESS: BARRY A. BAKER

SUBJECTS: LACK OF REASONABLE ALTERNATIVE  
ROUTES; ENVIRONMENTAL STUDIES;  
AND PUBLIC OUTREACH

DATED: SEPTEMBER 30, 2024

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**PREPARED DIRECT TESTIMONY  
OF  
BARRY A. BAKER**

**I. INTRODUCTION AND EXPERIENCE**

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**Q. Please state your name and business address.**

A. My name is Barry Alan Baker. My business address is 625 West Ridge Pike, Suite E-100, Conshohocken, Pennsylvania 19428.

**Q. By whom are you employed and in what capacity?**

A. I am employed by AECOM Technical Services Corporation (“AECOM”) as a Vice President and Eastern United States (U.S.) Regional Practice Lead for the Environmental Planning and Permitting Practice. I also serve as a Senior Project Manager and Technical Lead in the AECOM energy market sector.

**Q. What are your current responsibilities?**

A. In these roles, I am a Certified Project Manager and manage projects for siting and permitting of new transmission lines, power plants, and other facilities. I manage a Practice of approximately four hundred individuals responsible for environmental, cultural resources, and information technology services. Additionally, I serve as a Technical Lead for transmission and distribution services on the east coast of the U.S.

**Q. Please describe your educational background and professional experience.**

A. I received a Bachelor of Science with Honors degree in Environmental Science from the University of East Anglia in Norwich, England in 1996. A key focus was on the use of geographic information systems (“GIS”) and computer applications for environmental

1 problem solving. My additional continuing education relevant to my current  
2 position includes the following courses and programs:

- 3 • Approximately 50 project management classes necessary for formal  
4 certification.
- 5 • Creating and Integrating Data for Natural Resource Applications (ESRI).
- 6 • Geoprocessing with ArcGIS Desktop (ESRI).
- 7 • Spatial Hydrology Using ArcView (ESRI).
- 8 • Introduction to ArcIMS (ESRI).
- 9 • System Architecture Design for GIS (ESRI).

10 I have been employed by AECOM for the last nineteen years in the roles previously  
11 discussed. In these positions, I have been responsible for siting studies both as a  
12 Project Manager and as a technical lead for transmission line siting as well as new  
13 power development throughout the eastern region of the U.S., including:  
14 Pennsylvania, New Jersey, Maryland, New York, Connecticut, Ohio, Illinois,  
15 Virginia, Delaware, Massachusetts, Rhode Island, and Florida. I also manage the  
16 Eastern U.S. Environmental Planning & Permitting Practice where I am responsible  
17 for teams of biologists, ecologists, cultural resource specialists, and GIS analysts.  
18 Additionally, I am an AECOM Technical Lead designated for supporting and  
19 developing major transmission opportunities on the U.S. east coast. Prior to joining  
20 AECOM, I held GIS and environmental development positions for other  
21 environmental and government consultants as outlined in my resume, which is  
22 attached as Appendix A.

1 **Q. Have you testified previously before the Pennsylvania Public Utility**  
2 **Commission (“Commission”) or other regulatory agencies.**

3 A. Yes, I have provided siting testimony before the Commission, the New Jersey Board  
4 of Public Utilities, and the Maryland Public Service Commission, in a variety of  
5 proceedings, as further outlined in Appendix A.

6 **Q. On whose behalf are you providing this testimony?**

7 A. I am testifying in support of PECO’s application (“Application”) for approval to  
8 locate and construct the Brandon Shores Retirement Mitigation Project (“Project”).

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to explain why there is no reasonable better  
11 alternative than the existing route for the Project and therefore no full assessment of  
12 alternative routes considered for the Project. I also describe the process PECO used  
13 in determining the route for the Project by providing a summary of the social,  
14 environmental, and engineering considerations evaluated. Further, I will explain  
15 the public outreach efforts undertaken by PECO for the Project and the status of the  
16 associated Environmental Studies and Permitting efforts.

17 **Q. Are you responsible for the oversight and preparation of any of the**  
18 **attachments or exhibits filed with the Siting Application?**

19 Yes. I am sponsoring the following attachments:

- 20 • Attachment 10 – Environmental Setting;
- 21 • Attachment 14 – Proof of Public Notice;

- 1 • Attachment 17 – List of Agency and Permit Requirements;
- 2 • Attachment 18 – Topographical Overview Map;
- 3 • Attachment 19 – Aerial Overview Map; and
- 4 • Attachment 20 – Map of Project Segments.

5  
6 **II. LACK OF REASONABLE ALTERNATIVE ROUTES**

7 **Q. Please summarize the guidelines and factors typically used to identify and**  
8 **evaluate potential routes.**

9 A. The siting process typically uses a series of general siting guidelines and factors to  
10 direct the development, evaluation, and selection of alternative transmission line  
11 routes. For the Project, the following guidelines and factors were considered for  
12 route identification:

- 13 • Consider options to build within existing transmission rights-of-way.
- 14 • Consider parallel alignments along existing utility rights-of-way or other  
15 infrastructure, such as roadways and railroads.
- 16 • Maximize the distance from residential dwellings and local community  
17 buildings such as schools, hospitals, and other community facilities.
- 18 • Consider stakeholder input.
- 19 • Minimize visibility from federal and state listed scenic roadways and  
20 designated scenic resources.

- 1 • Minimize conflict with designated public resource lands, recreation  
2 lands, nature preserves, or other conservation areas.
- 3 • Minimize conflict with existing and approved future development and  
4 land uses.
- 5 • Minimize potential environmental and land use impacts by avoiding  
6 circuitous routes.
- 7 • Minimize new crossings of large wetland complexes, critical habitat, and  
8 other unique or distinct natural resources.
- 9 • Minimize habitat fragmentation and impacts on designated areas of  
10 biodiversity concern.
- 11 • Avoid crossing hazardous waste sites or sites with active mineral  
12 extraction activities.

13 **Q. Describe what routes were identified as potential options using the guidelines**  
14 **and factors to evaluate potential routes.**

15 A. Based on the guidelines and factors previously described and evaluation of the  
16 surrounding landscape, the siting team quickly identified that the only practicable  
17 transmission routes for the Project are those identified in this Application. In  
18 particular, the proposed routes take advantage of existing rights-of-way and utility  
19 corridors to the extent practicable and significantly minimize potential impacts to  
20 the environment, community, and individual landowners. Included with the  
21 Application are the environmental setting studies for the Project as Attachment 10.

1 **Q. Please elaborate why no detailed alternative routes were studied.**

2 A. Pennsylvania's requirements for transmission siting applications direct applicants  
3 to provide a "general description of reasonable alternative routes." To address this  
4 requirement, a high-level evaluation of the area was completed around the existing  
5 transmission line corridor to assess the potential of identifying alternative corridors  
6 for a new 500 kV line, which would require identification and development of a  
7 new 150-foot-wide ROW. Through this initial analysis, and without planning  
8 specific routes within each corridor, it was determined that any alternative route  
9 would create significant new adverse impacts that can be avoided using the planned  
10 route, which maximizes use of the existing ROW. In addition, due to acquisition of  
11 land rights for a significant amount of new easements, greater number of  
12 landowners, environmental constraints, distance, and engineering complexity any  
13 alternative route would be more expensive than the proposed Project.

14 The initial step in the evaluation process was defining a study area within  
15 which the potential corridors would extend. Modification to the transmission line  
16 network between the Peach Bottom North Substation, Cooper Substation, and the  
17 new substation to be constructed by a separate entity (Bramah Substation) will occur  
18 in a relatively condensed area and involve relatively direct alignments such that  
19 siting an alternative route would be impractical (the straight-line distance between  
20 Peach Bottom North Substation and Cooper Substation is 1.3 miles with  
21 connections to Bramah Substation located in-between). As such, the focus of the  
22 evaluation was on the section of PECO's existing transmission line corridor that

1 extends southwest from the Cooper Substation to the Pennsylvania/Maryland state  
2 line (approximately four miles).

3 To focus the evaluation, the study area boundary north of the existing  
4 transmission line corridor was defined by Muddy Creek, which extends generally  
5 west to east toward the Susquehanna River and is approximately 1.3 miles from the  
6 existing transmission line corridor. This waterway is located within a steep, forested  
7 valley that is generally 1,000 feet wide. Spanning this waterway would involve  
8 accessing the steep slopes to remove the trees within the valley and installing large  
9 transmission line structures on each side of the valley to account for the long span  
10 length over the waterway. Crossing Muddy Creek would also necessitate a second  
11 crossing of the waterway to reconnect to the existing transmission line corridor,  
12 which would duplicate the impacts. This boundary would limit any potential  
13 alternative to an approximate 5-mile length between Cooper Substation and the  
14 Pennsylvania/Maryland state line.

15 The area south of the existing transmission line corridor does not contain a  
16 natural boundary such as Muddy Creek. Land use in this area is predominantly  
17 agricultural or forested, with a dense swath of residential use extending for  
18 approximately 2.5 miles between Delta, Pennsylvania and Whiteford, Maryland,  
19 which is located approximately one mile south of the state line. As an additional  
20 complication, the Maryland portion of the existing transmission line corridor is  
21 extending to the southwest thereby making any alternative potentially longer. As  
22 such, the study area boundary south of the existing transmission line corridor was

1 defined as a line extending west to east that is approximately 1-mile south of the  
2 state line. This boundary provides opportunity for a potential alternative to avoid  
3 the residential areas while also possibly connecting back to the existing transmission  
4 line corridor near the state line and minimizing the length of the alternative. This  
5 boundary would limit any potential alternative to an approximate five to six-mile  
6 length between Cooper Substation and the Pennsylvania/Maryland state line.

7 The western boundary of the study area is where the existing transmission  
8 line corridor meets the Pennsylvania/Maryland state line which will limit the length  
9 of any potential alternative and minimize its extent within Maryland. The eastern  
10 boundary was defined by the Susquehanna River, which would be impractical to  
11 cross and is in the wrong direction.

12 Within this defined study area, the second step of the evaluation process  
13 considered a variety of constraints that were categorized as either social,  
14 environmental, or engineering items. Social constraints include residential  
15 development as well as socially sensitive places such as churches, cemeteries, and  
16 schools. Other social constraints include preserved or public areas such as  
17 conserved farms, preserved nature areas, and local parks. Environmental constraints  
18 focus on the natural resources that include streams and wetlands as well as forested  
19 areas. Some of these resources are part of state-identified natural areas that also  
20 provide habitat for plant and animal species of concern that are protected by state or  
21 federal agencies. Engineering constraints assess the landscape for obstacles to the  
22 development of the potential transmission line. Specific engineering constraints

1 include steep grades, wide stream valleys, and other large infrastructure that would  
2 need to be crossed such as railroads, highways, and other existing transmission lines.

3 This constraint information was used to assess the feasibility of identifying  
4 alternative route corridors within the defined study area. For purposes of discussion,  
5 this alternative corridor evaluation was considered in two sections, “north of the  
6 existing transmission lines” and “south of the existing transmission lines.” A review  
7 of these evaluations is included as part of Attachment 10 within the Application,  
8 which also includes a topographic overview map of the area surrounding the Project  
9 that illustrates the constraints evaluated. The following provides a summary of these  
10 alternative corridor evaluations.

11 The landscape north of the existing transmission lines includes pockets of  
12 residential development around the village of Bryansville and the adjacent extensive  
13 Susquehanna Trails neighborhood, deep forested stream valleys that generally flow  
14 north toward Muddy Creek, and large swaths of agricultural lands with many  
15 protected by agricultural conservation easements. These land uses and natural  
16 resources are potential constraints to the development of a new transmission line.  
17 Specific constraints identified in the area include:

18 *Social Constraints:*

- 19 • Susquehanna Trails Residential Development;
- 20 • The village of Bryansville which includes residential and commercial  
21 properties;
- 22 • Residential area around Delta (north) at RT 74 and RT 851 intersection;

- 1       •     Peach Bottom Park (Delta Sports Complex);
- 2       •     Calvary Chapel of Delta;
- 3       •     Several farms protected by agricultural conservation easements;
- 4       •     Two environmental conservation easements;
- 5             ○     150-acre Farm and Natural Lands Trust; and
- 6             ○     35-acre Farm and Natural Lands Trust.

7                     *Environmental Constraints:*

- 8       •     Natural Trout Reproducing watersheds – Fishing Creek and Scott Creek;
- 9       •     Larger, denser forested areas; and
- 10      •     Potential for rare, threatened or endangered species habitat or species of  
11             concern including two Natural Areas – Bryansville Station Seep and Fishing  
12             Creek-York County.

13                    *Engineering Constraints:*

- 14      •     Transcontinental pipeline and pumping facility near Bryansville;
- 15      •     Topography – steep and deep stream valleys/terrain;
- 16      •     Abandoned railroad corridor; and
- 17      •     Existing PECO transmission lines near the Cooper Substation.

18                    Compared to the existing PECO transmission line corridor, there are no  
19             better practicable alternative route options located north of this corridor. Any route  
20             in this area would require acquisition of new easements from minimally twenty  
21             different landowners. This acquisition would represent a brand new impact, which

1 could dramatically alter the landscape, affect their land use operations, and  
2 introduce new structures on their properties.

3 Unlike the existing corridor, which is generally linear, any new route in this  
4 area would be convoluted due to the need to avoid the areas of residential  
5 development, minimize impacts to natural resources, and address the challenging  
6 terrain.

7 A new route may need to cross over an existing PECO transmission line,  
8 which would result in several taller structures. The varying structure heights and  
9 numerous angle changes will increase the complexity of engineering and  
10 construction compared to the generally linear alignment of the existing corridor.

11 A new route would extend through at least four or five new forested areas  
12 that would result in potential acres of tree clearing compared to the minimal tree  
13 clearing anticipated for building the Project within the existing PECO corridor.  
14 Clearing these forests may lead to new impacts to federal or state protected animal  
15 or plant habitat areas.

16 A new route would need to span over at least four or five new stream valleys,  
17 some of which may be associated with the Natural Areas or environmentally  
18 conserved parcels noted in this area. Spanning these streams may also result in  
19 additional riparian impacts. Wetlands may also be located along the potential  
20 alignment that could be negatively affected and result in complex permitting and  
21 mitigation requirements.

1           The landscape south of the existing transmission lines also includes pockets  
2 of residential development around the town of Delta and the adjacent Delta Ridge  
3 neighborhood, several forested stream valleys that generally flow south toward the  
4 Susquehanna River or Deep Creek, and large swaths of agricultural lands with many  
5 protected by agricultural conservation easements. The town of Delta and the  
6 surrounding development define a barrier to any alternative route that would force  
7 the alignment further south and into the state of Maryland, where the route would  
8 encounter areas of dense residential development (towns of Cardiff and Whiteford)  
9 and large forested tracts. Specific constraints identified in the area include:

10           *Social Constraints:*

- 11           • Approximate 140 home Delta Ridge residential development;
- 12           • Residential development along surrounding roads including Route 74,  
13           Broad Street, Atom Road, and Pikes Peak Road;
- 14           • Peach Bottom Elementary School;
- 15           • Town of Delta Historic District;
- 16           • Whiteford House – Listed historic resource;
- 17           • Churches/cemeteries
  - 18           ○ Slateville Presbyterian Church and Cemetery;
  - 19           ○ Mount Zion Church and Cemetery;
  - 20           ○ Mount Nebo United Methodist Church and Cemetery;
  - 21           ○ Delta Christian Academy; and

- 1           •       Several farms protected by agricultural conservation easements.

2           *Environmental Constraints:*

- 3           •       Streams in Pennsylvania classified as Natural Trout Reproducing;
- 4           •       Streams in Maryland classified as Class III-P (Protection of Nontidal Cold
- 5           Water Aquatic Life – e.g., Deep Creek) provide protection for the growth
- 6           and propagation of trout species;
- 7           •       Dense forested areas – all forested areas are protected by state of Maryland;
- 8           and
- 9           •       Potential for rare, threatened or endangered species habitat or species of
- 10          concern.

11          *Engineering Constraints:*

- 12          •       To the extent practicable, avoid Calpine Power Plant and crossing of
- 13          Calpine Corporation (“Calpine”) transmission lines;
- 14          •       Slate quarries; and
- 15          •       Abandoned railroad corridor.

16                Compared to the existing PECO transmission line corridor, there are no

17          better practicable alternative route options located south of this corridor. Any route

18          in this area would need to extend into Maryland to bypass the Calpine Power Plant

19          and residential development around Delta, Pennsylvania and Cardiff, Maryland.

20          This would introduce the need to coordinate with the Maryland Public Service

1 Commission for approval to site a line in Maryland, which would involve additional  
2 costs and delays to the Project.

3 Any route in this area would require acquisition of new easements from  
4 minimally ten different landowners in Pennsylvania and minimally fifteen  
5 landowners in Maryland. This acquisition would represent a brand new impact,  
6 which could dramatically alter the landscape, affect their land use operations, and  
7 introduce new structures on their properties.

8 The new route may also extend near several local churches and other  
9 culturally sensitive sites that may be considered a visual effect and further increase  
10 community opposition.

11 Unlike the existing corridor, which is generally linear, any new route in this  
12 area would be convoluted due to the need to avoid the density of residential  
13 development and minimize impacts to natural resources. The convoluted alignment  
14 will involve numerous angle changes which will increase the complexity of  
15 engineering and construction compared to the generally linear alignment of the  
16 existing corridor.

17 Although a southern route option may be able to avoid some impacts to  
18 forested areas in Pennsylvania, there are larger forested tracts in Maryland that  
19 would need to be crossed. Maryland has strict regulations on forest clearing that  
20 requires mitigation for all trees affected. Wetlands may be located along the  
21 potential alignment that could be negatively affected and result in complex  
22 permitting and mitigation requirements in two different states.

1           As a result of this high-level, assessment, I reached the following conclusions  
2 regarding PECO’s proposed route for the Project. Those conclusions include use of  
3 the existing transmission corridor:

- 4           • Reduces the number of new properties introduced for transmission line  
5 construction;
- 6           • Avoids major residential and commercial areas;
- 7           • Reduces potential impacts to environmentally sensitive areas;
- 8           • Reduces the need for new impacts to agricultural easements and conserved  
9 lands;
- 10          • Maintains the approximate same straight-line distance between churches,  
11 parks, and other community interests; and
- 12          • Reduces the risk of impacts to gas pipelines, the Calpine Power Plant, and  
13 other utility infrastructure.

14           The proposed routes of the Project will accomplish the goals set forth by PJM  
15 in selecting PECO for this Project with as minimal impacts as reasonably possible.  
16 Any alternative route would create significantly more impacts and would not  
17 provide any material benefits. In contrast, the proposed routes primarily utilize  
18 pathways that have largely already been developed by PECO and/or other utilities  
19 and generating companies for transmission purposes and thus the majority of the  
20 Project will be sited within existing rights-of-way and fee-owned utility corridors.<sup>1</sup>

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<sup>1</sup> A portion of the Project will traverse through land for which a neighboring generator, Calpine, owns an easement for its interconnection facilities. A short segment of the existing 500 kV 5034 Line will be relocated, and PECO

1 Because the proposed routes are clearly the most reasonable transmission routes to  
2 use for the Project, and there are no perceivable advantages to using an alternative  
3 route, PECO did not conduct a full study of alternative routes. As such, to the extent  
4 necessary, PECO is requesting a waiver of the Commission's requirement to  
5 provide a full analysis of alternative routes with an application as described within  
6 the pleading of the Application.

### 8 III. ENVIRONMENTAL STUDIES

9 **Q. Please provide information on the environmental studies that have been**  
10 **completed for the Proposed Routes.**

11 A. A delineation of the streams and wetlands within the Project corridor was completed  
12 in March and April 2024. This survey noted the presence of twenty-four perennial  
13 or intermittent streams, most of which are classified by the Pennsylvania Fish and  
14 Boat Commission ("PFBC") as wild trout streams. The survey also identified  
15 twenty-one wetlands that were mostly classified as palustrine emergent based on the  
16 dominant vegetation, but also included a few palustrine scrub-shrub and palustrine  
17 forested wetlands. Due to their location adjacent to the wild trout streams, these  
18 wetlands are considered Exceptional Value due to the ecological functions they  
19 serve in maintaining the water quality of the adjoining streams. Wetlands that are

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will acquire land rights for less than one mile of Calpine's existing utility corridor to allow for transmission lines in the Project to interconnect to the Bramah Substation.

1 deemed Exceptional Value are provided additional protection by the state regulatory  
2 agency, the Pennsylvania Department of Environmental Protection.

3 This stream and wetland information has been provided to the engineering  
4 group who have designed the new transmission line structures to be located in areas  
5 that minimize impacts to stream floodplains and floodways as well as avoid any  
6 direct wetland impacts.

7 A Pennsylvania Natural Diversity Inventory (“PNDI”) review of the  
8 proposed route alignment was conducted in March 2024. The PNDI review noted  
9 the potential presence of threatened and endangered (“T&E”) species associated  
10 with the Pennsylvania Department of Conservation and Natural Resources  
11 (“DCNR”) (plants); the PFBC (mussels, fish, skinks), and the U.S. Fish and Wildlife  
12 Service (“USFWS) (bog turtles, bats). Further coordination with DCNR has  
13 identified a list of T&E plant species for which botanical surveys are being  
14 conducted. These surveys are typically conducted during the flowering of the  
15 species, which could range seasonally from spring through fall. Coordination with  
16 PFBC noted the potential presence of a skink species for which habitat surveys are  
17 currently being conducted. The delineated wetlands have been assessed by qualified  
18 bog turtle surveyors for potential habitat, which was noted at several of the wetlands.  
19 Presence/absence surveys for these turtles has been completed with no bog turtle  
20 being found. A comprehensive findings report has been submitted to USFWS.

21 Once the plant and skink surveys are completed, an assessment will be  
22 conducted to determine if the Project will have any impact on these protected

1 species. These assessments will be conducted after engineering has identified the  
2 location of the proposed pole structures and PECO has confirmed the construction  
3 access roads require for the Project, which are currently in progress. Information  
4 on the delineated streams and wetlands will be incorporated into the engineering of  
5 the proposed pole locations and the defining of construction access roads.

#### 7 **IV. PUBLIC OUTREACH**

8 **Q. Please summarize PECO’s public outreach activities for the Project.**

9 A. On June 25, 2024, PECO held a public information meeting (“Open House”) at  
10 Delta Peach Bottom Elementary School, 1081 Atom Road in Delta, Pennsylvania.  
11 PECO representatives presented details of the Project and answered questions from  
12 the public. Landowners and other members of the public were provided the  
13 opportunity to comment on the Project. PECO also displayed large display boards  
14 with maps of the Project and examples of the structures that PECO intends to  
15 construct. Approximately 35 individuals attended the open house and had an  
16 opportunity to discuss their questions with PECO representatives.

17 PECO also maintains a website for the Project to reflect project milestones  
18 and other information.<sup>2</sup> The website provides an overview of the Project, including  
19 a high-level description of the work to be performed, the purpose of the Project, and

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<sup>2</sup> The website is [www.peco.com/pbproject](http://www.peco.com/pbproject).

1 a timeline for construction. The website also includes a contact email and phone  
2 number for the public to send PECO questions.

3 **Q. Was the public notified of the open houses?**

4 A. PECO mailed letters on June 5, 2024, to approximately 235 local landowners within  
5 the Project's necessary rights-of-way and within one-fourth of a mile of the rights-  
6 of-way, including all three of the directly impacted landowners. These letters  
7 invited landowners of the Open House and provided the location, date, and time of  
8 the meeting. In addition, the letters were accompanied by a fact sheet with relevant  
9 facts about the Project. Included as Attachment 13 is a copy of the invitation letter  
10 and accompany fact sheet.

11 PECO also informed the general public of the Open House by placing  
12 advertisements in the *York Daily Record*, a large local newspaper. The newspaper  
13 is circulated in York County and surrounding areas, including Delta, Pennsylvania.  
14 The advertisements were printed in the general section of the paper and appeared  
15 on Thursday, June 20, 2024, to an audience of approximately 37,000 people, and on  
16 Sunday, June 23, 2024, of approximately 62,000 people. The newspaper's largest  
17 circulation of the week is on Sundays. A copy of the proof of publication for the  
18 advertisement is included in Attachment 14.

19 In addition, PECO provided invitation letters to the Open House to the Peach  
20 Bottom Township and Delta Borough so that they could publicly post the

1 information on each local government's respective public website.<sup>3</sup> PECO also  
2 provided an invitation letter and accompanying fact sheet by email on June 5, 2024,  
3 to the Pennsylvania Office of Consumer Advocate.

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**V. CONCLUSION**

6 **Q. Does this conclude your testimony?**

7 **A. Yes.**

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<sup>3</sup> The websites are <https://www.peachbottomtownship.org> and <https://www.deltaborough.us/home>.

## VERIFICATION

I, Barry A. Baker, hereby state that the facts set forth in my Testimony are true and correct to the best of my knowledge, information, and belief. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATE: September 30, 2024

Barry A. Baker  
BARRY A. BAKER

# Barry A. Baker

## Technical Expert

**Education**

BS, Environmental Science (Honors), University of East Anglia Norwich, England

**Location**

Philadelphia

**Years of experience**

28

**Years with AECOM**

18

**Registration/certification**

Certified Project Manager  
Certified Project Approver  
Approved Lead Verifier –  
Environmental Planning & Permitting

**Affiliations**

None

Mr. Baker has over 28 years of environmental experience and three additional years' experience in construction and laboratory work. Mr. Baker is an AECOM Certified Project Manager and manages AECOM's Eastern U.S. Environmental Planning and Permitting Practice. He has managed projects for the siting and permitting of renewable and fossil facilities, energy lines, authors sections of state utility commission applications, and provides testimony support for utility commission hearings. Mr. Baker's facility siting work has involved projects for power plant siting (solar, natural gas, coal gasification, and hydro), including natural gas pipeline and transmission line route identification; fatal flaw/critical issues studies; and permitting for new plants; with work conducted in PA, NY, NJ, MD, DE, OH, MA, and CT. His energy line work has included siting and permitting of electric transmission lines, offshore infrastructure, gas pipelines, substations, and converter stations, involving energy projects in PA, NY, NJ, MD, VA, WV, DE, OH, RI, IL, and FL. Additionally Mr. Baker has provided direct testimony support for applications with the Pennsylvania Public Utility Commission, Maryland Public Service Commission, New Jersey Board of Public Utilities, along with providing technical support for applications in Virginia and Connecticut.

**Select project experience:**

**Technical Siting Lead, Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3**

**Projects, Central PA, PECO:** Mr. Baker serves as AECOM's Technical Siting Lead in supporting PECO on their Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects (Projects). These Projects consist of an approximate 5.5 mile electric overhead transmission line construction project from PECO's Peach Bottom North Substation to the Pennsylvania/Maryland border. The Projects will include installation of new steel monopoles, new conductor and other electrical upgrades and removing the existing lattice towers and monopoles and electrical equipment, as part of the overall transmission rebuild. AECOM is supporting PECO on the Projects by providing siting support related to environmental assessments; field reviews/walkdowns with the PECO team; attendance and engagement at the public Open House; development of the Pennsylvania Public Utility Commission (PUC) filing and testimony; and associated permitting efforts.

**AECOM Project Manager, East Germantown 115 kV Line Project, Transmission Siting and PUC Filings, and Permitting Central PA, FirstEnergy:**

Project Manager and technical siting lead for a new transmission line in central PA. Siting methodology incorporated GIS technology, quantitative statistical evaluation, qualitative review, and expert judgment into the decision-making process for the selection of a preferred alternative route. AECOM also completed the full PUC filing development, reporting, and is currently supporting testimony before the PUC. Additional tasks included public outreach presentations and environmental studies including wetland delineations, PHMC consultations, and habitat studies. AECOM is currently supporting the development of Permit applications including Chapter 102 NPDES Individual Permit applications and Chapter 105 Joint Permit Application.

**Siting and Permitting Technical Lead FERC 1000 Transmission Line Siting, Substation Review, & Permit Analysis, Multiple Counties, PA, WV, MD, and VA, Confidential Client:**

Technical siting and permitting lead for development and analysis of transmission lines and substation upgrades in multiple states and counties for FERC 1000 project support of a potential 500-kV transmission line. Work included development of multiple alternative route options and selection of likely preferred alternatives. Following development of alternatives,

AECOM completed assessments of potential environmental impacts for each alternative and developed the associated permit requirements.

**AECOM Project Manager, Bedford North-Central City West 115 kV Line Project, Transmission Siting and PUC Filings, and Permitting Central PA, FirstEnergy:** Project Manager and technical siting lead for new transmission line in central PA. Siting methodology incorporated GIS technology, quantitative statistical evaluation, qualitative review, and expert judgment into the decision-making process for the selection of a preferred alternative route. AECOM also completed the full PUC filing development, reporting, and testimony support before the PUC. Additional tasks included public outreach presentations and environmental studies including wetland delineations, PHMC consultations, and habitat studies. Permit applications include Chapter 102 NPDES Individual Permit applications and Chapter 105 Joint Permit Application.

**Technical Task Manager, IEC Project - Routing Studies for two new ~ 30-miles of 230 kV Transmission Lines, Multiple Counties in MD & PA, AEP/Transource:** Technical task lead for the development of two new 230 kV transmission lines located in MD and PA. Technical work included defining alternatives, evaluating and comparing the impacts, evaluating zoning considerations, and selecting a preferred alternative for each project. Additional work included Public Open House support and coordination with agencies in both MD and PA such, as the MD PPRP, MD Joint Evaluation Meetings, and PADEP. Mr. Baker also provided Expert Witness services and testimony support for both the MD and PA filings at the MD PSC and PA PUC.

**AECOM Project Manager, PPL Northeast/Pocono ~ 60-miles of new 230kV Transmission Siting & PUC Filings; Peckville-Varden Siting & PUC Filings; and Paupack Substation Connection Siting & PUC Filings; Environmental and Cultural Resource Studies; and Chapter 102 and 105 Permitting - Multiple Counties, PA, PPL:** Project Manager and technical siting and permitting lead for ~ 60-miles of new 230kV transmission lines and substations, along with rebuild of 69kV lines and connectors in northeast PA. Siting methodology incorporated an adapted EPRI-GTC transmission siting process using an AECOM built GIS model application to assist with stream-lining the siting process. Work involved data acquisition, mapping, and environmental analysis; Letter of Notification and Full Siting Application support for PUC filings, along with testimony support for the PUC filings. Additional tasks included public outreach presentations and environmental coordination with Agencies for PNDI review and PHMC consultation. Permitting efforts, included wetland delineations, T&E species reviews e.g., Bog Turtle, Indiana Bat, rattlesnakes, and multiple botanical studies; agency coordination; Chapter 102 NPDES Individual Permit applications and Chapter 105 Joint Permit Applications.

**AECOM Program Manager, PPL Northern Lehigh Reliability Program:** Transmission Line Siting & PUC Filings; Environmental and Cultural Resource Studies; and Chapter 102 and 105 Permitting - Lehigh County, PA, PPL,: AECOM Siting & Environmental Program Manager for rebuild of 500 kV transmission line, substation upgrades, and multiple 69 kV to 138 kV upgrade projects in Lehigh County PA. Work involved data acquisition, mapping, and environmental analysis; Letter of Notification and support for PUC filings. Additional tasks included environmental coordination with Agencies for PNDI review and PHMC consultation. Permitting efforts, included wetland delineations, T&E species reviews e.g., Bog Turtle, eastern spade footed toad, and multiple botanical studies; agency coordination; Chapter 102 NPDES Individual Permit applications and Chapter 105 Permit applications.

**Project Manager, Jackson – Lake Naomi 138 kV Taps Transmission Siting and PUC Filings, and Permitting Monroe County, PA, PPL:** Project Manager and technical siting lead for new transmission line in northeast PA. Siting methodology incorporated an adapted EPRI-GTC transmission siting process using an AECOM built GIS model application to assist with stream-lining the siting process. Work involves data acquisition, mapping, and analysis; full PUC filing development, reporting, and testimony support before the PUC. Additional tasks included public outreach presentations and environmental studies including wetland delineations, PHMC consultations, and habitat studies. Permit applications include Chapter 102 NPDES Individual Permit applications and Chapter 105 General Permit applications.

**Project & Technical Task Manager, Routing and Engineering Constraints Review – Near-shore connection NJ coast, NJ Orsted:** Project manager and technical siting lead for the development of high voltage offshore and onshore cable/overhead line routing, shore landings and onshore substations to accommodate up to 1000 MW of offshore generation development. Onshore HV cable installation methodologies

review includes routing, trench design, utility analysis, and constructability concerns. Grid Reinforcement Unit Costs and Risks review included initial analysis of existing infrastructure that may require upgrades as part of the project and the associated impacts for these reinforcements. Additional tasks included preliminary and detailed design of over twenty horizontal directional drills (HDDs) to be located at multiple locations for establishing onshore connection points.

**AECOM Program Manager, PPL Greater Scranton Reliability Project:** Transmission Siting & PUC Filings; Environmental and Cultural Resource Studies; and Chapter 102 and 105 Permitting - Multiple Counties, PA, PPL.; AECOM Siting & Environmental Program Manager for new 230kV transmission lines and substations, along with rebuild of 69kV lines and connectors in northeast PA. Work involved data acquisition, mapping, and environmental analysis; Letter of Notification and support for PUC filings. Additional tasks included environmental coordination with Agencies for PNDI review and PHMC consultation. Permitting efforts, included wetland delineations, T&E species reviews e.g., Bats, rattlesnakes, and multiple botanical studies; agency coordination; Chapter 102 NPDES General Permit applications and Chapter 105 Permit applications.

**Technical Task Manager, Routing and Engineering Constraints Review - Transmission Line Crossing Baltimore Harbor, MD BGE:** Technical task lead to evaluate and compare the impacts, zoning considerations, and permitting scenarios for underground or overhead transmission line route alternatives in MD. The evaluation was completed within the context of the best engineering and cost alternatives for underwater crossing of harbor compared to overhead crossing options. Additionally, AECOM identified, evaluated, and developed a matrix that compared the best engineering and cost scenarios that may be required for each of the alternatives.

**Project Manager, Transmission Siting and Permitting of Ten Transmission Lines, and BPU Support, Southern NJ, Atlantic City Electric:** Manager of permitting team and technical siting manager for the rebuild or development of ten transmission lines within southern New Jersey. Siting analysis included development and comparison of alternative alignments for both overhead and underground options. Permitting efforts, include wetland delineations, T&E species reviews and multiple botanical studies; agency coordination in Pinelands, NJDEP, Army Corps and the associated permit applications.

**Permitting Project Manager and Technical Task Manager, – 30-inch Gas Pipeline Transmission Siting, Pinelands Commission & BPU Filings New Jersey Natural Gas Southern Reliability Link Project:** Overall manager of permitting team and technical siting manager for the development of a new 28-mile 30-inch gas pipeline in southern New Jersey. Siting analysis includes development and comparison of alternative alignments for the line. Permitting efforts, include wetland delineations, T&E species reviews and multiple botanical studies; agency coordination with the Pinelands and NJDEP, and the associated permit applications.

**Project Manager, Transmission Line Conceptual Engineering Studies - Siting and Costing Study, IL, PJM Interconnection:** Project Manager and Technical Siting Lead for two competing transmission line projects in Illinois. The conceptual studies evaluated the feasibility of the projects and addressed routing and siting, real estate acquisition, engineering, construction, and potential environmental impacts related to developing the proposed transmission line and upgrading the existing substations.

**PECO Statement No. 4:  
Testimony of Drew Davis**

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**APPLICATION OF PECO ENERGY COMPANY FILED PURSUANT  
TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL  
OF THE SITING AND CONSTRUCTION OF THE BRANDON  
SHORES RETIREMENT MITIGATION PROJECT IN PEACH  
BOTTOM TOWNSHIP, YORK COUNTY, PENNSYLVANIA AND  
PETITION FOR WAIVER OF 52 PA. CODE § 57.72(C)(10)**

**DOCKET NO. A-2024-\_\_\_**

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**DIRECT TESTIMONY**

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**WITNESS: DREW DAVIS**

**SUBJECTS: DESIGN AND SAFETY FEATURES OF THE  
PROJECT; PECO'S DESIGN, MITIGATION,  
AND MAINTENANCE POLICIES; AND  
PECO'S ELECTROMAGNETIC FIELD  
POLICY**

**DATED: SEPTEMBER 30, 2024**

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**PREPARED DIRECT TESTIMONY  
OF  
DREW DAVIS**

**I. INTRODUCTION AND EXPERIENCE**

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**Q. Please state your name and business address.**

A. My name is Drew Davis. My business address is PECO Energy Company, 2301 Market Street, Philadelphia, PA 19103.

**Q. By whom are you employed and in what capacity?**

A. I am employed by PECO Energy Company (“PECO” or “Company”) as the Vice President of Transmission and Substations.

**Q. What are your current responsibilities?**

A. I am responsible for design, engineering, construction, maintenance, and operation of the PECO bulk power transmission system and its fleet of Substations.

**Q. Please describe your educational background and professional experience.**

A. I graduated from Wilkes University in 1991 with a Bachelor of Science Degree in Electrical Engineering and from St. Joseph’s University in 2001 with a Master of Business Administration degree. I joined PECO in 2008, and prior to my current role, I was employed by PECO as a Director of Project Management, Director of Distribution System Operations, Director of Transmission and Substations, and Senior Manager of Substation Engineering. In addition, for 20 years, I maintained an active license as a professional engineer in Pennsylvania.

1 **Q. Have you testified previously before the Pennsylvania Public Utility**  
2 **Commission (“Commission”) or other regulatory agencies?**

3 A. No.

4 **Q. On whose behalf are you providing this testimony?**

5 A. I am testifying in support of the PECO’s application (“Application”) for approval  
6 to locate and construct the Brandon Shores Retirement Mitigation Project  
7 (“Project”).

8 **Q. What is the purpose of your testimony?**

9 A. My testimony covers three topics. First, I will explain the major design features of  
10 the transmission lines associated with the Project. Second, I will explain the safety  
11 features incorporated into the design. Third, I will describe PECO’s policies on  
12 measures to mitigate the environmental, landowner, and similar impacts of  
13 transmission lines and also provide an overview of PECO’s electromagnetic field  
14 (“EMF”) policy and practices.

15 **Q. Are you responsible for the oversight and preparation of any of the**  
16 **attachments or exhibits filed with the Siting Application?**

17 A. Yes. I supervised the preparation of the following attachments:

- 18 • Attachment 5 – Design Criteria and Safety Practices;
- 19 • Attachment 8 – Typical Pole Structure Exhibits; and
- 20 • Attachment 9 – EMF Calculations Graph.

21

## II. DESIGN AND SAFETY FOR THE PROJECT

1  
2 **Q. Has a general description of the Project been provided?**

3 A. Yes, a description of the Project has been provided in the Application. In addition,  
4 Mr. William Patterer, PECO Statement No. 1, provides a general description of the  
5 Project and Ms. Amber Thomas, PECO Statement No. 2, provides a description of  
6 the need for the Project. In PECO Statement No. 3, Barry A. Baker provides an  
7 explanation of PECO's siting and alternative route considerations for the Project.  
8 My testimony will provide engineering, construction, and design information for  
9 the Project.

10 **Q. Please describe the general design configuration planned for the Project.**

11 A. The Project as currently configured includes expanding the Peach Bottom North  
12 substation, including constructing a new control house and installing a new rigid  
13 bus, two new breakers, and new motor operated disconnected switches, coupling  
14 capacitor voltage transformers, and lightning arrestors. The Project also involves  
15 five transmission lines described below.

- 16 • PECO will construct a new approximately 5.5 miles 500 kV 5040 Line from the  
17 Pennsylvania and Maryland border to the Peach Bottom North substation. To  
18 construct approximately 4.0 miles of this transmission line, an existing 230 kV  
19 220-93 Line supported by steel lattice towers with conductors arranged  
20 horizontally will be removed and replaced with tubular steel monopole  
21 structures with conductors arranged vertically and operated at 500 kV. The  
22 remainder of the line will also be constructed with new tubular steel monopole

1 structures. The height of the new structures will be approximately 150 to 200  
2 feet. The new 5040 Line will consist of 39 new structures with an average  
3 distance between supporting structures of 741 feet and will use 9 x 959.6 kcmil  
4 22/7 ACSS/TW HS Type 16 conductors.

- 5 • The existing 5012 Line from the Pennsylvania and Maryland border to Peach  
6 Bottom South will be connected to the new Bramah substation and as a result  
7 the line will be segmented into two lines. The section from the Bramah  
8 substation to Peach Bottom South will retain the 5012 Line designation. The  
9 segment between the Pennsylvania and Maryland border and the Bramah  
10 substation will be designated as the 500 kV 5042 Line. The two line segments  
11 are as follows:

- 12 ○ PECO will construct a new approximately 0.44 mile 500 kV 5042 Line tie-  
13 in to connect the existing Line 5012 from the Pennsylvania and Maryland  
14 border to the Bramah substation which will be designated as the 500 kV 5042  
15 Line. The new line will begin at approximately the existing structure 2-3 of  
16 the 5012 Line and end at the Bramah substation. Existing 500 kV steel lattice  
17 towers with conductors arranged horizontally within PECO's existing right-  
18 of-way will be replaced. The new line section will be constructed with new  
19 steel tubular monopole structures with conductors arranged vertically. The  
20 height of the new structures will be approximately 150 to 200 feet. The new  
21 portion of the 5042 Line will consist of four new structures with an average

1 distance between supporting structures of 719 feet and will use 9 x 959.6  
2 kcmil 22/7 ACSS/TW HS Type 16 conductors.

- 3 ○ PECO will construct a new 500 kV 5012 Line section of approximately 0.43  
4 mile in new right-of-way which will connect the existing 5012 Line from the  
5 Bramah substation to the Peach Bottom South substation. The new line  
6 section will be constructed with new steel tubular H-frame structures with  
7 conductors in a horizontal configuration, a single steel three-pole dead end  
8 structures with conductors in horizontal configuration, and one single steel  
9 tubular monopole with conductors arranged vertically. The height of the new  
10 structures will be 80 to 185 feet. The remainder of the existing line going to  
11 Peach Bottom South will use existing steel lattice towers with conductors  
12 arranged horizontally. The new portion of the 5012 Line will consist of four  
13 new structures with an average distance between supporting structures of 624  
14 feet and will use 9 x 959.6 kcmil 22/7 ACSS/TW HS Type 16 conductors.

- 15 ● Approximately 1.1 mile of the existing 15.03 miles 230 kV 220-08 Line will be  
16 rerouted around the Peach Bottom North substation to accommodate the Peach  
17 Bottom North substation expansion. Approximately 0.1 mile of this line will be  
18 within PECO's existing right-of-way and use existing steel lattice towers with  
19 conductors arranged horizontally. Within new right-of-way that PECO will  
20 obtain from neighboring generator Constellation Energy Corporation, the line  
21 will be constructed with new steel tubular H-frame structures with conductors in  
22 a horizontal configuration, and a steel three-pole dead end structure with

1 conductors in horizontal configuration. The height of the new structures will be  
2 approximately 70 to 110 feet. The new portion of the 220-08 Line will consist  
3 of nine new structures with an average distance between supporting structures  
4 of 771 feet and will use 3 x 795 kcmil 30/19 ACSR conductors.

- 5 • PECO will construct a new approximately 0.47 mile 230 kV 220-93 Line from  
6 Cooper substation to Bramah substation. To construct this transmission line, the  
7 existing 500 kV 5012 Line supported by steel lattice towers with conductors  
8 arranged horizontally will be removed and replaced with tubular steel monopole  
9 structures with conductors arranged vertically and in a delta configuration  
10 operated at 230 kV. The height of the new structures will be approximately 75  
11 to 135 feet. The new 220-93 Line will consist of six new structures with an  
12 average distance between supporting structures of 442 feet and will use 3 x 959.6  
13 kcmil 22/7 ACSS/TW HS Type 16 conductors.

14 For all of the transmission lines described above, in each instance where  
15 PECO will replace existing 230 kV and 500 kV structures with new structures,  
16 PECO will not reuse existing conductors because that equipment is over 50 years  
17 old and were designed for a lesser load projected around the late 1960s. In addition,  
18 for all spans with new conductors in the Project the shield wire will vary from line  
19 to line specific to the specifications of the lines' structures. The new shield wires  
20 will be 7 No 5 Alumoweld, 19 No 9 Alumoweld, 203.2 kcmil 16/19 ACSR, DNO-  
21 8338 OPGW, and DNO-12650 OPGW. Further information about the engineering  
22 and design criteria for the Project are provided in Attachment 5 of the Application.

1 PECO is also providing information in Attachment 8 of the Application  
2 demonstrating typical pole structures to be constructed as part of the Project.

3 **Q. What is the National Electrical Safety Code?**

4 A. The National Electrical Safety Code (“NESC”) is a United States standard for the  
5 safe installation, operation, and maintenance of the electric power system. It is a set  
6 of rules designed to safeguard people during the installation, operation, and  
7 maintenance of electric installations. The NESC contains the basic provisions  
8 considered necessary for the safety of employees and the public. Although it is not  
9 intended as a design specification, its provisions establish minimum design  
10 requirements.

11 **Q. Will the Project comply with the NESC standards?**

12 A. The Project will meet or exceed the requirements of the latest revision of the NESC.

13 **Q. Does the Project meet PECO’s existing engineering and design specifications?**

14 A. Yes. The structures of the Project are designed to meet PECO’s applicable and  
15 existing engineering and design criteria for 230 kV and 500 kV transmission lines.

16 **Q. Please describe how the proposed transmission structures will be situated  
17 within the existing and newly acquired rights-of-way.**

18 A. PECO considers a multitude of factors to evaluate transmission design criteria and  
19 the location of structures in relation to the edges of rights-of-way. Such parameters  
20 include structure types, conductor sizes, stringing tension, conductor motion, line  
21 voltage, and NESC defined weather conditions. The Project’s transmission lines

1 are designed to ensure that all applicable NESC conductor clearances to the edges  
2 of the rights-of-way will be satisfied.

3 **Q. Please explain the safety features that will be incorporated into the design of**  
4 **the Project.**

5 A. Safety is of highest importance during all aspects of the Project. The Project is  
6 designed and will be constructed to meet or exceed all applicable NESC  
7 requirements. In addition to the safety features incorporated by designing the  
8 Project in accordance with the NESC, PECO will implement additional and more  
9 stringent design standards applicable to all new structures. For example, PECO's  
10 design loading conditions for structures, wires, and clearances exceed NESC  
11 requirements. PECO will also employ relay protection systems to automatically de-  
12 energize transmission lines in the unlikely event of a failure on a line, such as may  
13 occur if a line contacts the ground or a grounded object. In particular, PECO will  
14 utilize high speed microprocessors relays in the event an abnormality on one of the  
15 Project's transmission lines is detected. Further, the transmission lines are designed  
16 for conductor-to-conductor clearances and conductor-to-ground clearances, which  
17 support maintenance and inspection activities.

18 PECO will also utilize multiple safety mitigation measures for all steel  
19 structures to discourage the public from climbing on and/or tampering with the  
20 structures. For example, PECO will install prominent signage on the structure to  
21 warn about potential hazards and will construct towers with climbing systems that  
22 do not begin at ground level.

1           The design will utilize a 3-D modelling software program with current light  
2           detection and ranging (also known as “LiDAR”) survey data. LiDAR is a laser-  
3           based survey system mounted on a helicopter that creates a 3-D model of an existing  
4           area complete with topography, vegetation and all the features present such as roads,  
5           bridges, sheds, rivers, vehicles, poles, other transmission lines, etc. The 3-D  
6           program allows PECO to perform clearance checks of the transmission line to the  
7           LiDAR data to verify compliance with NESC requirements and North American  
8           Electric Reliability Corporation (“NERC”) reliability standards. In addition, after  
9           the completion of the project PECO will perform a second LiDAR survey to verify  
10          that the new lines were correctly built and have all required clearances. PECO will  
11          confirm clearances to features within the rights-of-way and to the edge of rights-of-  
12          way to ensure the clearances meet or exceed the requirements of the NESC and  
13          NERC reliability standard FAC-008. In addition, PECO will check clearances to  
14          vegetation to ensure the clearances meet or exceed the requirements of NERC  
15          reliability standard FAC-003.

16           PECO has substantial experience with constructing transmission facilities  
17          and incorporating safety measures throughout construction processes. All  
18          construction for the Project will adhere to standard construction practices and  
19          compliance with Occupational Safety and Health Administration (“OSHA”) Rules  
20          and Regulations. Further, PECO has personnel safety rules to promote employee  
21          safety. Work procedures and tooling have been developed to allow work to be  
22          performed in a safe manner on energized and de-energized facilities. Personnel are

1 furnished with appropriate Personal Protective Equipment for the performance of  
2 construction or maintenance activities in a safe manner. PECO has adopted a 0°  
3 shielding angle for the static wire on all new structures proposed for the Project.  
4 This will put the static wire directly over the top of the phase conductors and  
5 minimize faults due to lightning strikes. By minimizing lightning faults, which in  
6 turn minimizes damage to PECO structures, insulators, and conductors, this safety  
7 feature will reduce the chance of equipment failures that could impact the public.

8 Further information about the safety considerations incorporated into the  
9 Project are provided in Attachment 5 of the Application.

### 11 **III. PECO'S DESIGN, MITIGATION, AND MAINTENANCE POLICIES**

#### 12 **Q. Please describe the construction process for the Project.**

13 A. The Project will be constructed pursuant to PECO's standard construction practices  
14 to perform all work safely and in compliance with OSHA Rules and Regulations.  
15 PECO's construction practices also call for keeping environmental impacts to a  
16 minimum. Regular construction activities for the Project will include the  
17 installation and maintenance of soil erosion and sediment control measures,  
18 construction of temporary access roads, right-of-way clearing, insulation of  
19 foundations, structures and wire, and rehabilitation of all disturbed areas due to the  
20 construction process.

1 **Q. Please describe how PECO will oversee and monitor the construction cost and**  
2 **progress of the Project.**

3 A. PECO will assign a project manager to monitor and oversee the project construction  
4 activities and cost. The project manager is responsible for overseeing all aspects of  
5 the Project, including the planning and execution of the Project work from the  
6 preliminary designs through to energization. The project manager will also be  
7 responsible for developing work plans and schedules based upon the Project  
8 requirements, including environmental and construction permitting as well as any  
9 specific right-of-way requirements.

10 **Q. What is the estimated cost to site and construct the Project?**

11 A. The cost of the Project is currently estimated to be approximately \$118 million.  
12 These current estimates are subject to change as the Project is further developed.

13 **Q. What is the approximate time period for Project construction?**

14 A. Pending approval of the Project by the Commission, construction is scheduled to  
15 commence in March 2026 and end in December 2028.

16 **Q. Please describe PECO's goal to minimize the impacts of the Project to**  
17 **landowners and the environment.**

18 A. PECO aims to achieve a reasonable balance of many competing factors, including  
19 constructing efficient and reliable transmission lines and related equipment,  
20 minimizing costs, minimizing impacts on the environment, minimizing impacts to  
21 existing landowners and land use, and avoiding population centers, among other  
22 factors. While PECO works towards these goals, it may not always be possible to

1 fully achieve each individual objective, particularly where some goals may be  
2 mutually exclusive. For example, PECO cannot site transmission lines without  
3 affecting at least some landowners. Therefore, PECO prioritizes using existing  
4 rights-of-way as well as constructing transmission lines primarily in less populated  
5 areas where impacts on the environment may be greater. In addition, PECO works  
6 with property owners to locate transmission lines to minimize the impact on their  
7 existing and future land use plans wherever practical. Further, PECO takes all  
8 reasonable efforts to mitigate impacts to the environment and landowners, including  
9 compliance with all permits, procedures, and requirements of those agencies that  
10 have jurisdiction and responsibility for the applicable environmental impacts.

11 **Q. How will PECO minimize the effects of construction on areas within and**  
12 **outside of the rights-of-way, including effects on traffic and other local**  
13 **community issues?**

14 A. PECO will not commence work for the Project until all necessary permits for such  
15 work have been issued by the applicable regulatory body. All Project construction  
16 activities will be conducted in accordance with all relevant state and local laws,  
17 permits, property releases, and approved special conditions. Under PECO's  
18 standard construction process, PECO will coordinate with local government and  
19 landowners and all work will be conducted in a manner to minimize to the greatest  
20 extent practical the impacts of construction activities on local communities.  
21 Examples of the actions that PECO will take towards this goal include, but are not  
22 limited to, coordinating laydown yards to minimize traffic impacts, developing a

1 work and outage schedule that takes into account local residence needs, restoring  
2 sites to their original conditions, and working with local townships to coordinate  
3 schedule activities with input from local leaders.

4 **Q. Please describe how PECO will maintain the Project after construction is**  
5 **complete.**

6 A. PECO will own, operate, and provide the maintenance for the Project. PECO will  
7 utilize highly-qualified internal and external resources to accomplish these tasks in  
8 a safe, timely, and efficient manner. An overview of maintenance activities that  
9 PECO intends to perform for the Project includes continuously monitoring the  
10 configuration and status of equipment via control centers; periodic inspection and  
11 thermography with qualified personnel; corrective maintenance as required based  
12 on inspection results; and timely response and restoration as needed in the event of  
13 extreme weather, outages, or other emergency situations. In addition, PECO  
14 recognizes that reacting promptly to a storm or other emergency situations and the  
15 capacity to restore service as quickly and economically as possibly is a crucial  
16 element in meeting customers' service requirement, and therefore PECO has  
17 dedicated service providers to respond to requests for assistance 24 hours a day,  
18 seven days a week, throughout the year.

19 **Q. Does PECO have a vegetation management program applicable to the Project?**

20 A. Yes. PECO has a vegetation management program that applies to the Project. An  
21 overview of this program is provided by Mr. William Patterer, PECO Statement No.

22 1.

1 **Q. Please explain PECO's EMF program as it applies to the Project.**

2 A. PECO has a documented EMF fact sheet applicable to the Project that outlines  
3 PECO's position on EMF, which is included with the Application as an exhibit to  
4 Attachment 5. PECO has determined, as a matter of policy, to design its new and  
5 rebuilt transmission lines to reduce magnetic fields where reasonable. PECO's  
6 EMF fact sheet was developed to highlight how PECO plans to reduce magnetic  
7 field exposures where possible. PECO minimizes EMF by doing the following:

- 8 • Constructing new transmission lines taller than previous designs to  
9 reduce the EMF fields at ground level;
- 10 • Swapping the phases on new dual-circuit transmission lines to result in  
11 some cancellation of the magnetic field and lower the magnetic field at  
12 the edge of the right-of-way; and
- 13 • Swapping the phases on parallel lines in a right-of-way to result in some  
14 cancellation of the magnetic field and lower the magnetic field at the edge  
15 of the right-of-way.

16 Scientific studies over the past several decades have explored the possibility  
17 of health effects from EMF. The majority of research has found no association  
18 between EMF and certain health effects. Approximately 25,000 EMF health effect  
19 articles have been published over the last 30 years. The World Health Organization  
20 has examined the published research and has stated the following:

21 "Based on a recent in-depth review of the scientific literature, the  
22 World Health Organization concluded that current evidence does not

1 confirm the existence of any health consequences from exposure to  
2 low level electromagnetic fields.”<sup>1</sup>

3 Included with the Application as Attachment 9 are EMF calculations for  
4 current and future loadings at maximum operating temperature.

5

6

#### IV. CONCLUSION

7 **Q. Does this conclude your testimony?**

8 **A. Yes.**

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<sup>1</sup> World Health Organization, Radiation: Electromagnetic Fields, *available at*: <https://www.who.int/news-room/questions-and-answers/item/radiation-electromagnetic-fields> (August 4, 2016).

## VERIFICATION

I, Drew Davis, hereby state that the facts set forth in my Testimony are true and correct to the best of my knowledge, information, and belief. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATE: September 30, 2024  \_\_\_\_\_  
DREW DAVIS

**PECO Statement No. 5:  
Testimony of Daniel F. Pacheco**

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF PECO ENERGY COMPANY FILED PURSUANT  
TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL  
OF THE SITING AND CONSTRUCTION OF THE BRANDON  
SHORES RETIREMENT MITIGATION PROJECT IN PEACH  
BOTTOM TOWNSHIP, YORK COUNTY, PENNSYLVANIA AND  
PETITION FOR WAIVER OF 52 PA. CODE § 57.72(C)(10)

DOCKET NO. A-2024-\_\_\_\_

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DIRECT TESTIMONY

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WITNESS: DANIEL F. PACHECO

SUBJECTS: EXISTING LAND RIGHTS AND  
ACQUISITIONS PROCESS; SUMMARY OF  
NEGOTIATIONS AND ACQUISITIONS

DATED: SEPTEMBER 30, 2024

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**PREPARED DIRECT TESTIMONY  
OF  
DANIEL F. PACHECO**

**I. INTRODUCTION AND EXPERIENCE**

**Q. Please state your name and business address.**

A. My name is Daniel F. Pacheco. My business address is PECO Energy Company, 2301 Market Street, Philadelphia, PA 19103.

**Q. By whom are you employed and in what capacity?**

A. I am employed by PECO Energy Company (“PECO” or “Company”) as the Manager, Acquisition and Taxes, Real Estate and Facilities Department.

**Q. What are your current responsibilities?**

A. I am responsible for the acquisition of real estate interests needed for project purposes including both transmission and distribution rights. I am also responsible for assuring payment of all real estate taxes on PECO fee simple owned land.

**Q. Please describe your educational background and professional experience.**

A. I hold a Bachelor of Business Administration in Real Estate and Finance from New Mexico State University. I have been employed by PECO for nearly 14 years. I began my career with PECO in 2010 as a Real Estate Specialist. In 2014, I was promoted to my present role of Manager, Acquisition and Taxes. Prior to working for PECO, I had 15 years of Federal service with the U.S. Army Corps of Engineers and the Federal Highway Administration. Following my Federal service I worked seven years as a consultant for Universal Field Services, a land and right-of-way services company.

1 **Q. Have you testified previously before the Pennsylvania Public Utility**  
2 **Commission (“Commission”) or other regulatory agencies.**

3 A. No.

4 **Q. On whose behalf are you providing this testimony?**

5 A. I am testifying in support of the PECO’s application (“Application”) for approval  
6 to locate and construct the Brandon Shores Retirement Mitigation Project  
7 (“Project”).

8 **Q. What is the purpose of your testimony?**

9 A. The purpose of my testimony is to provide an overview of PECO’s existing  
10 transmission line rights-of-way applicable to the Project and explain the process  
11 PECO is utilizing to acquire fee simple and easement rights for additional  
12 transmission line rights-of-way for the Project. I will also provide a summary of the  
13 status of negotiations with relevant landowners and describe the information  
14 provided to impacts landowners regarding PECO’s vegetation management and  
15 Code of Conduct. In addition, I will explain the status of our attempts to acquire  
16 the rights-of-way needed for the Project.

17 **Q. Are you responsible for the oversight and preparation of any of the**  
18 **attachments or exhibits filed with the Siting Application?**

19 A. Yes. I am sponsoring the following attachments:

- 20
- Attachment 6 – Typical Cross Section of PECO Right-of-Way;

- 1 • Attachment 7 – Depiction of General Layout of Existing Transmission
- 2 Corridor;
- 3 • Attachment 11 – Property Owners Crossed by Right-of-Way;
- 4 • Attachment 12 – Easements and Land Rights Description;
- 5 • Attachment 13 – Representative Property Owner Letter and Notices; and
- 6 • Attachment 16 – Transmission Line Vegetation Management Brochure.
- 7

## 8 **II. EXISTING LAND RIGHTS AND ACQUISITION PROCESS**

9 **Q. Please describe PECO's existing land rights with respect to the Project.**

10 A. Prior to the onset of this Project, PECO already owned fee simple interests and  
11 easements for the majority of the transmission line routes needed for the Project. A  
12 typical cross-section of PECO's right-of-way is included with the Application as  
13 Attachment 6. For example, PECO already owned in fee simple and has related  
14 easements for right-of-way for the transmission corridor from the Pennsylvania and  
15 Maryland border to the Peach Bottom North and Peach Bottom South substations,  
16 which is approximately 5.33 miles long from the border to Peach Bottom North with  
17 an approximate average width of 300 feet. PECO is providing a depiction of the  
18 layout of the existing transmission corridor as Attachment 7 included with the  
19 Application.

20 Further, approximately 4.0 miles of the Maryland and Pennsylvania Border  
21 to Peach Bottom North substation 500 kV 5040 Line, approximately 100 feet of the  
22 Bramah to Peach Bottom South 500 kV 5012 Line tie-in, approximately 0.1 miles

1 of the 230 kV 220-08 Line segment, all 0.47 miles of the Cooper substation to  
2 Bramah substation 230 kV 220-93 Line, and approximately 340 feet of the  
3 Maryland and Pennsylvania Border to Peach Bottom North substation 500 kV 5042  
4 Line tie-in will be in PECO's existing rights-of-way. The relatively small remainder  
5 of the Project, including approximately 1.5 miles of the Maryland and Pennsylvania  
6 Border to Peach Bottom North substation 500 kV 5040 Line, approximately 0.43  
7 miles of the Bramah substation to Peach Bottom South substation 500 kV 5012 Line  
8 tie-in, and approximately 1.0 miles of the 230 kV 220-08 Line segment, will be  
9 located in new rights-of-way created by acquisition of fee simple rights and  
10 easements adjacent to the existing rights-of-way.

11 Of the approximate 359.7 acres required for this Project, PECO needs to  
12 acquire land rights for 39.9 acres from two landowners<sup>1</sup> and 12.8 acres from a  
13 neighboring generator, Constellation Energy Generation, LLC, and needs to acquire  
14 easements for 7.1 acres from another neighboring generator, Calpine Corporation.  
15 A list of the property owners crossed by the Project's rights-of-way are included  
16 with the Application as Attachment 11. Shortly after this filing PECO will begin  
17 negotiations with three landowners to acquire all remaining necessary land rights,  
18 as fee simple or easements, required to construct the Project.<sup>2</sup>

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<sup>1</sup> An affiliate of Transource Pennsylvania, LLC ("Transource") currently has an option to purchase 4.8 acres owned by one of the landowners. PECO intends to seek to acquire an easement for that required land after that transaction is completed.

<sup>2</sup> PECO is also in discussions with Calpine regarding the assignment of the existing easement and will be seeking an easement from Transource after Transource acquires the property in question.

1 **Q. Can you identify the specific easements and other land rights that PECO has**  
2 **acquired or already held that will be used for the Project?**

3 A. Attachment 12 of the Application is a description of the easements and land rights  
4 applicable to the Project.

5 **Q. Please describe PECO's process for identifying the owners of property that will**  
6 **be traversed by Project facilities.**

7 A. Beginning in 2024, PECO personnel and contractors researched and assessed the  
8 Project transmission line routes for property owner names, property records, and  
9 mapping. PECO's real estate team then collected boundary and physical evidence  
10 from the field to determine and confirm property boundaries.

11 **Q. Please describe PECO's process for acquiring fee simple rights and easements.**

12 B. PECO's policy regarding dealing with property owners is described in the  
13 informational packet provided to property owners along the proposed route,  
14 included as Attachment 13. Among other information, described in more detail  
15 below, this packet provides that PECO representatives are to act with integrity at all  
16 times; treat everyone courteously and in a professional manner, and be forthright  
17 and honest in all actions and communications. PECO representatives are required  
18 to act in accordance with PECO's Code of Conduct described below.

19 **Q. Please describe PECO's policy regarding landowner's use of the transmission**  
20 **corridor areas.**

21 A. After PECO's acquisition of a right-of-way in fee simple interest or easement,  
22 landowners are permitted to continue to use the right-of-way area so long as such

1 use is compatible with the safe and reliable operation and maintenance of PECO  
2 facilities. Examples of compatible uses that would not require prior review or  
3 approval from PECO include farming and gardening activities in easement areas.  
4 However, tree farming in the right-of-way would require prior review and approval  
5 due to the need to avoid vegetation encroachment on energized transmission lines.  
6 Subject to review and approval, PECO also permits certain compatible development  
7 within the right-of-way area, provided that the design and work does not interfere  
8 with the safe and reliable operation and maintenance of PECO facilities. Examples  
9 of compatible development of right-of-way area include grading, installation of  
10 roadways or parking lots, and installation of underground infrastructure like  
11 utilities.

### 12 13 **III. SUMMARY OF NEGOTIATIONS AND ACQUISITIONS**

14 **Q. Did PECO provide information to owners of land that may be subject to a fee**  
15 **simple or easement acquisition for the Project?**

16 A. Yes. As stated above, prior to contacting property owners to negotiate agreements,  
17 PECO provided informational packets to notify property owners of the Company's  
18 plans to negotiate to acquire necessary rights across their land. The packet provided  
19 information including the name, purpose, and general location of the Project;  
20 PECO's standards of employee and agent conduct; and also included a permission  
21 form for landowners to grant PECO access to their property.

1           The informational packets provided to landowners also contained notices  
2 required by the Commission under its regulations at 52 Pa. Code § 57.91. These  
3 notices include a description of PECO’s power of eminent domain with respect to  
4 the Project, and the associated rights of the property owner. The notices also  
5 provided information regarding the right-of-way maintenance practices for the  
6 Project facilities. An example of this informational packet is included as  
7 Attachment 13 to the Application.

8           In addition, as explained by Mr. Barry Baker, PECO Statement No. 3, PECO  
9 provided further notice and information to landowners through its public outreach  
10 efforts. Specifically, PECO held a public meeting on June 25, 2024, at the Delta  
11 Peach Bottom Elementary School in Delta, Pennsylvania, near the Project area, to  
12 provide information about the Project to owners of property in the area. At this  
13 meeting, PECO representatives delivered informational presentations about the  
14 Project’s need, routes, design, and operational characteristics, as well as answered  
15 questions from the attendees.

16 **Q. Does PECO have a form of notice it provided to impacted landowners advising**  
17 **them of PECO’s vegetation maintenance plan?**

18 A. Yes. The informational packets that provided notice to landowners described above  
19 were accompanied by information regarding PECO’s right-of-way maintenance. In  
20 addition, on August 7, 2024, PECO provided further notice to the three directly  
21 impacted landowners of PECO’s vegetation management program for operational  
22 transmission lines. PECO provided a brochure titled “Transmission Line

1 Vegetation Management” to the three directly impacted landowners, a copy of  
2 which is included as Attachment 16 to the Application.

3 **Q. Please describe PECO’s Code of Conduct related to property rights.**

4 A. PECO’s Code of Conduct outlines PECO’s expectations for its employees,  
5 contractors, and subcontractors that interact with landowners and the general public  
6 on behalf of PECO regarding this Project. The Code of Conduct applies to all PECO  
7 employees, agents, contractors, and subcontractors who have any contact with  
8 impacted landowners. The Code of Conduct is also publicly available on PECO’s  
9 website at <https://www.peco.com/safety-community/safety/pecos-right-of-way>.

10 **Q. Please describe the status of the negotiations with landowners.**

11 A. Negotiations with each landowner are expected to commence shortly. PECO  
12 anticipates successfully acquiring all necessary land rights to construct the Project  
13 by 2025. As of this time, PECO does not anticipate pursuing any additional land  
14 rights to construct the Project.

15

16

#### IV. CONCLUSION

17 **Q. Does this conclude your testimony?**

18 A. Yes.

**VERIFICATION**

I, Daniel F. Pacheco, hereby state that the facts set forth in my Testimony are true and correct to the best of my knowledge, information, and belief. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATE: September 30, 2024

Daniel F. Pacheco  
DANIEL F. PACHECO

**PECO Attachment 1:  
PUC Regulation Cross-Reference Matrix**

## Brandon Shores Retirement Mitigation Project PUC REGULATION CROSS-REFERENCE MATRIX

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
57.72 (c)	Application shall contain		
57.72 (c)(1)	The name of the applicant and the address of its principal business office.	<ul style="list-style-type: none"> <li>• Certification Application</li> </ul>	
57.72 (c)(2)	The name, title and business address of the attorney of the applicant and the person authorized to receive notice and communications with respect to the application if other than the attorney of the applicant.	<ul style="list-style-type: none"> <li>• Certification Application</li> </ul>	
57.72 (c)(3)	A general description – not a legal or metes and bounds description – of the proposed route of the HV line, to include the number of route miles, the rights-of-way width and the location of the proposed HV line within each city, borough, town, and township traversed.	<ul style="list-style-type: none"> <li>• Attachment 10</li> <li>• Attachment 19</li> <li>• PECO Statement No. 4</li> </ul>	
57.72 (c)(4)	A names and addresses of known persons, corporations, and other entities of record owning property within the proposed rights-of-way, together with an indication of HV line rights-of-way acquired by the applicant.	<ul style="list-style-type: none"> <li>• Attachment 11</li> </ul>	Attachment 19
57.72 (c)(5)	A general statement of the need of the proposed HV line in meeting identified present & future demands for service, how the proposed line will meet that need, and engineering justifications	<ul style="list-style-type: none"> <li>• Attachment 2</li> </ul>	
57.72 (c)(6)	A statement of the safety considerations which will be incorporated into the design, construction, and maintenance of the proposed HV line.	<ul style="list-style-type: none"> <li>• Attachment 5</li> </ul>	
57.72 (c)(7)	A description of the studies which had been made as to the projected environmental impact of the HV line as proposed and of the efforts which have been and will be made to minimize the impact of the HV line upon the environment and upon scenic and historic areas.	<ul style="list-style-type: none"> <li>• Attachment 10</li> </ul>	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
57.72 (c)(8)	A description of the efforts of the applicant to locate and identify archeologic, geologic, historic, scenic, or wilderness areas within 2 miles of the proposed right-of-way and the location and identity of the areas	<ul style="list-style-type: none"> <li>• Attachment 10</li> </ul>	
57.72 (c)(9)	The location and identity of airports within 2 miles of the nearest limit of the right-of-way of the proposed HV line.	<ul style="list-style-type: none"> <li>• Attachment 10</li> </ul>	
57.72 (c)(10)	A general description of reasonable alternative routes to the proposed HV line, including a description of the corridor planning methodology, a comparison of the merits and detriments of each route, and a statement of the reasons for selecting the proposed HV line route.	<ul style="list-style-type: none"> <li>• Attachment 10</li> </ul>	Figure 10-5
57.72 (c)(11)	A list of the local, state, and federal governmental agencies which have requirements that shall be met in connection with the construction or maintenance of the proposed HV line and a list of documents which have been or are required to be filed with those agencies.	<ul style="list-style-type: none"> <li>• Attachment 17</li> </ul>	Anticipated Permits, Approvals, or Documents
57.72 (c)(12)	The estimated cost of construction of the proposed HV line and the projected date for completion.	<ul style="list-style-type: none"> <li>• Application</li> <li>• Attachment 2</li> <li>• PECO Statement No. 1</li> </ul>	
57.72 (c)(13)(i)	A depiction of the proposed route on aerial photographs and topographic maps of suitable detail.	<ul style="list-style-type: none"> <li>• Attachment 18</li> <li>• Attachment 19</li> </ul>	
57.72 (c)(13)(ii)	A description of the proposed HV line, including the length of the line, the design voltage, the size, number, and materials of conductors, the design of the supporting structures and their height, configuration and materials of construction, the average distance between supporting structures, the number of supporting structures, the line to structure clearances and the minimum conductor to ground clearance at mid-span under normal load and average weather conditions and under predicted extreme load and weather conditions.	<ul style="list-style-type: none"> <li>• Attachment 5</li> <li>• Attachment 8</li> <li>• PECO Statement No. 4</li> </ul>	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
57.72 (c)(13)(iii)	A simple drawing of a cross section of the proposed rights-of-way of the HV line and any adjoining rights-of-way showing the placement of the supporting structures at typical locations, with the height and width of the structures, the width of the right-of-way and the lateral distance between the conductors and the edge of the right-of-way indicated.	<ul style="list-style-type: none"> <li>Attachment 6</li> </ul>	
57.72 (c)(13)(iv)	A system map which shows in suitable detail the location and voltage of existing transmission lines and substations of the applicant and the location and voltage of the proposed HV line and associated substations	<ul style="list-style-type: none"> <li>Attachment 3</li> <li>Attachment 4</li> </ul>	
57.72 (c)(14)	A statement identifying litigation concluded or in progress which concerns property or matter relating to the proposed HV line, right-of-way route, or environmental matters.	<ul style="list-style-type: none"> <li>Certification Application</li> </ul>	
Chapter 69	Interim guidelines require		
69.3102 (a)(1)	A Code of Conduct/Internal Practices governing the manner in which public utility employees or their agents interact with landowners along proposed rights of way.	<ul style="list-style-type: none"> <li>Attachment 13</li> </ul>	
69.3102 (a)(2)	Copies of information provided to landowners by the public utility of any publicly disseminated notices advising landowners to contact the Commission or OCA in the event of improper land agent practices.	<ul style="list-style-type: none"> <li>Attachment 13</li> </ul>	
69.3102 (a)(3)	Copies of all notices sent pursuant to §57.91 (relating to disclosure of eminent domain power of electric utilities).	<ul style="list-style-type: none"> <li>Attachment 13</li> </ul>	
69.3102 (b)	Applicants for transmission siting authority should serve a copy of the Code of Conduct on all landowners along the proposed route whose property is to be purchased, subject to easement rights or borders the transmission corridor. The Code of Conduct should also be available on the applicant’s website.	<ul style="list-style-type: none"> <li>Attachment 13</li> </ul>	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
69.3102 (c)	Applicants for transmission siting authority should provide prior notice to the Commission’s Office of Communications of informational presentations to community groups by the public utility scheduled after the filing of the transmission siting application so that the Commission, OCA and other interested parties can attend meetings or obtain copies of information being disseminated at the presentations.	N/A	
69.3103	Eminent domain filing requirements	N/A	
69.3104	Exemption from municipal zoning standards	N/A	
69.3105 (1)	Transmission applicants should utilize a combination of transmission route evaluation procedures including high-level GIS data, traditional mapping (including US Geological Survey data and compilation), aerial maps and analysis of physical site-specific constraints raised by affected landowners.	<ul style="list-style-type: none"> <li>• Attachment 10</li> </ul>	
69.3105 (2)	Transmission applicants should summarize the status of property acquisitions (including fee simple acquisitions and rights of way/easements) as part of the application. The applicant should provide the current status and continuing updates on property acquisition litigation or settlements during the course of the siting proceeding.	<ul style="list-style-type: none"> <li>• Attachment 12</li> </ul>	
69.3105 (3)(i)	In providing information regarding the reasonable alternative routes the utility actively considered in its final phase of the route selection process, and the relative merits of each, in accordance with §57.72(c)(10), the applicant should include the following information: The environmental, historical, cultural and aesthetic considerations of each route.	<ul style="list-style-type: none"> <li>• Application</li> <li>• Attachment 10</li> <li>• PECO Statement No. 3</li> </ul>	Figure 10-5

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
69.3105 (3)(ii)	The proximity of these alternative routes to residential and non-residential structures.	<ul style="list-style-type: none"> <li>• Application</li> <li>• Attachment 10</li> <li>• PECO Statement No. 3</li> </ul>	Figure 10-5
69.3105 (3)(iii)	The applicant’s consideration of relevant existing rights of way.	<ul style="list-style-type: none"> <li>• Application</li> <li>• Attachment 10</li> <li>• Attachment 12</li> <li>• PECO Statement No. 3</li> </ul>	
69.3105 (3)(iv)	The comparative construction costs associated with each route.	<ul style="list-style-type: none"> <li>• Application</li> <li>• Attachment 10</li> <li>• PECO Statement No. 3</li> </ul>	
69.3105 (4)	With reference to the proposed route, applicants should provide a summary of efforts made to contact and solicit assistance from local governments and non-governmental organizations regarding areas encompassed within the requirement of §57.72(c)(8).	<ul style="list-style-type: none"> <li>• Attachment 17</li> </ul>	
69.3106 (1)	A matrix or list showing all expected federal, state and local government regulatory permitting or licensing approvals that may be required for the project at the time the application is filed, the issuing agency, approximate timeline for approval and current status. The applicant should provide an update on the status of the regulatory permitting/licensing approvals as the case progresses.	<ul style="list-style-type: none"> <li>• Attachment 17</li> </ul>	
69.3107(a)(1)	Applicants for transmission line siting authority should provide a detailed vegetation management plan that includes the following components: A general description of the utility’s vegetation management plan.	<ul style="list-style-type: none"> <li>• Attachment 15</li> <li>• Attachment 16</li> </ul>	
69.3107(a)(2)	Factors that dictate when each method, including aerial spraying, is utilized.	<ul style="list-style-type: none"> <li>• Attachment 15</li> <li>• Attachment 16</li> </ul>	
69.3107(a)(3)	Vegetation management practices near aquatic and other sensitive locations.	<ul style="list-style-type: none"> <li>• Attachment 15</li> <li>• Attachment 16</li> </ul>	
69.3107(a)(4)	Notice procedures to affected landowners regarding vegetation management practices.	<ul style="list-style-type: none"> <li>• Attachment 16</li> </ul>	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
69.3107(a)(5)	Provision of a copy of a landowner maintenance agreement that describes the duties and responsibilities of landowners and the utility for vegetation management to the extent utilized.	<ul style="list-style-type: none"> <li>• Attachment 16</li> </ul>	
69.3107(b)(1)	Transmission siting applications should include the following: A description of the EMF mitigation procedures that the utility proposes to utilize along the transmission line route. This description should include a statement of policy approach for evaluating design and siting alternatives and a description of the proposed measures for mitigating EMF impacts.	<ul style="list-style-type: none"> <li>• Attachment 9</li> </ul>	

\*Pennsylvania Code 57.71 – 57.75 relates to “Commission Review of Siting and Construction of Electric Transmission Lines”. Pennsylvania Code 69.3101 – 69.3107 relates to “General Orders, Policy Statements, and Guidelines on Fixed Utilities”. Sections described within Attachment 1 pertain specifically to those items required to be included for an application filing.

**Attachment 2:**  
**Purpose and Need Statement for the Project**

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# Brandon Shores Retirement Mitigation Project

## PURPOSE AND NEED STATEMENT

### 1.0 INTRODUCTION

PECO Energy Company (“PECO”) proposes to construct the transmission lines and associated transmission facilities described in this Application for the Brandon Shores Retirement Mitigation Project (the “Project”). The Project includes PJM-identified “Immediate-need” reliability projects and is incorporated into the Regional Transmission Expansion Plan approved by PJM Interconnection, L.L.C. (“PJM”). The Project is required to mitigate significant and widespread reliability issues that would otherwise result from the planned deactivation of the Brandon Shores Generating Station (“Brandon Shores”), located in Anne Arundel County, Maryland, which will have severe impacts on the transmission system in the Mid-Atlantic region of the PJM footprint, including on PECO’s transmission facilities. The Project also supports mitigation of reliability concerns caused by the increased data center load growth within northern Virginia.

The proposed Project involves the construction of (1) a new approximately 5.5 miles 500 kV line from the Pennsylvania and Maryland border to the Peach Bottom North substation, with approximately 4.0 miles of the transmission line within PECO’s existing right-of-way, and which will extend into Maryland to the Graceton substation within the Baltimore Gas and Electric Company (“BGE”) service territory;<sup>1</sup> (2) a new approximately 0.44 miles tie-in of the new 500 kV 5042 Line into the future Bramah 500/230 kV substation within PECO’s existing utility corridor; (3) an approximately 1.1 miles segment of the existing 230 kV 220-08 Line around the Peach Bottom North substation with approximately 0.1 miles of the transmission line within PECO’s existing right-of-way; (4) a new approximately 0.43 miles 500 kV Bramah to Peach Bottom South 500 kV tie-in to the Bramah substation with approximately 100 feet of the transmission line within PECO’s existing right-of-way; and (5) a new approximately 0.47 miles 230 kV 220-93 Line from Cooper substation to Bramah substation entirely within PECO’s existing right-of-way. The Project also includes expanding the Peach Bottom North substation.

PECO is obligated and responsible for the design, engineering, construction, ownership, maintenance, and operation of the Project pursuant to the PJM Notification of Designation of Construction Responsibility issued to PECO on July 19, 2023, and subsequent Construction Responsibility Letters issued to PECO on January 2, 2024, and March 12, 2024. The current estimated cost for the Project is approximately \$118 million.

Subject to the Pennsylvania Public Utility Commission’s (“Commission”) approval, construction of the Project is scheduled to begin as soon as practicable following Commission approval, given

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<sup>1</sup> PECO’s ownership of this line ends at the Maryland border.

the need to address the reliability driver for the Project on an expedited basis. Under the PJM Notification of Designation of Construction Responsibility issued to PECO on July 19, 2023, PECO is projecting to complete construction and bring these facilities online by December 2028.

## 2.0 SYSTEM PLANNING

As a transmission owner operating in Pennsylvania, PECO is a member of PJM and has formally transferred certain planning transmission system and operating responsibilities to PJM. PJM is a Federal Energy Regulatory Commission (“FERC”) approved Regional Transmission Organization charged with ensuring the reliable and efficient operation of the electric transmission system under its functional control and coordinating the transmission of electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. PECO is a signatory of the Consolidated Transmission Owners Agreement (“CTOA”) that defines the responsibilities of PJM and each of the transmission owners within the PJM footprint. PECO, as an owner of transmission facilities in Pennsylvania and member of PJM, actively collaborates with PJM in the transmission planning process to cost-effectively and efficiently ensure system reliability for customers, and PECO participates in the PJM stakeholder process to reliably and economically establish rules and procedures for planning and operating the transmission grid.

As authorized by the CTOA, PJM prepares an annual Regional Transmission Expansion Plan (“RTEP”), which contains the transmission developments needed to ensure reliable transmission service. PJM uses the RTEP process to identify system reinforcements that are required to, among other things, meet the North American Electric Reliability Corporation (“NERC”) reliability standards, PJM reliability planning criteria, and transmission owner reliability criteria as included in the filed FERC Form 715. The RTEP process is set forth in Schedule 6 of PJM’s Amended and Restated Operating Agreement and encompasses a comprehensive series of detailed analyses to ensure that electric power continues to flow reliably to customers across the PJM region under stringent reliability planning criteria. An outline of the RTEP process and the reliability criteria used by PJM is available in PJM Manuals 14A through 14H.<sup>2</sup>

The RTEP process is primarily driven by addressing system reliability needs, market efficiency, and operational performance, as well as meeting public policy requirements and goals. As part of the RTEP process, PJM performs reliability assessments on Bulk Electric System facilities within the PJM territory (primarily focusing on transmission facilities 69 kV and above) based on standards such as NERC Transmission System Planning Performance Requirements to determine if specific transmission upgrade projects are needed to ensure reliability which supports electric service to customers based on expected system conditions, including load changes as well as generator retirements and additions. If in the course of performing reliability assessments PJM

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<sup>2</sup> The PJM Manuals are available at <https://www.pjm.com/library/manuals>.

determines that there are violations of system planning criteria under anticipated contingency and non-contingency conditions, such as thermal overloads, voltage magnitude issues, or voltage drop issues, PJM, in coordination and collaboration with transmission owners, will direct transmission system upgrades to be built to maintain the reliability and safety of the grid. PJM will coordinate with transmission owners, either through competitive or non-competitive processes, to determine necessary transmission construction projects to address potential system violations.

PJM recommends solutions to identified system violations and presents the assumptions, needs, solutions, and alternatives considered at Transmission Expansion Advisory Committee (“TEAC”) and/or Sub-Regional Regional Transmission Expansion Plan (“SRRTEP”) meetings.<sup>3</sup> PJM’s recommended solutions are generally referred to as baseline projects. PJM then seeks for the PJM Board of Managers to approve the recommended solutions; and once the PJM Board approves, the transmission owner is notified of its construction responsibility assignments for the baseline project. Furthermore, the transmission owner acknowledges and accepts its designation and is then responsible for financing, designing, engineering, constructing, owning, operating, and maintaining the baseline project. The baseline project is then incorporated into the RTEP.

Additionally, at any time, PJM may identify an “Immediate-need” reliability project, defined under the PJM Operating Agreement as:

[A] reliability-based transmission enhancement or expansion that the Office of the Interconnection has identified to resolve a need that must be addressed within three years or less from the year the Office of the Interconnection identified the existing or projected limitations on the Transmission System that gave rise to the need for such enhancement or expansion.

PJM may determine that for certain immediate reliability needs a proposal window may not be feasible, and therefore solutions to the need will not be subject to a competitive bidding process. Instead, PJM will identify and post the immediate-need reliability criteria violations and system conditions for review and comment by the TEAC and/or SRRTEP and other stakeholders. The PJM Office of the Interconnection will engage with stakeholders for comments at the TEAC and/or SRRTEP stakeholder meetings regarding the needs, solutions, and/or alternatives for the immediate-need reliability project. Then the PJM Office of Interconnection will submit a recommended plan for approval to the PJM Board of Managers. Once the PJM Board of Managers approves the plan, the transmission owner is notified of its construction responsibility assignments for the baseline project and the transmission owner acknowledges and accepts this designation following the same process as previously noted above.

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<sup>3</sup> The TEAC provides advice and recommendations to aid in the development of the RTEP. The SRRTEP provides review and input of subregional RTEP projects and provides recommendations to the TEAC concerning subregional RTEP projects.

An Immediate-need reliability project may be identified through PJM’s Generator Deactivation Process, detailed in the PJM Tariff Part V Generation Deactivation requirements and PJM Manual 14D Section 9.1, which is initiated when a PJM generation owner provides written notice to the PJM Generation Manager of its intention to retire a unit from PJM operations at least 90 days in advance of the planned deactivation date. Upon receipt of the notice, the PJM Generation Manager notifies PJM Planning, PJM Markets, and the Independent Market Monitor, and PJM performs analysis of the impact from the proposed deactivation. If no reliability or market power issues are identified by PJM, a generator may retire as soon as practicable. If PJM identifies reliability or market power issues, PJM will work with the generation owner to plan for the continued operation of the generator until necessary transmission upgrades can be completed to alleviate the identified issues, although under existing rules the generator owner cannot be compelled to continue operations. The generator owner would be eligible for compensation for allowing the generator unit(s) to remain active for the duration of time PJM requests until necessary transmission upgrades can be completed (typically through what is called a “reliability must run” agreement filed at FERC), and the transmission upgrades necessitated by the retirement would go through the Immediate-need process described above.

### **3.0 DEFINITION OF THE PROBLEM**

On April 6, 2023, Talen Energy Corporation (“Talen”) notified PJM of the planned deactivation of the 1,282 MW coal-fired Units 1 and 2 of Brandon Shores, scheduled for June 1, 2025. PJM’s analysis of the Brandon Shores deactivation revealed that these retirements will have multiple widespread reliability impacts. Specifically, PJM identified substantial N-1, N-1-1, load deliverability, and voltage deviation violations on transmission facilities due to the Brandon Shores’ deactivation in various transmission owners’ service territory in the Mid-Atlantic region, including several Exelon Operating Companies including PECO, as well as thermal violations affecting several transmission owners not including PECO. Due to Brandon Shores deactivation studies, PJM identified widespread voltage violations in PECO, BGE, Potomac Electric Power Company (“Pepco”), Dominion Energy, First Energy (Allegheny Energy or “APS”), Metropolitan Edison, and PPL Electric Utilities service territories for N-1 and N-1-1 outages. PJM also identified multiple 115 kV, 138 kV, 230 kV, and 500/230 kV thermal overloads on transmission facilities in BGE, APS, and Pepco due to the deactivation of Brandon Shores units.

These issues led to PJM identifying the need to develop Immediate-need reliability projects due to the fact that the deactivation would occur in less than three years. The deactivation would compound significant other reliability concerns identified by PJM in a then-ongoing competitive process initiated only a few months earlier.<sup>4</sup>

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<sup>4</sup> PJM opened a competitive solicitation process from February 25, 2023, to May 31, 2025, referred to as the 2022 RTEP Reliability Window 3 “RTEP Window,” to address the data center load growth concentrated primarily in northern Virginia, but also in parts of Maryland. With data center load forecasts in this area projected to be around 7,500 MW by 2027-2028, PJM identified significant reliability issues in PECO service territory as well as other

In addition, PJM requested Talen to continue to operate Brandon Shores because PJM determined that system upgrades could not be completed prior to the planned retirement of Brandon Shores on June 1, 2025. On April 18, 2024, Talen filed with the FERC a Continuing Operations Rate Schedule (typically referred to as a “Reliability Must-Run (“RMR”) Agreement”) for Units 1 and 2 of Brandon Shores with a Monthly Fixed Cost Charge of \$14,619,407 (Annual Fixed Cost of \$175,432,884) from June 1, 2025, through December 31, 2028, subject to earlier termination and/or termination within 180 days with written notice from PJM of such request. FERC has set that RMR Agreement for hearing and settlement judge procedures.<sup>5</sup>

The cost for the continued operation of Brandon Shores under the RMR Agreement will be borne by various ratepayers within the PJM footprint, including certain Pennsylvania customers. If the necessary system upgrades are not completed by December 31, 2028, PJM may request that Brandon Shores continue operating under an extended RMR arrangement, further increasing costs to Pennsylvania ratepayers.

#### **4.0 PROPOSED SOLUTION**

The PECO Project, along with several other baseline projects proposed by other transmission owners, will support the mitigation of the voltage and thermal violations in the PECO service territory and other transmission owners’ service territories caused by the planned deactivation of Brandon Shores, and additionally support the needs identified in the 2022 RTEP Window 3, including providing loading relief and reactive support along the seams to other transmission owner zones, particularly for BGE and Pepco.

Soon after Talen Energy notified PJM of the planned deactivation of Brandon Shores, PJM, per the PJM Tariff Part V Generation Deactivation requirements and PJM Manual 14D Section 9.1 Generator Deactivation Process, identified numerous voltage and thermal violations in the Mid-Atlantic region of the PJM footprint. On May 7, 2023, PJM presented a Generation Deactivation Notification Update where it noted that reliability studies were underway for the Brandon Shores units, along with other considerations. PECO, in coordination with BGE and Pepco, developed proposals to address the reliability issues resulting from the Brandon Shores deactivation in collaboration with PJM. On June 6, 2023, PJM presented a first read to the TEAC as part of the Generation Deactivation Notification Update, including identified reliability issues and proposed system reinforcements to fully address the identified reliability concerns. These recommendations included PECO projects, including specifically:

- Expansion of the Peach Bottom North substation;

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transmission owner zones. During this competitive solicitation process, the deactivation of the Brandon Shores coal units was also announced, which would exacerbate the reliability issues in the Mid-Atlantic region.

<sup>5</sup> *Brandon Shores LLC*, 187 FERC 61,176 (2024).

- Building a new 500 kV transmission line from the Graceton substation to Peach Bottom substation; and
- Establishing a new ring bus substation, West Cooper, by cutting into the existing 5012 Peach Bottom South – Conastone 500 kV line, installing a new 500/230 kV transformer, and reconfiguring the existing 220-08 Graceton – Cooper 230 kV line to terminate at the new West Cooper substation.<sup>6</sup>

PJM provided a second read at the TEAC on July 11, 2023, reiterating the need for the Brandon Shores mitigation projects, including PECO’s proposed projects. PJM recommended the projects to the PJM Board of Managers, who approved the projects during its July 12, 2023 meeting. PJM provided PECO a Notification of Designation of Construction Responsibility for the Immediate-need projects on July 19, 2023, and March 12, 2024, and those projects, except for the West Cooper substation expansion, are included in the PECO Project.<sup>7</sup>

In May 2023, while PECO was determining the scope of work to mitigate the Brandon Shores deactivation reliability issues, PECO was also participating in the 2022 RTEP Window 3 process to develop proposals primarily aimed at addressing the reliability issues stemming from the significant load growth in the northern Virginia area.<sup>8</sup> PECO recognized that its 2022 RTEP Window 3 proposals would provide a holistic solution to not only address the data center load growth, but that elements of the proposals could also be leveraged to mitigate the reliability issues associated with the loss of generation from the Brandon Shores deactivation. Thus, when PJM determined the projects recommended to address the Brandon Shores deactivation, which in turn became the transmission projects at the heart of PECO’s Project, these projects complemented PECO’s other planned transmission proposals that were selected through the 2022 RTEP Window 3 and are described in PECO’s 2022 RTEP Window 3 application (“2022 RTEP Window 3 Project”) that is being concurrently filed with the Commission.<sup>9</sup> As such, PECO’s Project and

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<sup>6</sup> On January 2, 2024, PJM notified PECO of the cancellation of the West Cooper substation project, which is not included in the PECO Project. On March 12, 2024, PJM notified PECO of a change to its designation for construction responsibility for certain Immediate-need projects and directed PECO to interconnect the Cooper substation to the new Bramah substation and cut in the new 500 kV line 5012 to the new Bramah substation.

<sup>7</sup> PJM presented at the October 31, 2023, and December 5, 2023, TEAC meetings its intention to cancel the new West Cooper substation and modify Transource Pennsylvania, LLC’s (“Transource”) b3780 North Delta substation to address the Brandon Shores Deactivation scope of work. Scope of work b3780 was previously assigned to Transource by PJM and the New Jersey Board of Public Utilities as part of the New Jersey Board of Public Utilities’ State Agreement Approach competitive solicitation. The PJM Board of Managers approved the cancellation on December 11, 2023, and notified PECO of the cancellation on January 2, 2024.

<sup>8</sup> Specifically, PJM forecasted between 4.2% and 5.0% annual load growth in the Dominion Energy service territory over the next 10- to 15-year time frame as well as significant annual load growth in the adjacent First Energy territory in Maryland. The expected load growth is roughly comparable to doubling PECO’s load within the PJM footprint. Through analysis of these factors, PJM identified regional constraints that impacted PECO resulting from imports into load center areas along the Peach Bottom-Conastone-Brighton-Doubs 500 kV line and that PECO’s system would need reactive power MVAR reinforcements.

<sup>9</sup> As described in PECO’s concurrently filed application, the 2022 RTEP Window 3 Project will mitigate thermal and voltage issues in the Exelon Mid-Atlantic, Dominion Energy, and First Energy regions, allow for the supply of load

2022 RTEP Window 3 Project are designed to function in conjunction with each other, and the successful mitigation of the reliability concerns PJM identified from the Brandon Shores deactivation and in the 2022 RTEP Window 3 requires the approval and construction of both the PECO Brandon Shores Retirement Mitigation Project and PECO’s 2022 RTEP Window 3 Project.

Additionally, since PJM had determined during the generator deactivation study process in May 2023 that the Immediate-need projects could not be fully completed by the planned deactivation date of June 1, 2025, PJM requested that Talen keep the Brandon Shores units in operation until all necessary transmission system upgrades were in service. Talen Energy agreed to extend its operations under an RMR arrangement and later filed an RMR Agreement for the Brandon Shores units with FERC for approval on April 18, 2024, to remain in operation through 2028. The PECO Project is planned to be in service prior to the termination of the RMR Agreement, but the Project cannot be delayed without risking a delayed in-service date possibly requiring an extension of the RMR Agreement.

Upon receipt of all necessary approvals, PECO’s Project will extend from the Pennsylvania and Maryland border to the Peach Bottom North substation, reinforcing the transfer of power from east of the Peach Bottom Nuclear Generation Station to the Graceton Substation area in Maryland and interconnecting new and upgraded 500 kV transmission along this route. The Project will support the mitigation of thermal and voltage issues in the Mid-Atlantic region of the PJM footprint and increase transmission capacity within PECO’s territory. The Project will also support the mitigation of the reliability concerns identified in the 2022 RTEP Window 3 process. Furthermore, the Project, together with separate projects by other public utilities designated by PJM, will mitigate the potential need for Brandon Shores to continue to operate beyond December 31, 2028, the term of the current RMR Agreement, and prevent Pennsylvania ratepayers from having to pay additional costs for a potentially extended RMR arrangement for Brandon Shores.

Pursuant to the PJM Notification of Designation of Construction Responsibility provided to PECO on July 19, 2023, PECO has been designated responsibility for the design, engineering, construction, ownership, maintenance, and operation of the facilities of the Project.

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to the growing data center load pocket in the northern Virginia area, increase transmission capacity within PECO’s territory, and remove congestion on existing facilities in the line 5012 corridor.

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**CONFIDENTIAL**

**Attachment 3:**

**Existing Transmission System Project Area  
Maps**

**(No Public Version Available)**

**CONFIDENTIAL**

**Attachment 4:**

**Proposed Transmission System Project Area  
Maps**

**(No Public Version Available)**

**Attachment 5:**  
**Design, Engineering, and Safety Statement**

# **Brandon Shores Retirement Mitigation Project**

## **DESIGN AND ENGINEERING AND SAFETY**

### **CONSIDERATIONS**

PECO Energy Company (“PECO”) proposes to construct the transmission lines and associated transmission facilities described in this Application for the Brandon Shores Retirement Mitigation Project (the “Project”). The Project is required to maintain the reliability of the PJM system and mitigate violations of system planning criteria on the PECO system, in addition to other benefits. The design of the Project incorporates the National Electrical Safety Code (NESC) standards. NESC is a United States standard for the safe installation, operation, and maintenance of the electric power system. Although it is not intended as a design specification, its provisions establish minimum design requirements.

#### **1. DESIGN AND ENGINEERING**

The NESC is a set of rules to safeguard individuals during the installation, operation, and maintenance of electric installations, and contains the provisions considered necessary for the safety of employees and the public. PECO proposes to construct the Project in accordance with design specifications and safety rules which meet or exceed the requirements of the latest revision of the NESC.

The NESC includes loading requirements and clearances for the design, construction, and operation of power lines. The “loads” on conductors and supporting structures are the forces that develop from the weight of the conductors, the weight of ice on the conductors, plus wind pressure on the conductors and supporting structures. Loading requirements are the loads on the conductors and structures that are anticipated assuming certain ice and wind conditions. Loading requirements always contain “safety factors” to allow for unknown or unanticipated contingencies. The clearances and loading requirements contained in the NESC were developed to ensure public safety and welfare.

PECO transmission line design standards meet or exceed the NESC standards. For example, the relative order of grades of construction for conductors and supporting structures is B, C, and N, with Grade B being the highest. According to the NESC standards, construction Grades B, C, or N may be used for transmission lines (except at crossings of railroad tracks and limited access highways where Grade B construction is specified). However, PECO designs all of its transmission lines for Grade B construction. Grade B design and construction specifies such things as larger-minimum crossarm dimensions, larger-minimum conductor size, and increased safety factors.

As another example, PECO utilizes additional loading conditions to account for enhanced structural performance, increasing overall safety performance. PECO includes in its design considerations a heavy ice loading, including 1 ½ inch radial ice. The Project’s design also accounts for longitudinal loading cases with a broken phase condition. PECO uses the longitudinal cases to mitigate the possibility for cascading failures. PECO’s use of these additional load cases results in the Project being designed to operate safely and reliably during inclement weather even more severe than assumed by the NESC.

Further, PECO designs transmission lines with more clearance to the ground than required by the NESC. The clearance requirement for this project as shown below:

**230 kV Vertical Clearance to Ground Standards for NESC and PECO**

<b>Surface Underneath Conductors</b>	<b>NESC Standard</b>	<b>PECO Standard</b>
Roads, streets, alleys	23 Ft.	27 Ft.
Other land traversed by vehicles (e.g., cultivated field, forest, etc.)	23 Ft.	27 Ft.
Spaces accessible to pedestrians only	19 Ft.	23 Ft.
Railroad tracks	31 Ft.	35 Ft.

**500 kV Vertical Clearance to Ground Standards for NESC and PECO**

<b>Surface Underneath Conductors</b>	<b>NESC Standard</b>	<b>PECO Standard</b>
Roads, streets, alleys	28 Ft.	33 Ft.
Other land traversed by vehicles (e.g., cultivated field, forest, etc.)	28 Ft.	33 Ft.
Spaces accessible to pedestrians only	14 Ft.	29 Ft.
Railroad tracks	38 Ft.	41 Ft.

PECO also surpasses the NESC standards in the structure overload or multiplying factors. The guideline for structural load factors for transmission structures can be found in the NESC Code. PECO applies overload factors of 1.1 for NESC 250C and NESC 250D loads compared to the NESC requirement of using 1.0 overload factors for NESC 250C and NESC 250D loads.

**2. SAFETY CONSIDERATIONS**

PECO will incorporate numerous safety considerations into the design and construction of the Project.

**Steel Structure Safety Considerations**

All steel structures installed on the Project will be labeled with “Danger Signs” to discourage public tampering. Additionally, the maintenance climbing systems for the tubular structures will be designed to start at a height well out of reach, typically 15 feet above ground line. Further, the maintenance climbing systems will be a clipped ladder system known as a McGregor Ladders, and

although the structures will be installed with the ladder clips, the ladders will not be installed unless needed for future maintenance activities. After maintenance activities are complete, the ladders will be removed. These considerations render the structures virtually unclimbable and enhance the safe operation of the line.

### Relay Protection Systems

PECO uses a relay protection system to protect the public safety and welfare as well as associated equipment and the transmission system. Relay protection will be installed for all Project transmission lines to automatically de-energize the line in the unlikely event that the line or supporting structure fails and the line contacts the ground.

### Construction Safety

Safety is of highest importance during all aspects of the Project. PECO will use its vast experience with constructing transmission facilities to incorporate safety into the Project specifications. The Project will be constructed according to well-defined procedures that utilize standard construction practices to perform all work safely and in compliance with Occupational Safety and Health Administration (“OSHA”) Rules and Regulations, while keeping impacts to the environment to a minimum. PECO will have dedicated safety personnel for the Project, and each contractor will be required to have an adequate safety program in place, monitored by a full-time on-site safety representative. All work will be done in accordance with NESC, OSHA, and any applicable state or federal requirements.

### Personnel Safety Rules

In addition to the safety considerations described above, below are a few examples of the PECO rules designed to promote employee safety. These rules are incorporated into the PECO employee Safety Handbook

- Only qualified employees and trainees working under their direct supervision may work on or with exposed energized lines or parts of equipment. Employees must be familiar with the minimum approach distances as indicated by OSHA regulations.
- PECO developed work procedures to allow work to be performed on energized facilities in a safe manner. When lines or apparatus are removed from service to be worked on, a red tag must be physically placed on the control handle of the de-energized equipment. The red tag may be removed only after proper authorization to energize the equipment. Various other tags are used for limited operations and informational purposes. Employees will not apply or remove a tag or change the status of tagged equipment unless authorized.
- PECO requires the use of temporary safety grounds on de-energized facilities for employee safety during maintenance, construction, or reconstruction work. Safety grounds are wires connecting the de-energized facility to an electrical ground. If the facility should be energized, the safety grounds will divert the current directly to ground and reduce the

likelihood of personal injury. The conductor size and attachment clamps of temporary safety grounds must be capable of conducting anticipated fault currents. Rubber gloves, rubber sleeves, and additional rubber protective equipment are used as required when applying or removing temporary safety grounds to or from the lines or apparatus to be grounded. An approved nonconductive working stick of sufficient length to allow workers to maintain the following required minimum clearances is used to test that the line has been de-energized and to apply temporary safety grounds. Before applying grounds, a test is done to confirm that the line is de-energized. The voltage test device is checked before and after use to assure reliability. When ground pins are used to establish proper ground points, they are driven to a depth of not less than four feet as near vertical as possible.

- PECO requires that personnel inspect and examine poles or structures for structural integrity before climbing. If there is any reason to believe that a pole is unsafe, it is stabilized before work is performed. Appropriate safety gear in the form of body belts, safety straps, hard hats, gloves, etc., is worn by linemen during line work activity.

### **3. PERIODIC MAINTENANCE PROGRAM ON ALL TRANSMISSION LINES**

To ensure continued public safety and integrity of service, PECO implements the following inspections on our transmission system:

1. Comprehensive aerial visual inspection (“CVI”) on a 5-year periodicity,
2. Foot patrol inspection on a 5-year periodicity,
3. Annual standard inspection with thermography.

The inspection program will be administered through the use of helicopter patrols and foot patrols. Climbing patrols are performed as needed. CVI inspections inspect 1/5 of the transmission system each year using a helicopter or drone. During the CVI patrols, the helicopter crew flies parallel, to the side, and above the line so that the photographer can take clear high-resolution pictures the conductors, right-of-way, structures, and all the components of each structure. Inspection of the structure and components are completed by analyzing the photographs on a computer in an office environment. An electronic database of all the deficiencies with repair priorities is forward to transmission engineering for corrective action.

The foot patrol inspection will check right-of-way conditions, including, as relevant, access roads, bridges, pole washouts, tower footers, vegetation height, and clearance to conductors, pole, insulators and the condition of hardware with the use of binoculars. Identified problems are included in a report that is forwarded to transmission engineering for corrective action. Foot patrol inspections inspect 1/5 of the transmission system every year.

The standard patrol with thermography is performed annually during peak electrical load to identify any hot spots on the conductor connectors and to look for signs of line damage or deterioration and observe clearances between vegetation and conductors.

The inspection programs for a transmission line begin approximately three to five years after the line is energized unless a helicopter patrol reports a need for earlier action. The frequency of foot patrols is also on a 5-year periodicity with 1/5 of the system inspected every year.

#### **4. ELECTROMAGNETIC FIELD MANAGEMENT**

All electric currents, including those running within electric transmission lines, generate electric and magnetic fields (sometimes referred to jointly as electromagnetic fields or “EMF”). Magnetic fields are directly related to the flow of electrical current in wires and devices. Electric fields are directly related to voltage, which creates the force to make electrical current flow. Both fields decrease quickly with distance from the source. The EMF that accompanies the electricity in transmission lines cannot be eliminated.

Scientific studies over the past several decades have explored the possibility of health effects from EMF. The majority of research has found no association between EMF and certain health effects. Although PECO does not believe that the current scientific evidence demonstrates that magnetic fields cause any adverse health effects or pose a health or safety danger to the public, PECO applies its magnetic field policies and practices to new transmission line projects. PECO’s electric and magnetic field policies and practices are further detailed as an exhibit to this attachment.

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## EXHIBIT 1

### PECO EMF and Health Information Fact Sheet

Electric and magnetic fields (EMF) are produced by energized electric components. EMF originates from electric utility transmission and distribution lines, household wiring, appliances, and all other electrical equipment. In the modern world they are everywhere and virtually everyone living in an industrialized country are exposed to them. PECO routinely configures and operated its transmission lines to help reduce EMF levels and exposures.

#### Minimizing EMF on PECO Transmission Lines

PECO minimizes EMF from our transmission line by doing the following:

- Construct new transmission lines taller than previous designs to reduce the EMF fields at grade.
- Swapping the phases on new dual-circuit transmission lines will result in some cancellation of the magnetic field and will lower the magnetic field at the edge of the right-of-way.
- Swapping the phases on parallel lines in a right-of-way will result in some cancellation of the magnetic field and will lower the magnetic field at the edge of the right-of-way.

Scientific studies over the past several decades have explored the possibility of health effects from EMF. The majority of research has found no association between EMF and certain health effects. Approximately 25,000 EMF health effect articles have been published over the last 30 years. The World Health Organization has examined the published research and says the following:

*“Based on a recent in-depth review of the scientific literature, the World Health Organization concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields.”<sup>1</sup>*

PECO cannot eliminate the EMF that accompanies the electricity we all use every day, but we continue to conduct objective and thorough assessment of EMF exposure for all new transmission lines.

#### Additional information on EMF

World Health Organization

- <https://www.who.int/news-room/questions-and-answers/item/radiation-electromagnetic-fields>

National Institute of Environmental Health Science

- <https://www.niehs.nih.gov/health/topics/agents/emf>

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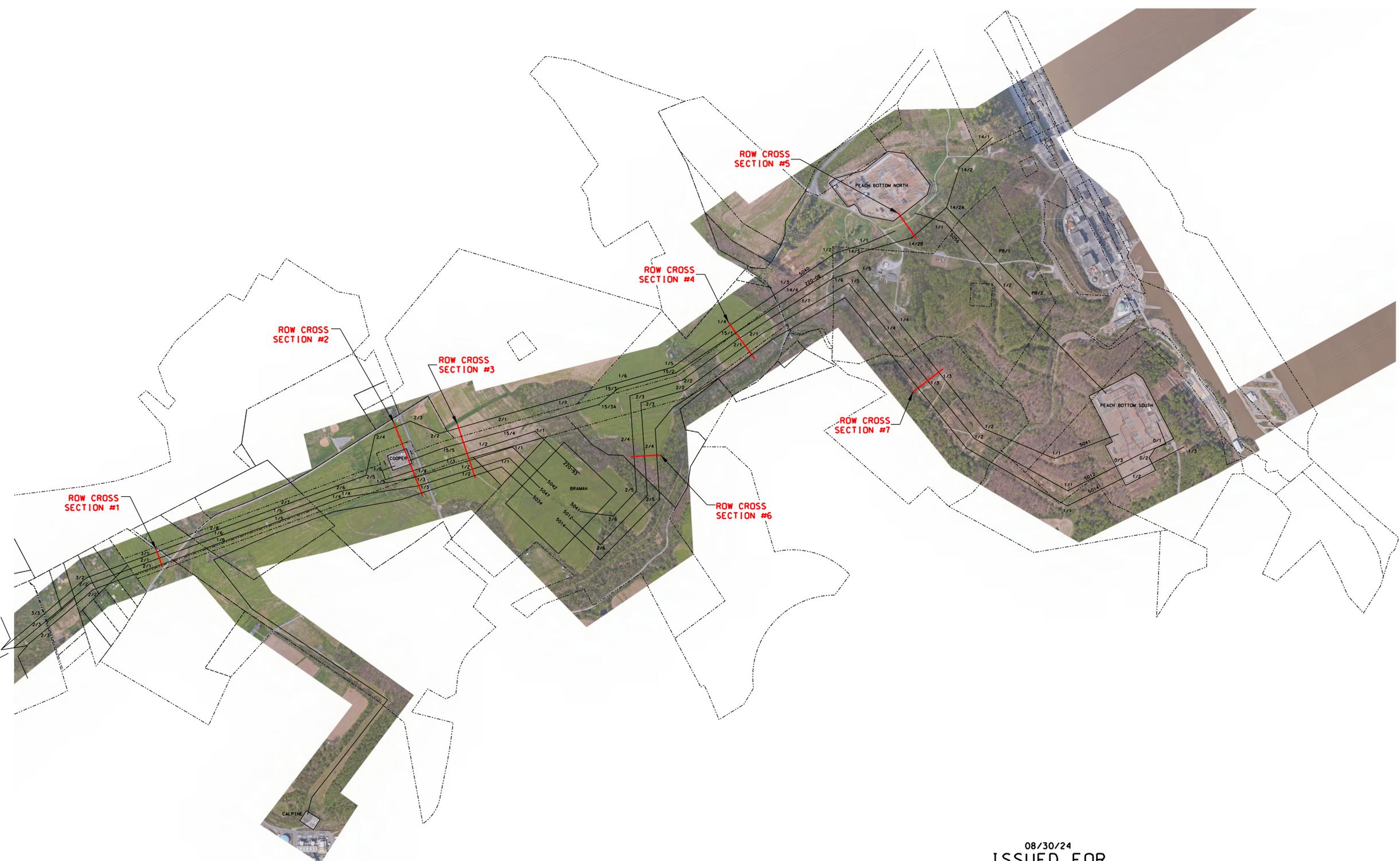
<sup>1</sup> <https://www.who.int/news-room/questions-and-answers/item/radiation-electromagnetic-fields>

National Cancer Institute

- <https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/electromagnetic-fields-fact-sheet>

**Attachment 6:**  
**Typical Cross Section of PECO Right of Way**

Attachment 6

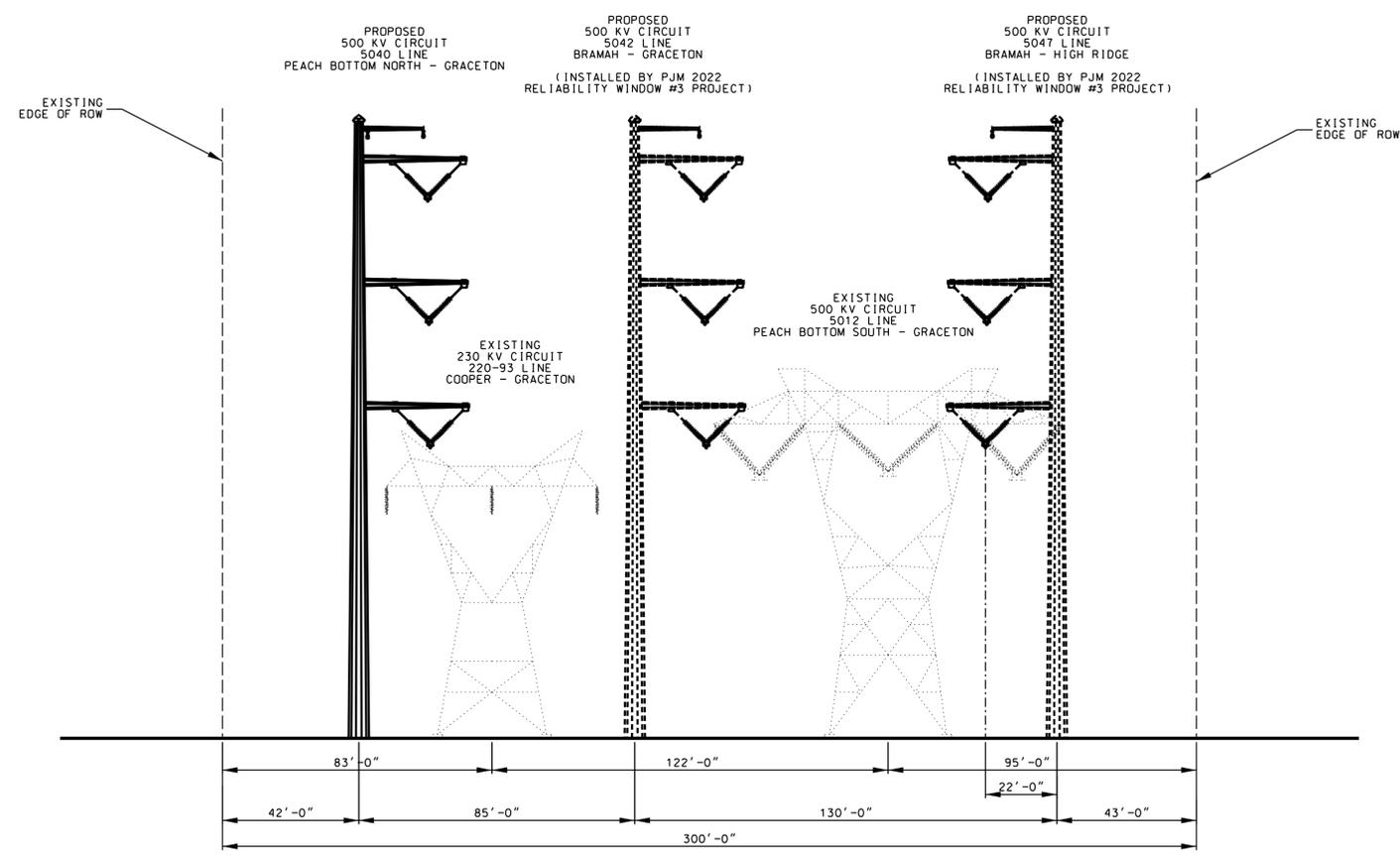


TO MD/PA BORDER

08/30/24  
ISSUED FOR  
REFERENCE

TABLE OF ADDITIONS & CHANGES USE ONLY PRINTS SHOWING LATEST DATE			
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TRANSMISSION		INDEX C-ROW1-0	
ROW CROSS SECTION KEY SHEET 230 kV & 500 kV TRANSMISSION LINES			
BRANDON SHORES RETIREMENT PECO Energy Company			
SCALE	DESIGN	CADD	CHECKED
NONE	PET	PET	PET
INSPECTED	APPROVED	DATE	
		08-30-24	
APPROVED	APPROVED		
APPROVED	APPROVED		
APPROVED	APPROVED		
SHEET 1 OF 1		C-ROW1-0-A1	



MD/PA LINE TO COOPER  
FACING NORTHEAST TOWARD PEACH BOTTOM

06/07/24  
ISSUED FOR  
REFERENCE

TABLE OF ADDITIONS & CHANGES		USE ONLY PRINTS SHOWING LATEST DATE	
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24	POWER ENGINEERS, INC.		APP'D
A206	EC-XXXXXX	ADDED: THIS DRAWING ISSUED FOR REFERENCE	REV'D
07	WO-XXXXXXX		CHK'D
24	POWER ENGINEERS, INC.		APP'D

TRANSMISSION		INDEX C-ROW1-1	
ROW CROSS SECTION 1 MD/PA LINE TO COOPER 500 KV TRANSMISSION LINES			
BRANDON SHORES RETIREMENT PECO Energy Company			
SCALE	DESIGN	CADD	CHECKED
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INSPECTED	APPROVED	DATE	
		05-10-24	
APPROVED	APPROVED		
APPROVED	APPROVED		
APPROVED	APPROVED		
SHEET 1 OF 1		C-ROW1-1-A2	

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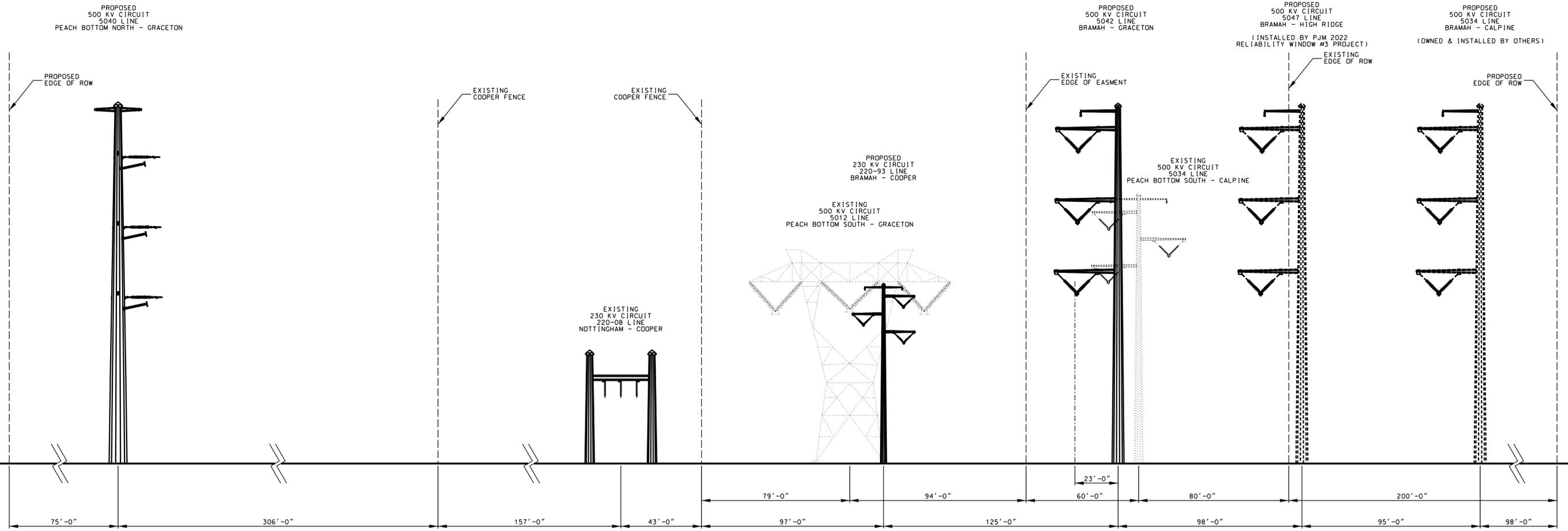
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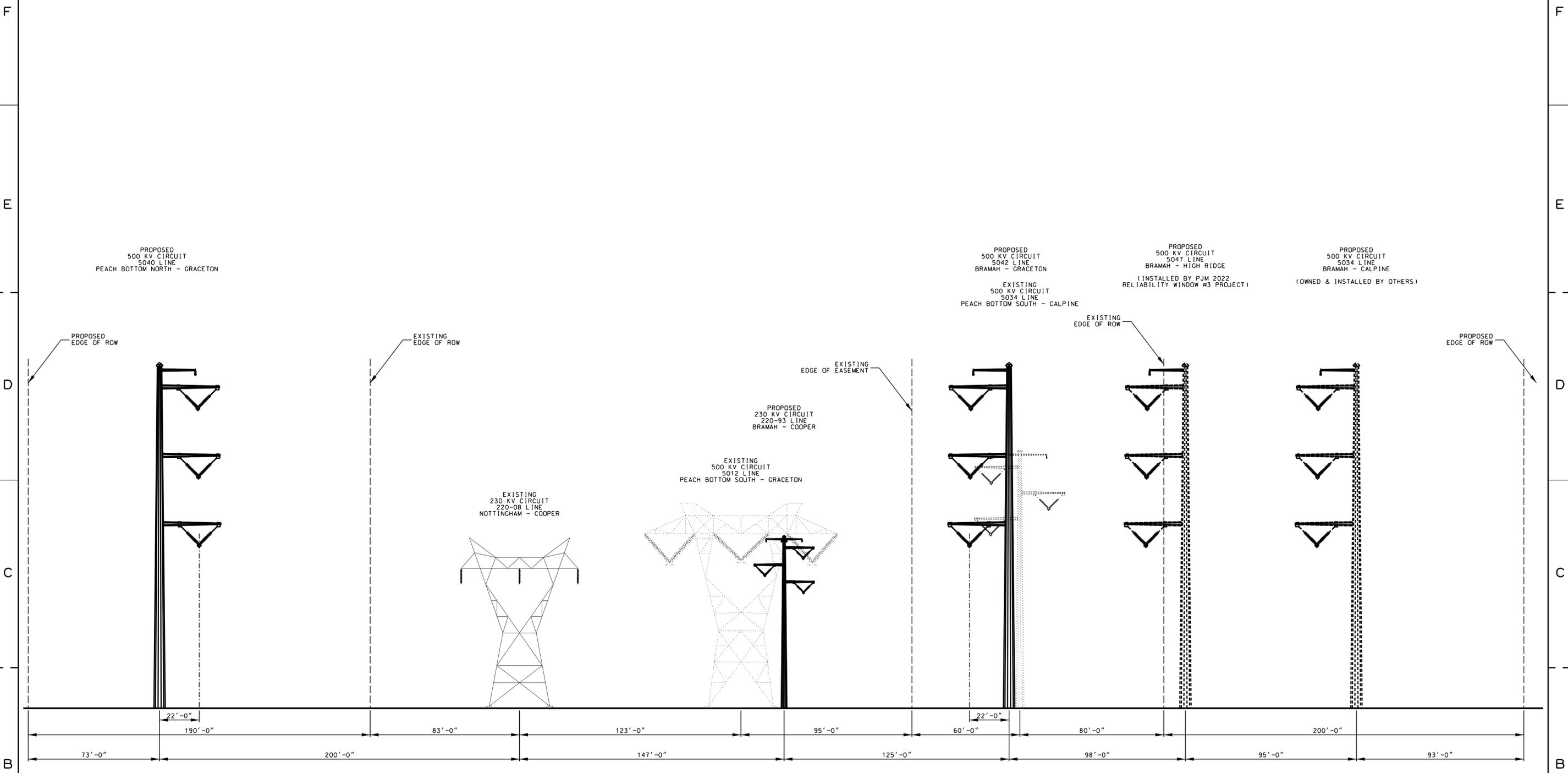


COOPER SUBSTATION  
FACING NORTHEAST TOWARD PEACH BOTTOM NORTH

06/07/24  
ISSUED FOR  
REFERENCE

TABLE OF ADDITIONS & CHANGES		REV'D	CHK'D	APP'D
USE ONLY PRINTS SHOWING LATEST DATE				
NO.	DATE	DESCRIPTION		
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24	POWER ENGINEERS, INC.		PEI	PEI
		ADDED: THIS DRAWING ISSUED FOR REFERENCE		

TRANSMISSION		INDEX C-ROW1-2	
ROW CROSS SECTION 2			
COOPER SUBSTATION			
230 kv & 500 kv TRANSMISSION LINES			
BRANDON SHORES RETIREMENT			
PECO Energy Company			
SCALE	DESIGN	CADD	CHECKED
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INSPECTED	APPROVED	DATE	
		05-10-24	
APPROVED		APPROVED	
APPROVED		APPROVED	
APPROVED		APPROVED	
SHEET 1 OF 1		C-ROW1-2-A2	



COOPER TO BRAMAH  
FACING NORTHEAST TOWARD PEACH BOTTOM NORTH

06/07/24  
ISSUED FOR  
REFERENCE

TABLE OF ADDITIONS & CHANGES USE ONLY PRINTS SHOWING LATEST DATE		TRANSMISSION		INDEX C-ROW1-3	
NO.	DATE	DESCRIPTION	SCALE	DESIGN	CADD
A105	EC-XXXXXX	ADDED: THIS DRAWING ISSUED FOR REFERENCE	NONE	PEI	PEI
10	WO-XXXXXXX				
24	POWER ENGINEERS, INC.				
A206	EC-XXXXXX	ADDED: THIS DRAWING ISSUED FOR REFERENCE			
07	WO-XXXXXXX				
24	POWER ENGINEERS, INC.				
			CHECKED	INSPECTED	APPROVED
			PEI	PEI	PEI
			DATE		
					05-10-24
			APPROVED		APPROVED
			PEI		PEI
			APPROVED		APPROVED
			PEI		PEI
			APPROVED		APPROVED
			PEI		PEI
			SHEET 1 OF 1	C-ROW1-3-A2	

F

E

D

C

B

A

PROPOSED  
500 KV CIRCUIT  
5040 LINE  
PEACH BOTTOM NORTH - GRACETON

PROPOSED  
500 KV CIRCUIT  
5041 LINE  
PEACH BOTTOM SOUTH TO BRAMAH #2  
(INSTALLED BY PJM 2022  
RELIABILITY WINDOW #3 PROJECT)

EXISTING  
500 KV CIRCUIT  
5034 LINE  
PEACH BOTTOM SOUTH TO CALPINE  
RE-DESIGNATED  
500 KV CIRCUIT  
5014 LINE  
ROCK SPRINGS TO BRAMAH  
(OWNED BY OTHERS)

PROPOSED  
EDGE OF ROW

EXISTING  
EDGE OF ROW

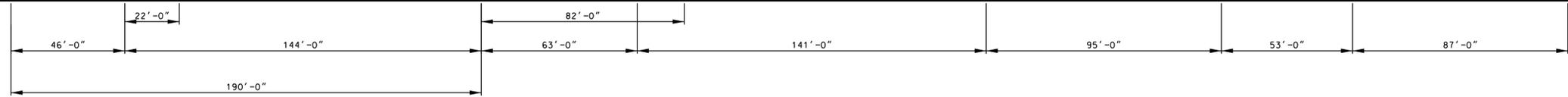
EDGE OF  
EXISTING  
EASEMENT

EXISTING  
EDGE OF ROW

PROPOSED  
230 KV CIRCUIT  
220-08 LINE  
NOTTINGHAM - COOPER

EXISTING  
230 KV CIRCUIT  
220-08 LINE  
NOTTINGHAM - COOPER

EXISTING  
500 KV CIRCUIT  
5012 LINE  
PEACH BOTTOM SOUTH - GRACETON



BRAMAH TO PEACH BOTTOM NORTH  
FACING NORTHEAST TOWARD PEACH BOTTOM NORTH

07/26/24  
ISSUED FOR  
REFERENCE

A307	EC-XXXXXX	PE	PE	PE
26	WO-XXXXXXXX	PE	PE	PE
24	POWER ENGINEERS, INC.	PE	PE	PE
	ADDED: THIS DRAWING	PE	PE	PE
	ISSUED FOR REFERENCE	PE	PE	PE

TABLE OF ADDITIONS & CHANGES	
USE ONLY PRINTS SHOWING LATEST DATE	
NO.	DESCRIPTION
A105	EC-XXXXXX
10	WO-XXXXXXXX
24	POWER ENGINEERS, INC.
	ADDED: THIS DRAWING
	ISSUED FOR REFERENCE
A206	EC-XXXXXX
07	WO-XXXXXXXX
24	POWER ENGINEERS, INC.
	ADDED: THIS DRAWING
	ISSUED FOR REFERENCE

TRANSMISSION		INDEX C-ROW1-4	
ROW CROSS SECTION 4			
BRAMAH TO PEACH BOTTOM NORTH			
230 KV & 500 KV TRANSMISSION LINES			
BRANDON SHORES RETIREMENT			
PECO Energy Company			
SCALE	DESIGN	CADD	CHECKED
NONE	PEI	PEI	PEI
INSPECTED	APPROVED	DATE	
		05-10-24	
APPROVED		APPROVED	
APPROVED		APPROVED	
APPROVED		APPROVED	
SHEET 1 OF 1		C-ROW1-4-A3	

F F

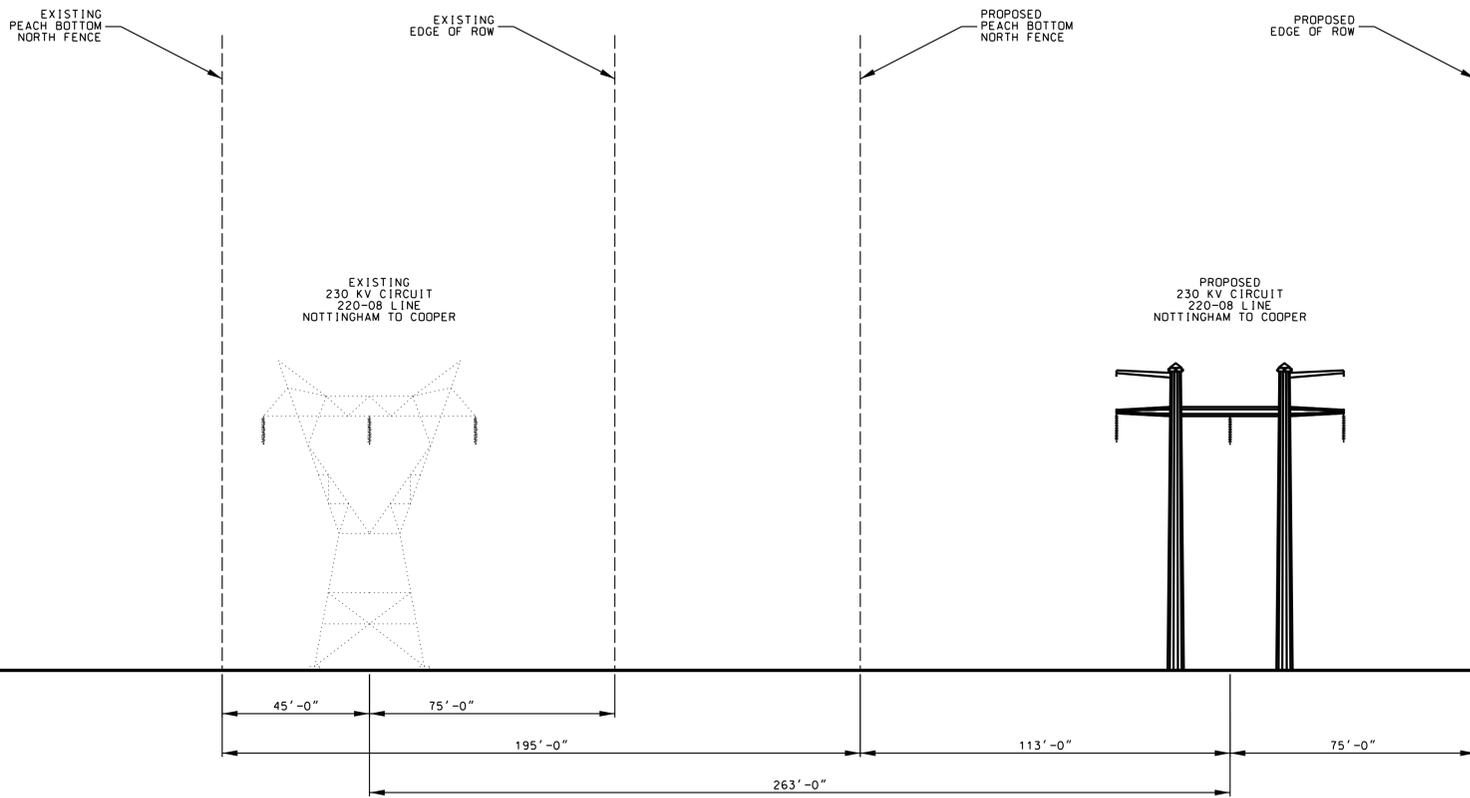
E E

D D

C C

B B

A A



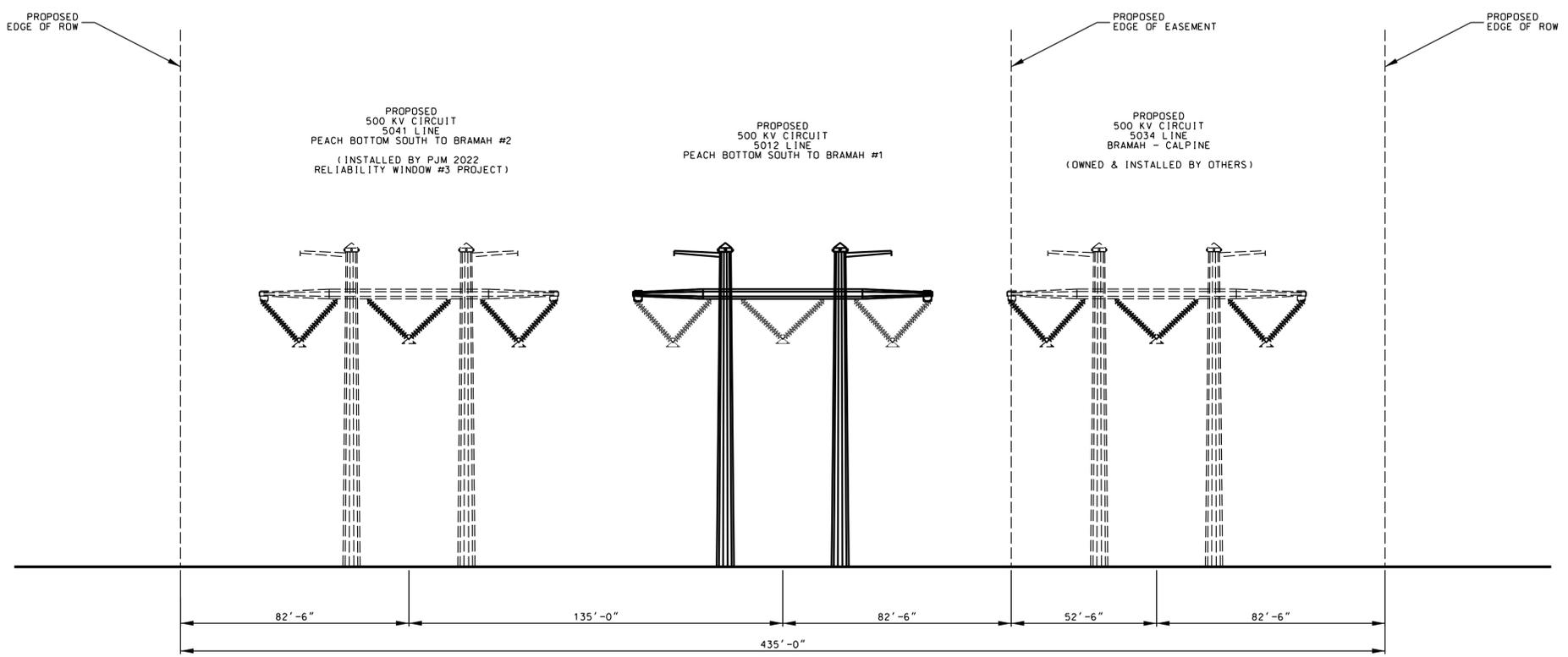
PEACH BOTTOM NORTH SUBSTATION  
FACING NORTHEAST TOWARD NOTTINGHAM

07/26/24  
ISSUED FOR  
REFERENCE

A307	EC-XXXXXX	PE	PE	PE	PE
26	WO-XXXXXXXX	PE	PE	PE	PE
24	POWER ENGINEERS, INC.	PE	PE	PE	PE
	ADDED: THIS DRAWING	PE	PE	PE	PE
	ISSUED FOR REFERENCE	PE	PE	PE	PE

TABLE OF ADDITIONS & CHANGES		REV'D	CHK'D	APP'D
NO.	DATE	DESCRIPTION	PE	PE
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10	WO-XXXXXXXX	PE	PE	PE
24	POWER ENGINEERS, INC.	PE	PE	PE
	ADDED: THIS DRAWING	PE	PE	PE
	ISSUED FOR REFERENCE	PE	PE	PE
A206	EC-XXXXXX	PE	PE	PE
07	WO-XXXXXXXX	PE	PE	PE
24	POWER ENGINEERS, INC.	PE	PE	PE
	ADDED: THIS DRAWING	PE	PE	PE
	ISSUED FOR REFERENCE	PE	PE	PE

TRANSMISSION		INDEX C-ROW1-5	
ROW CROSS SECTION 5			
PEACH BOTTOM NORTH SUBSTATION			
230 KV TRANSMISSION LINE			
BRANDON SHORES RETIREMENT			
PECO Energy Company			
SCALE	DESIGN	CADD	CHECKED
NONE	PEI	PEI	PEI
INSPECTED	APPROVED	DATE	
		05-10-24	
APPROVED		APPROVED	
APPROVED		APPROVED	
APPROVED		APPROVED	
SHEET 1 OF 1		C-ROW1-5-A3	



TIE INTO BRAMAH FACING NORTH TOWARD PEACH BOTTOM NORTH

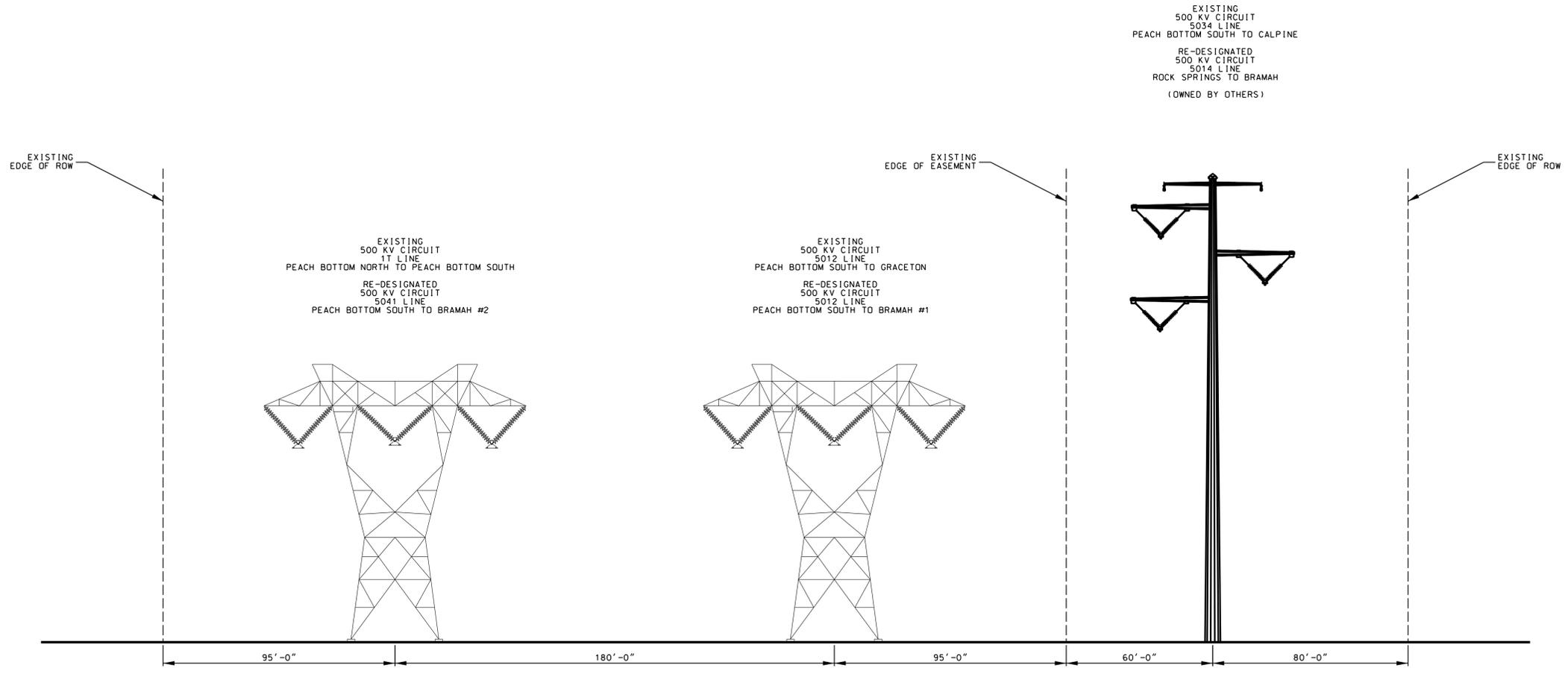
08/30/24 ISSUED FOR REFERENCE

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TABLE OF ADDITIONS & CHANGES		REV'D	CHK'D	APP'D
NO.	DATE	DESCRIPTION	PEI	PEI
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10	WO-XXXXXXX			
24	POWER ENGINEERS, INC.			
	ADDED: THIS DRAWING ISSUED FOR REFERENCE			
A206	EC-XXXXXX			
07	WO-XXXXXXX			
24	POWER ENGINEERS, INC.			
	ADDED: THIS DRAWING ISSUED FOR REFERENCE			

TRANSMISSION		INDEX C-ROW1-6	
ROW CROSS SECTION 6			
TIE IN BRAMAH			
500 KV TRANSMISSION LINES			
BRANDON SHORES RETIREMENT			
PECO Energy Company			
SCALE	DESIGN	CADD	CHECKED
NONE	PEI	PEI	PEI
INSPECTED	APPROVED	DATE	
		05-10-24	
APPROVED		APPROVED	
APPROVED		APPROVED	
APPROVED		APPROVED	
SHEET 1 OF 1		C-ROW1-6-A3	

EC-000000



PEACH BOTTOM NORTH TO PEACH BOTTOM SOUTH  
 FACING SOUTHEAST TOWARD PEACH BOTTOM SOUTH

06/07/24  
 ISSUED FOR  
 REFERENCE

TABLE OF ADDITIONS & CHANGES USE ONLY PRINTS SHOWING LATEST DATE		TRANSMISSION		INDEX C-ROW1-7	
NO.	DATE	DESCRIPTION	REV'D	CHK'D	APP'D
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10		WO-XXXXXXX			
24		POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE			
A206		EC-XXXXXX			
07		WO-XXXXXXX			
24		POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE			
SCALE			DESIGN	CADD	CHECKED
NONE			PEI	PEI	PEI
INSPECTED			APPROVED	DATE	
APPROVED _____			APPROVED _____	05-10-24	
APPROVED _____			APPROVED _____		
APPROVED _____			APPROVED _____		
SHEET 1 OF 1			C-ROW1-7-A2		

**Attachment 7:**  
**Depiction of General Layout of Existing  
Transmission Corridor**



**Legend**

- EXISTING STRUCTURE
- EXISTING TRANSMISSION LINE
- ▭ PECO FEE OWNED PROPERTY
- - - STATE BOUNDARY
- - - COUNTY BOUNDARY
- - - MUNICIPAL BOUNDARY

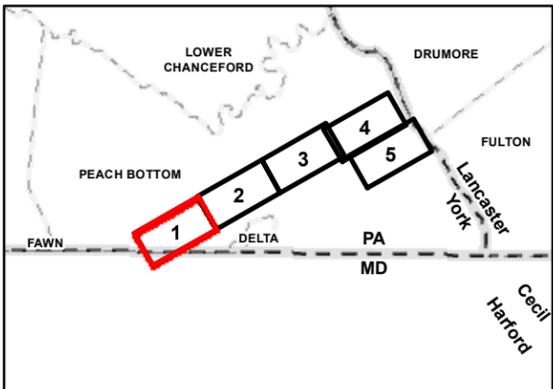
**NOTES:**

3. EXISTING STRUCTURES AND CENTERLINES WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 2, 2024.  
 4. EASEMENT DATA WAS PROVIDED BY PECO/RETTEW ASSOCIATES, INC. SEPTEMBER 9, 2024.

**REFERENCES:**  
 STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
 Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco** **AECOM**  
 AN EXELON COMPANY

**Attachment 7**  
**Depiction of General Layout of Existing Transmission Corridor**  
**Brandon Shores Retirement Mitigation Project**  
 Peach Bottom Township, York County  
 Pennsylvania  
 PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 9/10/2024



**Legend**

- ▣ EXISTING STRUCTURE
- EXISTING TRANSMISSION LINE
- ▭ PECO FEE OWNED PROPERTY
- ▭ STATE BOUNDARY
- ▭ COUNTY BOUNDARY
- ▭ MUNICIPAL BOUNDARY

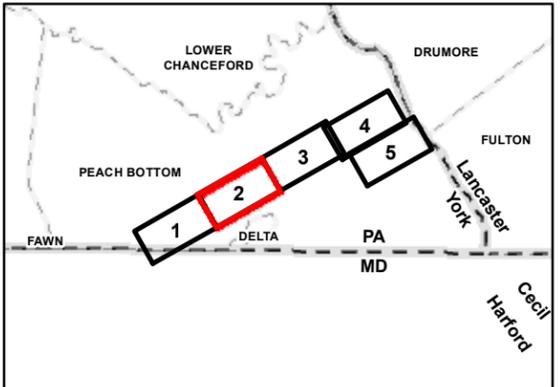
**NOTES:**

3. EXISTING STRUCTURES AND CENTERLINES WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 2, 2024.  
 4. EASEMENT DATA WAS PROVIDED BY PECO/RETTEW ASSOCIATES, INC. SEPTEMBER 9, 2024.

**REFERENCES:**  
 STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
 Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco** **AECOM**  
 AN EXELON COMPANY

**Attachment 7**  
**Depiction of General Layout of**  
**Existing Transmission Corridor**  
**Brandon Shores Retirement**  
**Mitigation Project**  
 Peach Bottom Township, York County  
 Pennsylvania  
 PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 9/10/2024



**Legend**

- ▣ EXISTING STRUCTURE
- EXISTING TRANSMISSION LINE
- EXISTING CALPINE LINE (OUT OF SCOPE)
- ▭ PECO FEE OWNED PROPERTY
- ▭ PECO ROW EASEMENT
- ▭ STATE BOUNDARY
- ▭ COUNTY BOUNDARY
- ▭ MUNICIPAL BOUNDARY

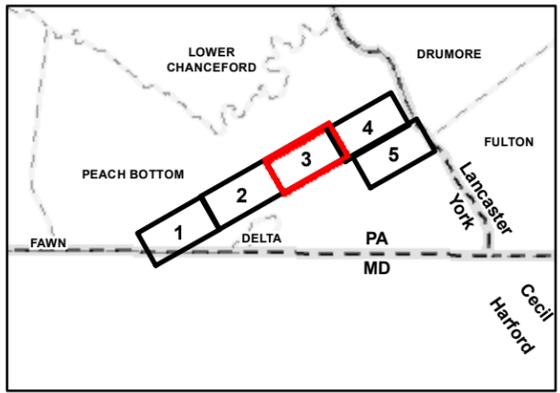
**NOTES:**

3. EXISTING STRUCTURES AND CENTERLINES WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 2, 2024.  
 4. EASEMENT DATA WAS PROVIDED BY PECO/RETTEW ASSOCIATES, INC. SEPTEMBER 9, 2024.

**REFERENCES:**  
 STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
 Feet

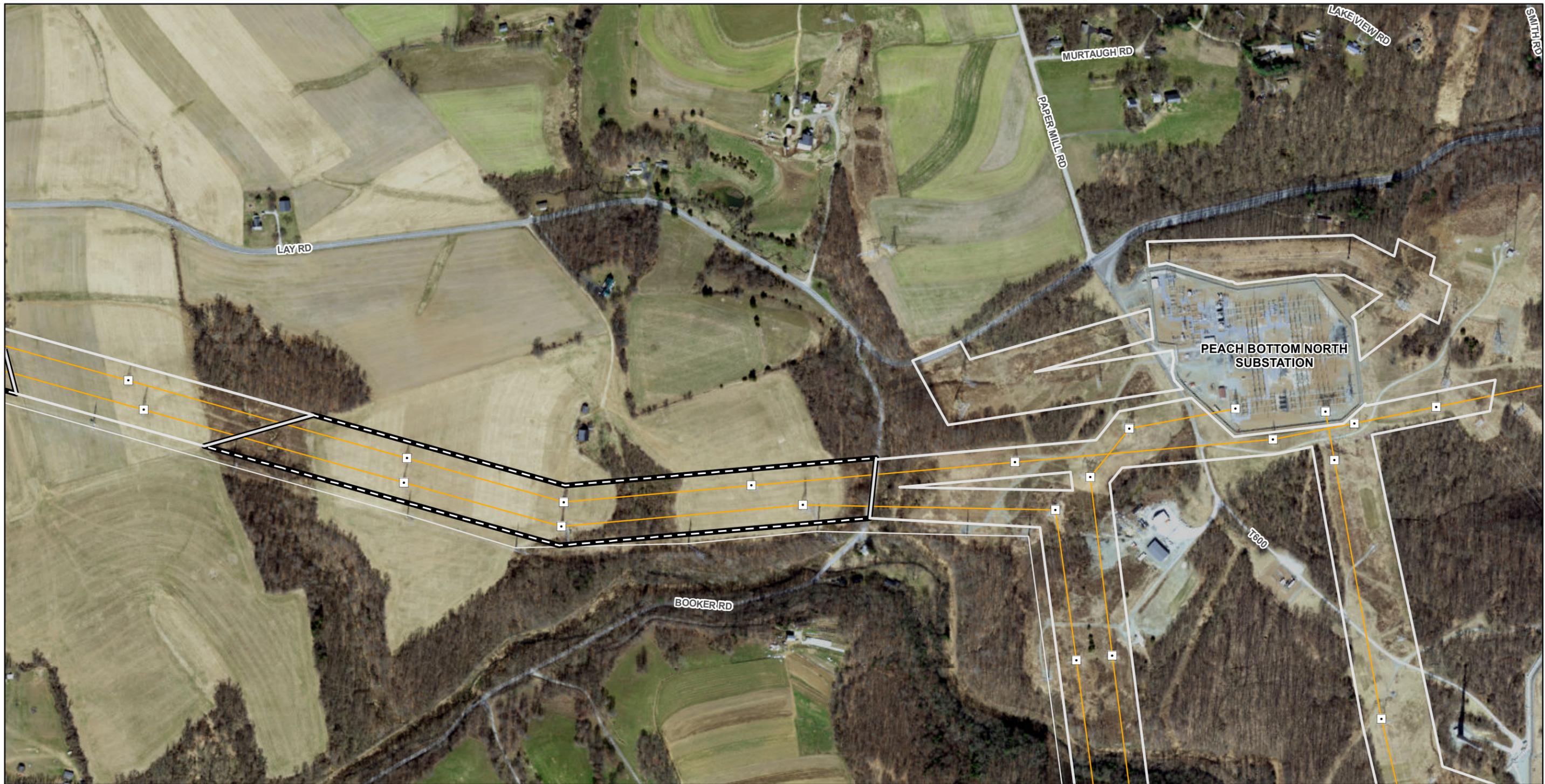
COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco** AN EXELON COMPANY **AECOM**

**Attachment 7**  
**Depiction of General Layout of Existing Transmission Corridor**  
**Brandon Shores Retirement Mitigation Project**  
 Peach Bottom Township, York County  
 Pennsylvania  
 PECO, an Exelon Company

Prepared By: BSF      Checked By: DY/RB  
 Job: 60727782      Date: 9/10/2024



**Legend**

- ▣ EXISTING STRUCTURE
- EXISTING TRANSMISSION LINE
- EXISTING CALPINE LINE (OUT OF SCOPE)
- ▭ PECO FEE OWNED PROPERTY
- ▭ PECO ROW EASEMENT
- ▭ STATE BOUNDARY
- ▭ COUNTY BOUNDARY
- ▭ MUNICIPAL BOUNDARY

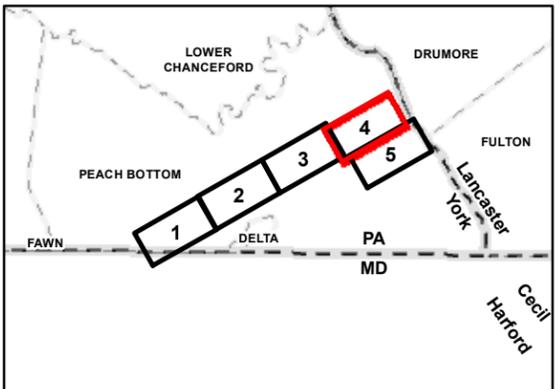
**NOTES:**

3. EXISTING STRUCTURES AND CENTERLINES WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 2, 2024.  
 4. EASEMENT DATA WAS PROVIDED BY PECO/RETTEW ASSOCIATES, INC. SEPTEMBER 9, 2024.

**REFERENCES:**  
 STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
 Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco** **AECOM**  
 AN EXELON COMPANY

**Attachment 7**  
**Depiction of General Layout of Existing Transmission Corridor**  
**Brandon Shores Retirement Mitigation Project**  
 Peach Bottom Township, York County  
 Pennsylvania  
 PECO, an Exelon Company

Prepared By: BSF      Checked By: DY/RB  
 Job: 60727782      Date: 9/10/2024



**Legend**

- EXISTING STRUCTURE
- EXISTING TRANSMISSION LINE
- EXISTING CALPINE LINE (OUT OF SCOPE)
- ▭ PECO ROW EASEMENT
- ▭ STATE BOUNDARY
- ▭ COUNTY BOUNDARY
- ▭ MUNICIPAL BOUNDARY

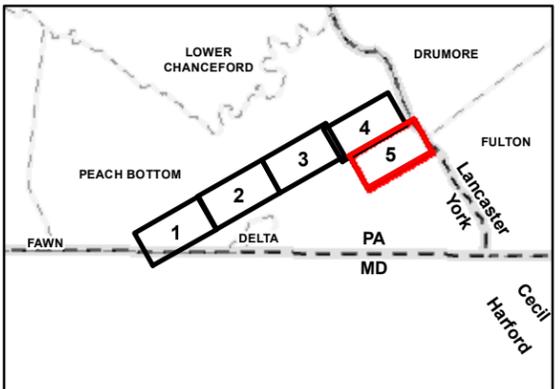
**NOTES:**

3. EXISTING STRUCTURES AND CENTERLINES WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 2, 2024.  
 4. EASEMENT DATA WAS PROVIDED BY PECO/RETTEW ASSOCIATES, INC. SEPTEMBER 9, 2024.

**REFERENCES:**  
 STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
 Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco** AN EXELON COMPANY **AECOM**

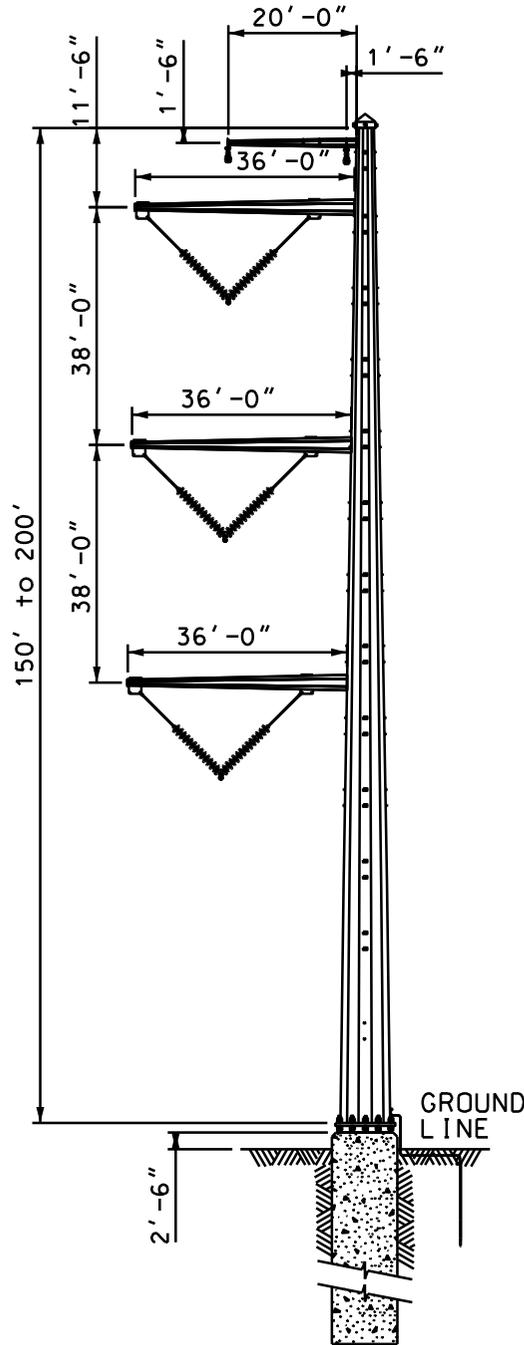
**Attachment 7**  
**Depiction of General Layout of Existing Transmission Corridor**  
**Brandon Shores Retirement Mitigation Project**  
 Peach Bottom Township, York County Pennsylvania  
 PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 9/10/2024

**Attachment 8:**  
**Typical Pole Structure Exhibits**

# Attachment 8

ROUTE ATLINEYO



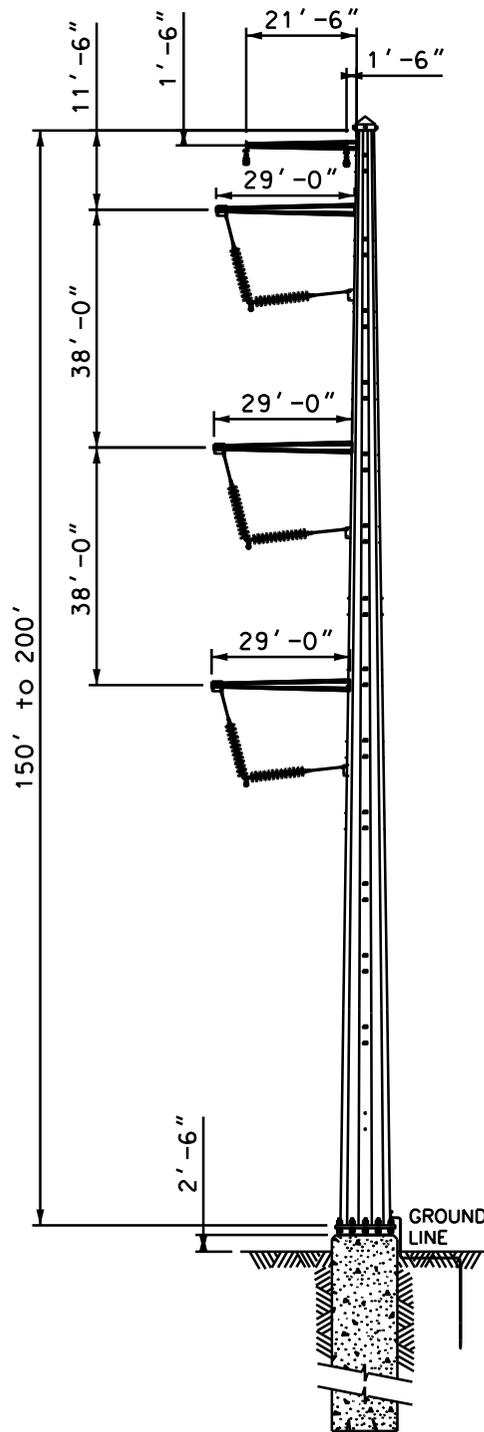
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI PEI PEI

TRANSMISSION		INDEX F-STR1-1		
SINGLE CIRCUIT STEEL TANGENT FRAMING BRANDON SHORES RETIREMENT 500KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-1-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



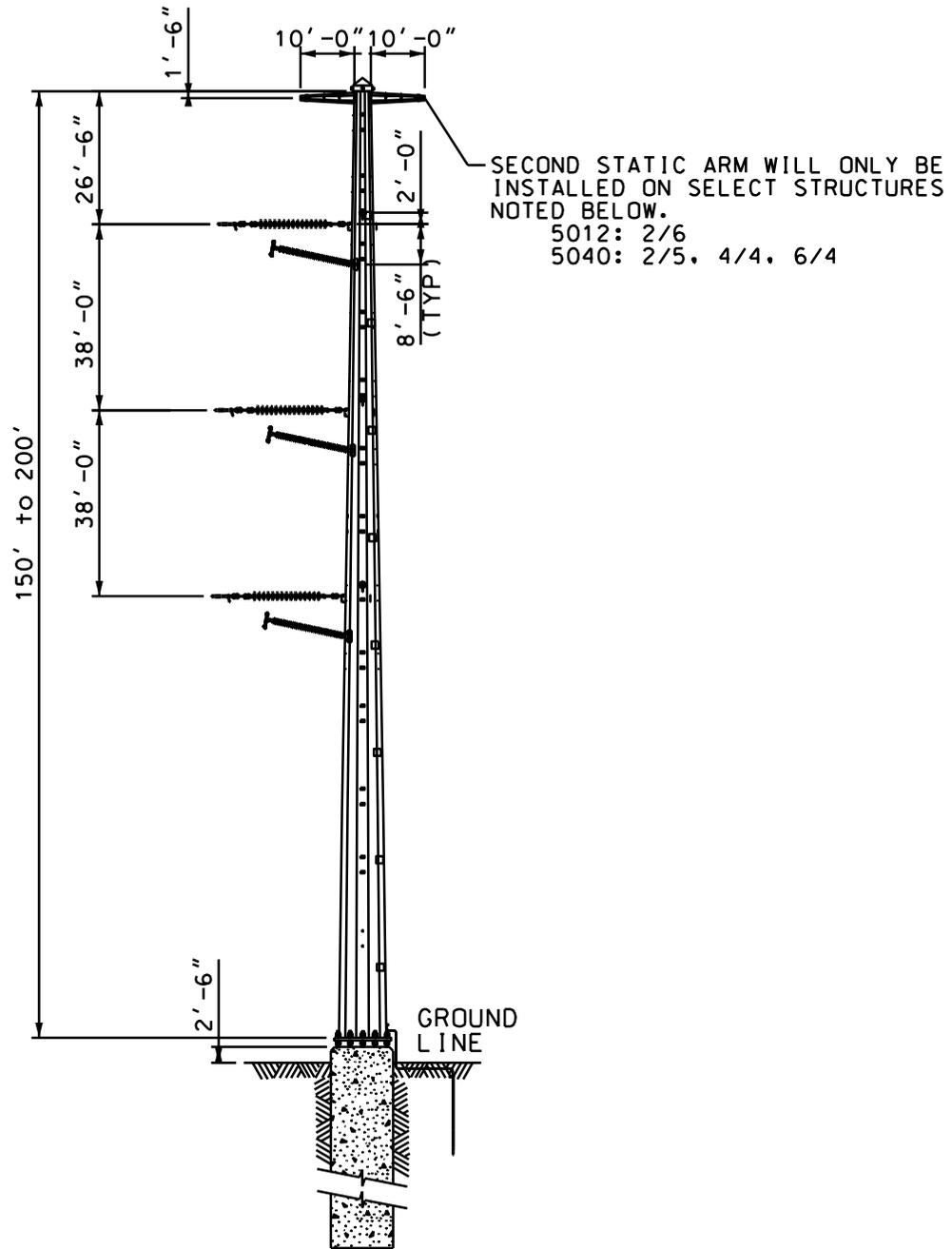
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI PEI PEI

TRANSMISSION		INDEX F-STR1-2		
SINGLE CIRCUIT STEEL RUNNING ANGLE FRAMING BRANDON SHORES RETIREMENT 500KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-2-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



A3	08	EC-XXXXXX	POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	P E I	P E I
	30	WO-XXXXXXXXXX			
	24				

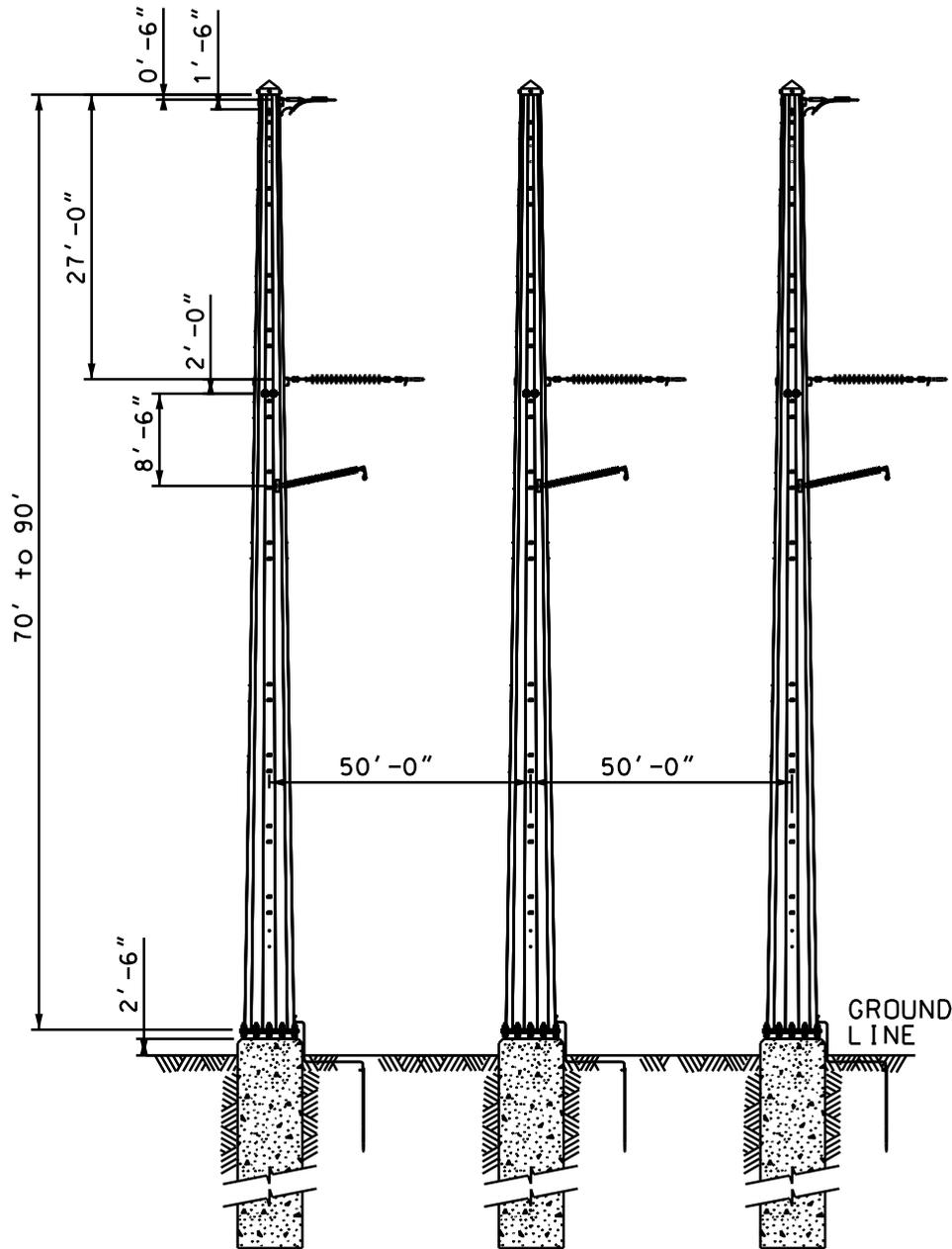
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	P E I	P E I

TRANSMISSION		INDEX F-STR1-3		
SINGLE CIRCUIT STEEL DEADEND FRAMING				
BRANDON SHORES RETIREMENT				
500KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-3-A3		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



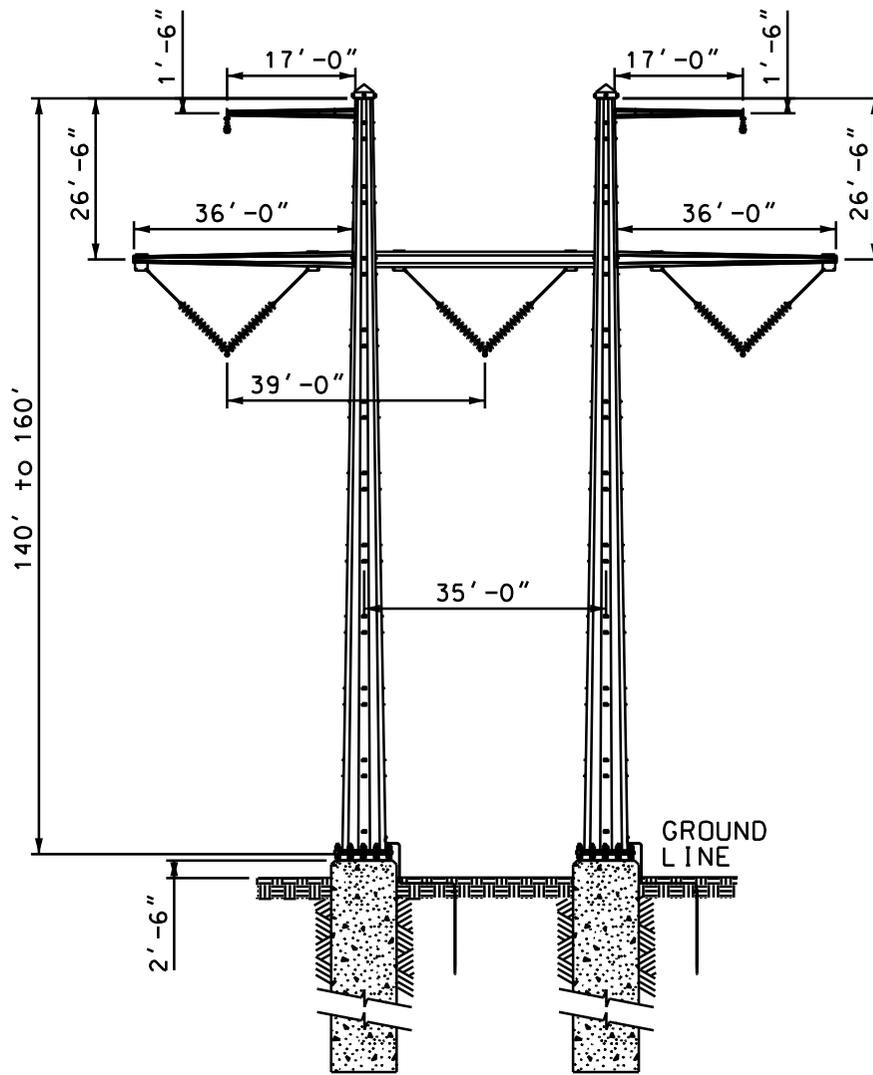
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	P E I	P E I

TRANSMISSION		INDEX F-STR1-4		
SINGLE CIRCUIT STEEL DEADEND FRAMING				
BRANDON SHORES RETIREMENT				
500KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-4-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



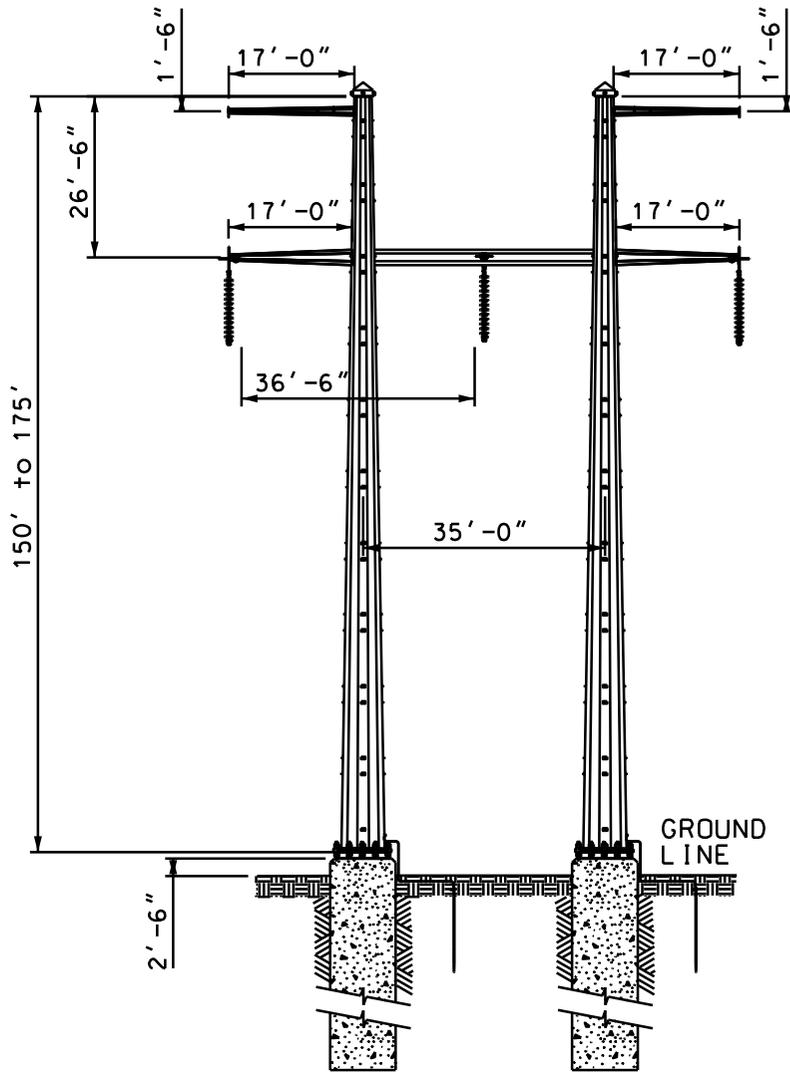
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI	PEI

TRANSMISSION		INDEX F-STR1-5		
SINGLE CIRCUIT STEEL TANGENT FRAMING BRANDON SHORES RETIREMENT 500KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-5-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



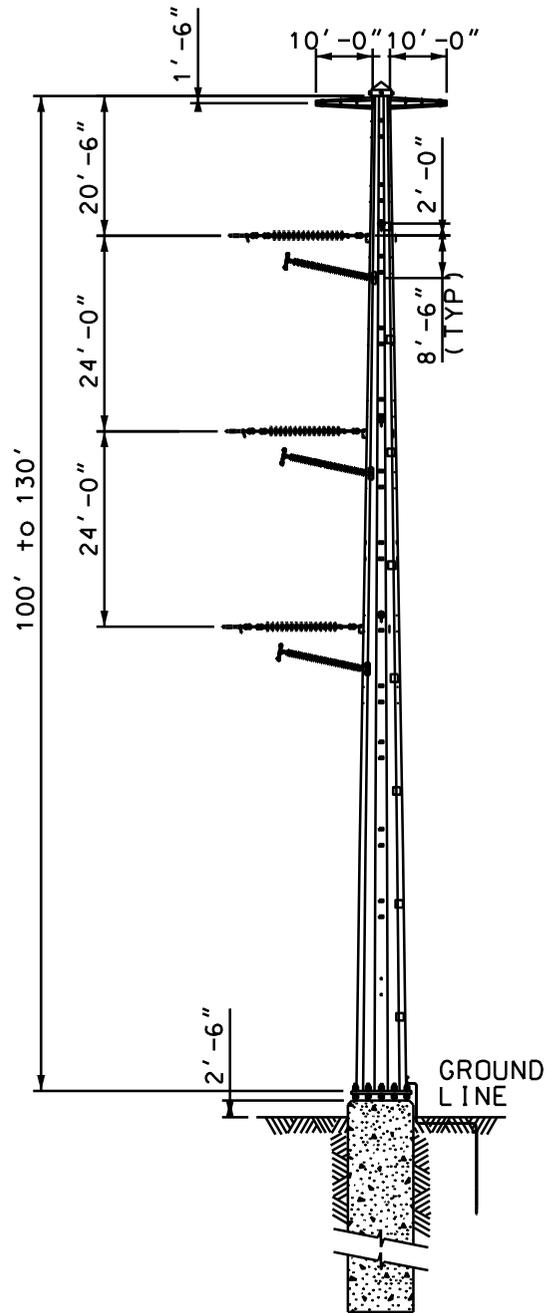
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI PEI PEI

TRANSMISSION		INDEX F-STR1-6		
SINGLE CIRCUIT STEEL DEADEND FRAMING				
BRANDON SHORES RETIREMENT				
500KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-6-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



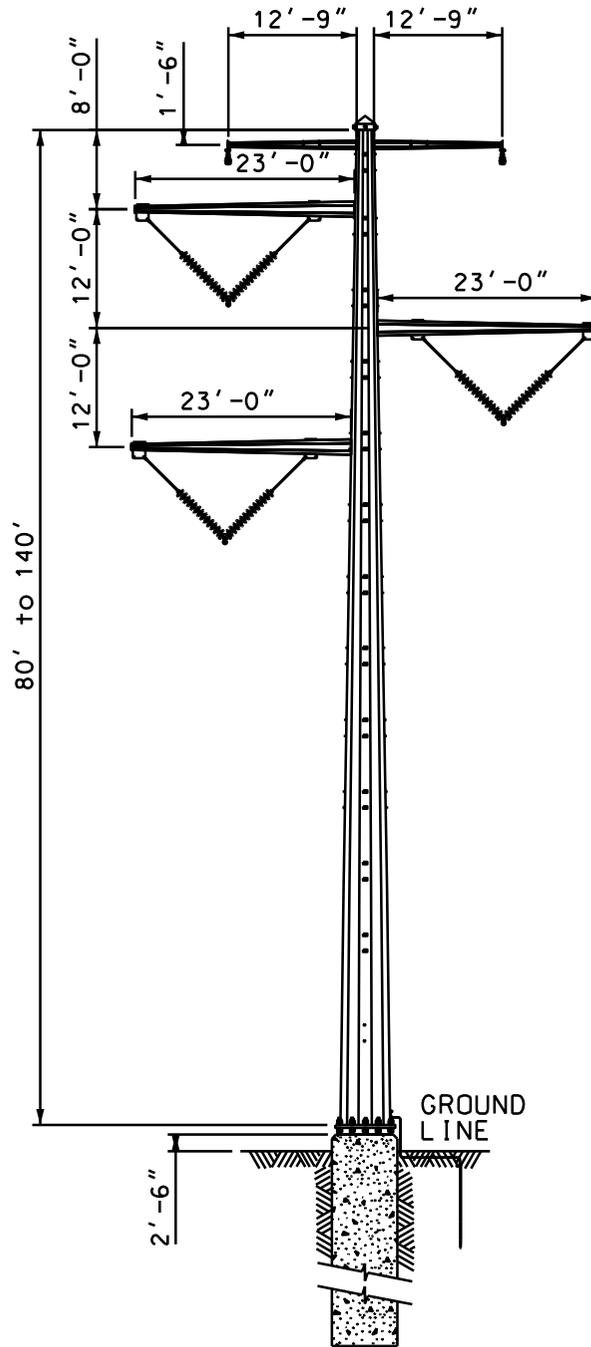
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	P E I	P E I

TRANSMISSION		INDEX F-STR1-7		
SINGLE CIRCUIT STEEL DEADEND FRAMING				
BRANDON SHORES RETIREMENT				
230KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-7-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO

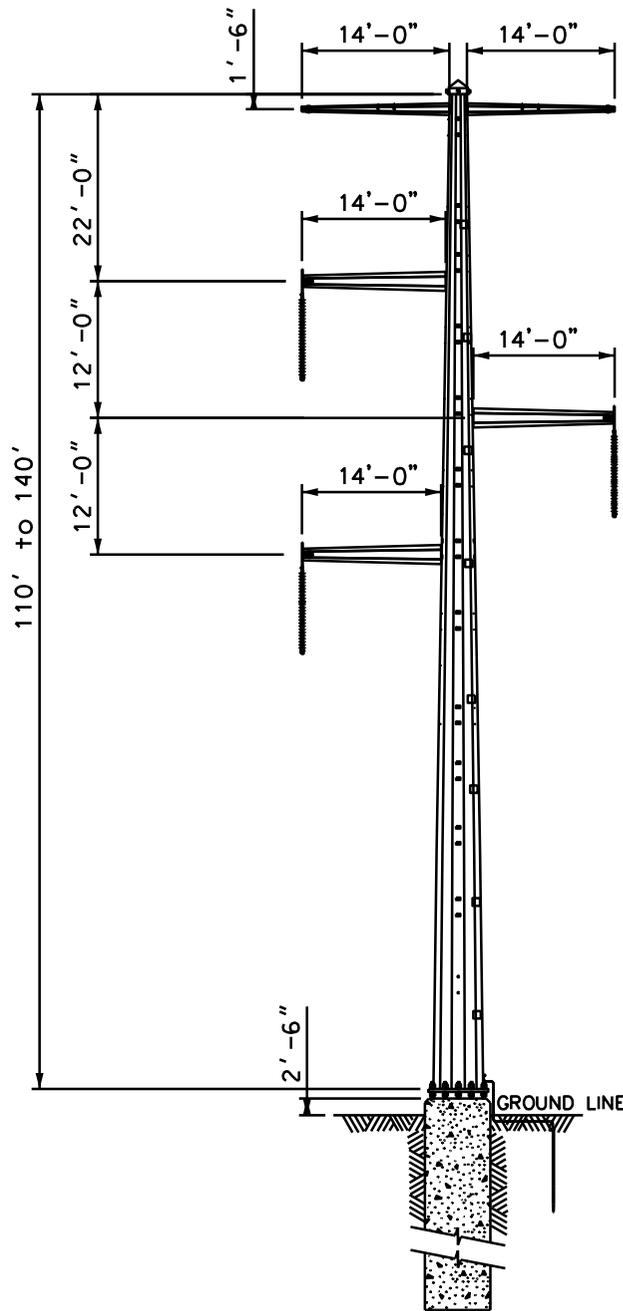


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				<b>PECO Energy Company</b>					
NO.	DATE	DESCRIPTION	CHK'D	APP'D.	DESIGN	CADD	CHECKED	INSPECTED	DATE
A1	05 10 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI	PEI	PEI	PEI	PEI		5-10-24
A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI	PEI					
				APPRD. _____					
				APPRD. _____					
				<b>F-STR1-8-A2</b>					

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



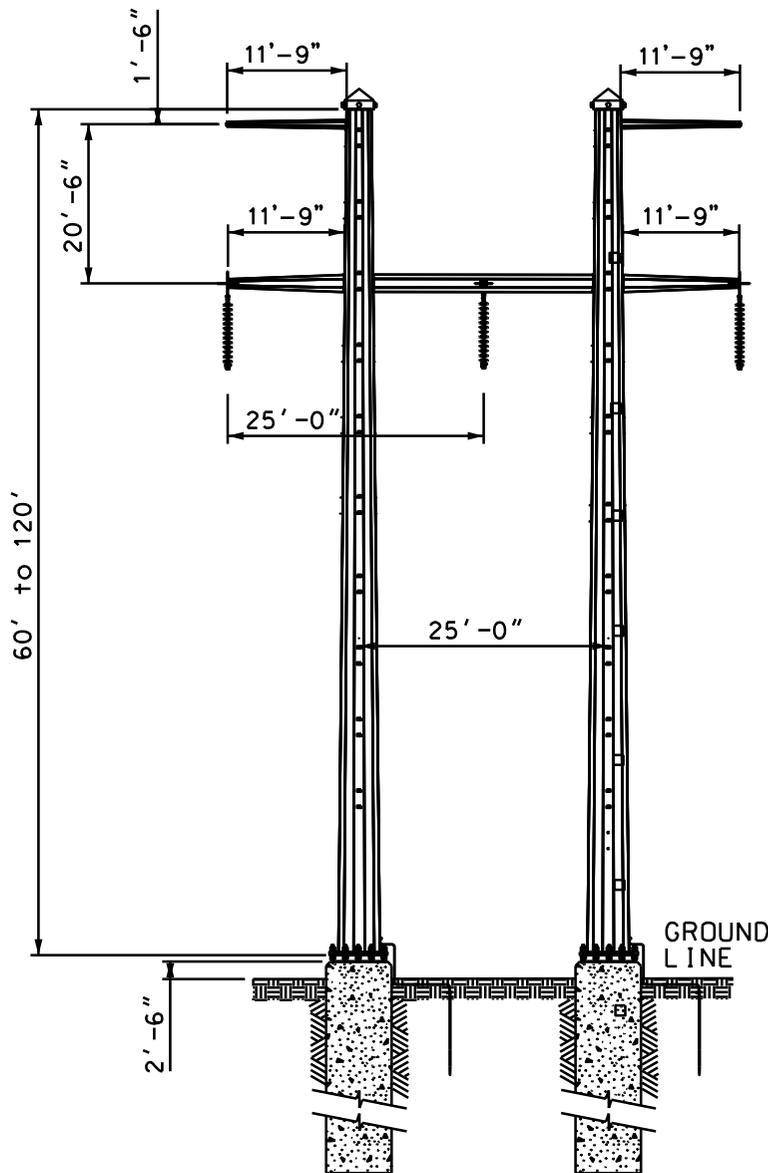
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI PEI PEI

TRANSMISSION		INDEX F-STR1-9		
SINGLE CIRCUIT STEEL DEADEND FRAMING				
BRANDON SHORES RETIREMENT				
230KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-9-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



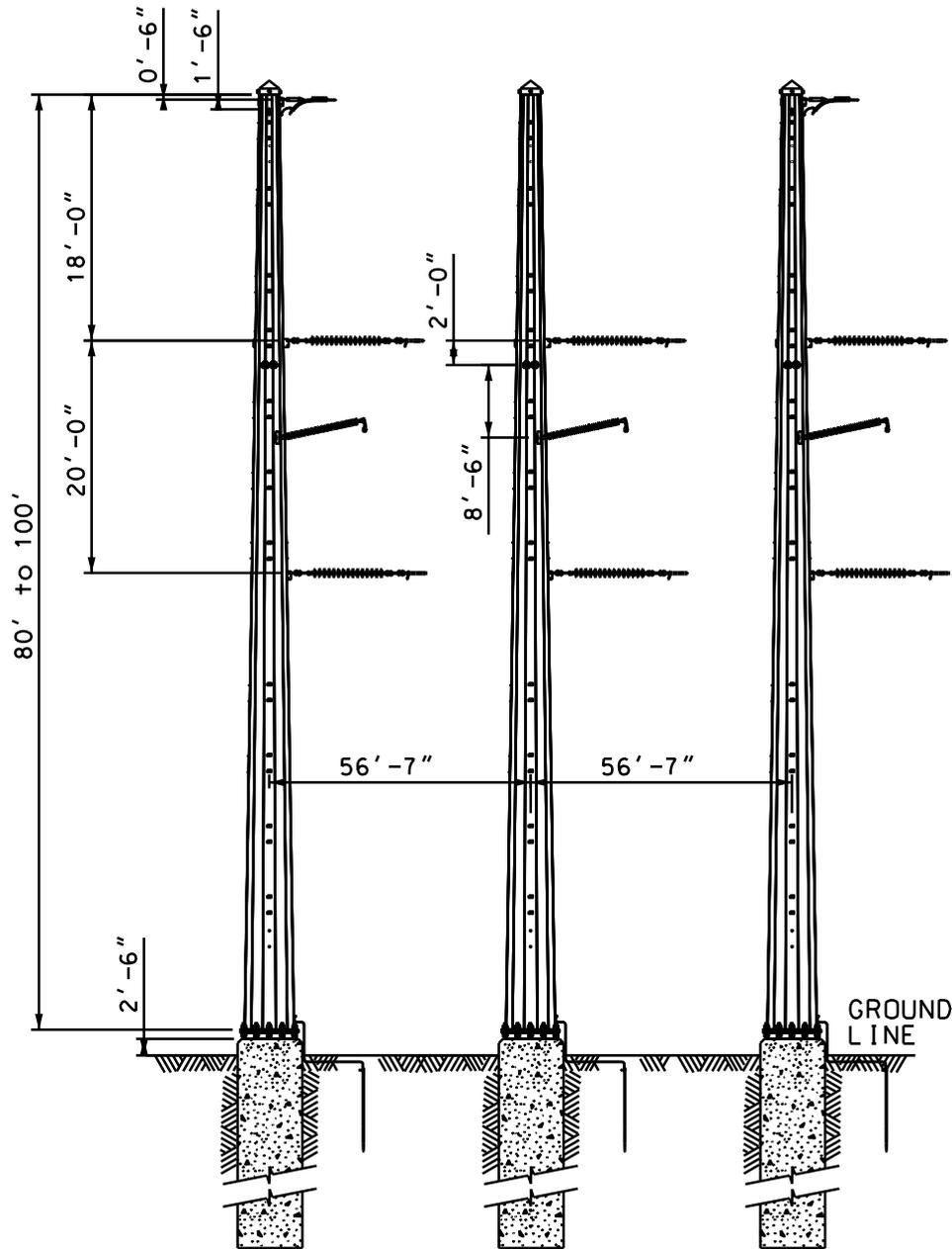
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TRANSMISSION		INDEX F-STR1-10		
SINGLE CIRCUIT STEEL TANGENT FRAMING BRANDON SHORES RETIREMENT 230KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-10-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



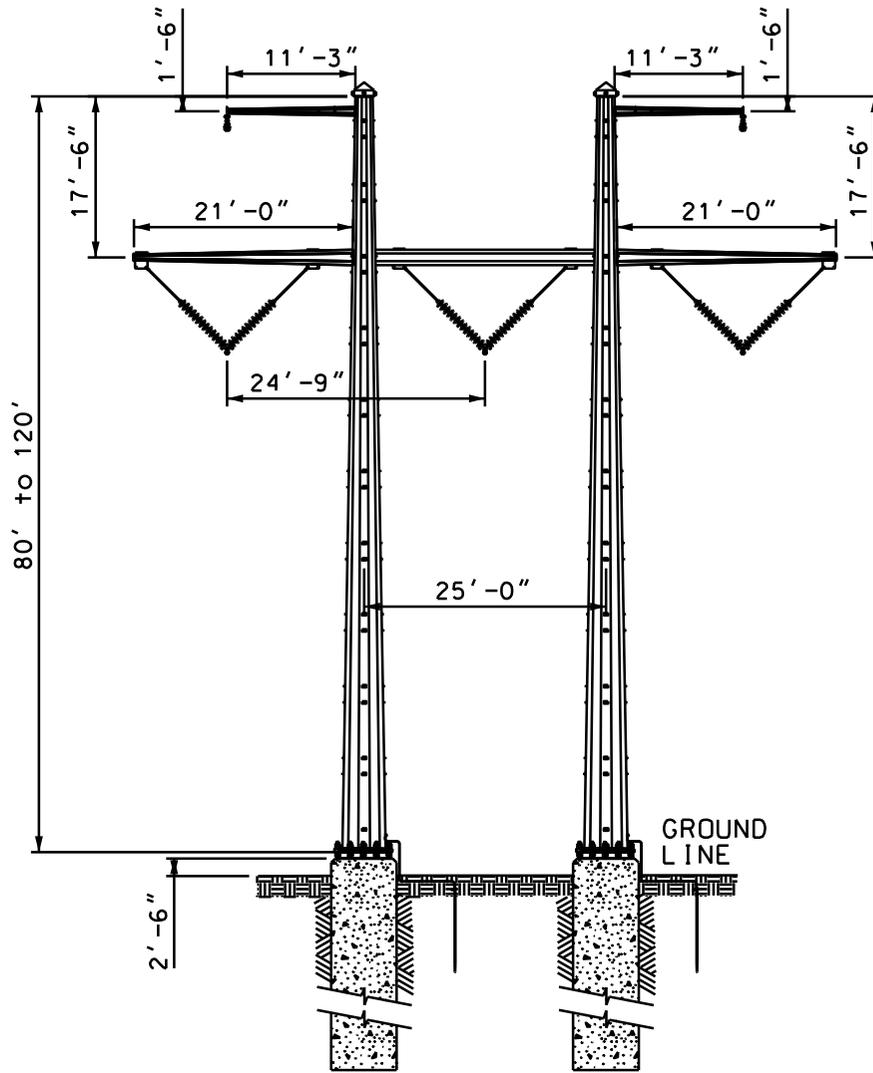
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI PEI PEI

TRANSMISSION		INDEX F-STR1-11		
SINGLE CIRCUIT STEEL DEADEND TAP FRAMING BRANDON SHORES RETIREMENT 230KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-11-A2		
APPRD. _____				

SHEET 1 OF 1

# Attachment 8

ROUTE ATLINEYO



USE LATEST REVISION			
NO.	DATE	DESCRIPTION	CH'K'D APP'D.
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A2	06 07 24	EC-XXXXXX WO-XXXXXXXXXX POWER ENGINEERS, INC. ADDED: THIS DRAWING ISSUED FOR REFERENCE	PEI PEI PEI

TRANSMISSION		INDEX F-STR1-12		
SINGLE CIRCUIT STEEL TANGENT FRAMING BRANDON SHORES RETIREMENT 230KV TRANSMISSION LINE				
PECO Energy Company				
DESIGN	CADD	CHECKED	INSPECTED	DATE
PEI	PEI	PEI		5-10-24
APPRD. _____		F-STR1-12-A2		
APPRD. _____				

SHEET 1 OF 1

**Attachment 9:**  
**EMF Calculations Graph**

**Brandon Shores Retirement Mitigation Project**

EMF Calculation Results

**Attachment 9**

ROW 1-1 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	9.7 kV/m	0.7 kV/m	9.6 kV/m	2.0 kV/m	IEEE STD C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	815 mG	445 mG	928 mG	221 mG	IEEE STD C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

**Brandon Shores Retirement Mitigation Project**

EMF Calculation Results

**Attachment 9**

ROW 1-2 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	9.4 kV/m	0.4 kV/m	9.1 kV/m	0.1 kV/m	IEEE Std C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	834 mG	193 mG	885 mG	21 mG	IEEE Std C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

**Brandon Shores Retirement Mitigation Project**

EMF Calculation Results

**Attachment 9**

ROW 1-3 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	9.4 kV/m	0.4 kV/m	9.1 kV/m	0.1 kV/m	IEEE Std C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	824 mG	219 mG	889 mG	21 mG	IEEE Std C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

# Brandon Shores Retirement Mitigation Project

## EMF Calculation Results

# Attachment 9

ROW 1-4 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	9.9 kV/m	0.5 kV/m	9.4 kV/m	0.3 kV/m	IEEE Std C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	935 mG	314 mG	885 mG	73 mG	IEEE Std C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

**Brandon Shores Retirement Mitigation Project**

EMF Calculation Results

**Attachment 9**

ROW 1-5 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	3.6 kV/m	0.7 kV/m	3.6 kV/m	0.7 kV/m	IEEE Std C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	384 mG	78 mG	386 mG	79 mG	IEEE Std C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

**Brandon Shores Retirement Mitigation Project**

EMF Calculation Results

**Attachment 9**

ROW 1-6 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	9.7 kV/m	4.0 kV/m	N/A	N/A	IEEE Std C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	739 mG	317 mG	N/A	N/A	IEEE Std C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

**Brandon Shores Retirement Mitigation Project**

EMF Calculation Results

**Attachment 9**

ROW 1-7 Results								
Calculation	CONDUCTOR TEMP	PROPOSED CONDITIONS		EXISTING CONDITIONS		INDUSTRY STD OR GUIDELINE		
		MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW	REFERENCE	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	MOT*	9.8 kV/m	2.0 kV/m	N/A	N/A	IEEE Std C95.1 ERL	10.0 kV/m	5.0 kV/m
Magnetic Field	MOT*	972 mG	148 mG	N/A	N/A	IEEE Std C95.1 ERL	9,040 mG	

NOTE: EMF calculations account for the final configurations of all transmission lines associated with the Brandon Shores Retirement Mitigation and PJM 2022 Reliability Window #3 Projects. Both projects must be included in the calculations as all lines in the corridor affect the results.

\* "MOT" means Maximum Operating Temperature

**Attachment 10:**  
**Environmental Setting**

# Brandon Shores Retirement Mitigation Project

## ENVIRONMENTAL SETTING

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**LIST OF ACRONYMS**

Acronym	Definition
ACE	Agricultural Conservation Easement
APLIC	Avian Power Line Interaction Committee
ASA	Agricultural Security Area
CWF	Cold Water Fishes
FEMA	Federal Emergency Management Agency
FNLT	Farm and Natural Lands Trust
GIS	Geographic Information Systems
IBA	Important Bird Area
HUC	Hydrologic Unit Code
kV	Kilovolt
MBTA	Migratory Bird Treaty Act
MF	Migratory Fishery
NAI	Natural Areas Inventory
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWPS	National Wilderness Preservation System
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PA-SHARE	Pennsylvania State Historic and Archeological Resource Exchange
PECO	PECO, an Exelon Company
PEM	Palustrine Emergent
PFBC	Pennsylvania Fish and Boat Commission
PFO	Palustrine Forested
PHMC	Pennsylvania Historical and Museum Commission
PJM	PJM Interconnection, L.L.C.
PNDI	Pennsylvania Natural Diversity Inventory
PNHP	Pennsylvania Natural Heritage Program
POTC	Pennsylvania Ornithological Technical Committee
Project	Brandon Shores Retirement Mitigation Project

Acronym	Definition
PSS	Palustrine Scrub/Shrub
PUB	Palustrine Unconsolidated Bottom (pond)
PUC	Public Utility Commission
ROW	Right Of Way
RTE	Rare, Threatened, or Endangered
SR	State Route
TNC	The Nature Conservancy
TSF	Trout Stocking
UNT	Unnamed Tributary
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WWF	Warm Water Fishes
YCPC	York County Planning Commission

## 1.0 INTRODUCTION

PECO, an Exelon Company (PECO) seeks approval from the Pennsylvania Public Utility Commission (Commission or PUC) to site and construct transmission lines and related facilities associated with the proposed Brandon Shores Retirement Mitigation Project (Project). The Project is necessary to mitigate significant and widespread reliability issues that would otherwise result from the planned deactivation of the Brandon Shores Generating Station (Brandon Shores), located in Anne Arundel County, Maryland, which will have significant effects on the transmission system in the Mid-Atlantic region of the PJM Interconnection, L.L.C. (PJM) footprint, including on PECO's transmission facilities. The Project also supports mitigation of reliability concerns caused by significant load growth in other parts of PJM.

This Attachment provides background information describing the environmental setting of the Project for the siting of the proposed transmission lines in south central Pennsylvania. The purpose of this Attachment is to provide a contextual discussion of the natural environment and man-made features within and around the Project Area, which is defined as the fee-owned and right-of-way (ROW) easement areas along the Project alignment.

Information discussed in this Attachment was gathered from numerous sources, including federal, state, and local geographic information system (GIS) databases, published reports and maps, and field reconnaissance surveys. The combination of data sources within this Attachment provides a concise, yet thorough, description of the environmental setting of the Project Area. A complete list of data sources is included at the end of this Attachment.

The Project Area is entirely within Peach Bottom Township, York County, Pennsylvania (**Figure 10-1**).

## 2.0 NATURAL ENVIRONMENT OF THE PROJECT AREA

Features of the natural environment help define the opportunity and constraint areas within and around the Project Area making them an important component of a transmission line siting process. This section provides a description of the environmental setting within and around the Project Area including its physiography, geology, soils, surface waters, vegetation, wildlife habitat, and special use areas.

### 2.1 Physiographic Provinces and Terrain

Pennsylvania physiographic provinces are defined by the geomorphology, underlying bedrock geology, and the glacial signature of the landscape. The Project Area extends across one

physiographic province: the Piedmont Upland Section of the Piedmont Province (PADCNR 2023).

The Piedmont Upland Section consists of broad, rounded to flat-topped hills and shallow valleys with extremely complex folds and faults made up of mainly schist, gneiss, and quartzite with a mix of saprolite. The Piedmont Uplands contains most of the Philadelphia metro areas as well as parts of the metro areas for Baltimore and Washington D.C. This region is also spanned by the Susquehanna River, a wide shallow river predating the rise of the Appalachians that contains steep cliffs along many locations and high-gradient streams that flow into the river (Woods, A.J, Omernik, J.M., Brown, D.D. 1999).

The Project Area extends southwest from a high bluff along the western bank of the Susquehanna River toward the Pennsylvania/Maryland state border. Most of the alignment spans along the higher portions of the rolling hills that characterize the area. Several areas of steep slopes are crossed by the alignment that are attributed to the narrow and steep stream valley's that serve as headwaters for larger local tributaries to the Susquehanna River such as Scott Creek, Fishing Creek, and Muddy Creek.

## **2.2 Geologic Areas**

The geology within the Project Area can be described in terms of underlying consolidated rocks (bedrock geology) and unconsolidated deposits positioned atop the bedrock (surficial geology). Rock units that underlie the unconsolidated material date from the Lower Paleozoic era, which ranges in age from about 542 million years to about 416 million years ago. Xpc – Peters Creek Schist is the only rock unit associated with the Project Area.

The Peters Creek Schist consists of fine-grained, finely laminated, chlorite-sericite schist containing numerous thin beds of quartzite and is estimated to be 2,000 feet thick. The primary surficial unit surrounding the Project Area consists of colluvial diacetones. Other surficial deposits include structured saprolite, residual soil, alluvium, and minor upland gravels (Pazzaglia and Cleaves 1998).

## **2.3 Soil Characteristics**

The following discussion of soils is based on information provided by the U.S. Department of Agriculture/Natural Resources Conservation Service (USDA/NRCS 2024). Soils in the Piedmont Uplands Section are generally well to moderately well drained and are derived from residuum

weathered from schist. Moderately and well drained soils form as silt loams and channery silt loams on hillslopes, floodplains, drainageways, and swales.

Hydric soils are formed under wet conditions (saturation, flooding, or ponding) sufficient to develop anaerobic conditions during the growing season in the upper regions of the soil layer and support the growth of hydrophytic vegetation. Two soils within the Project Area are considered hydric soils: Codorus silt loam (Cm) and Glenville silt loam, 3 to 8 percent slopes (GdB).

Also present within this portion of the Project Area are prime farmland soils and soils of state importance, which are defined as having a combination of physical and chemical characteristics that make them optimal for producing food and feed. These soil criteria are used to determine if farms are eligible to be incorporated into the County Agricultural Conservation Easement (ACE) program (see **Section 3.1**).

Erosion potential associated with the Project will be related to clearing the vegetation and constructing the access roads and transmission structures. Following existing access roads and co-locating the new transmission line within portions of existing ROW reduces the potential for erosion and the resulting sedimentation. Erosion and sedimentation control plans will be developed that will address the construction and post-construction stormwater concerns. These plans will be reviewed and approved by the York County Conservation District and/or PADEP prior to the issuance of other required permits.

## **2.4 Hydrology**

The Project Area spans two watersheds within the Lower Susquehanna Basin. The Fishing Creek-Muddy Creek Watershed (Hydrologic Unit Code (HUC) 020503061304) encompasses the southwestern portion of the Project from the Pennsylvania/Maryland border to approximately Flintville Road. The Fishing Creek-Susquehanna River Watershed (HUC 020503061709) meets the Fishing Creek-Muddy Creek watershed near Flintville Road and extends to the east across the Susquehanna River into Lancaster County, Pennsylvania. Major streams found on the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD), as well as watershed boundaries, are illustrated in **Figure 10-2** and discussed further below.

### **2.4.1 Streams**

The Pennsylvania Code, Title 25, Chapter 93 (Pennsylvania Department of Environmental Protection [PADEP] 2017a) establishes narrative and numeric water quality criteria necessary to support a variety of protected water uses. All surface waters must be protected for aquatic life

(warm water fishes), water supply (potable, industrial, livestock, wildlife, and irrigation), and recreation (boating, fishing, water contact sports, and aesthetics). PADEP assigns all streams in the Commonwealth a *Designated Use*, which is the water use goal for a particular stream segment, whether or not it is currently attained. In contrast, a stream’s *Existing Use* is the actual attained use by the existing water quality. PADEP’s antidegradation policy requires existing uses, and the level of water quality necessary to protect existing uses, shall be maintained and protected. As such, the water quality of a stream segment with an existing use that exceeds its designated use may not be degraded below the water quality levels protective of that existing use.

Beginning at the Maryland and Pennsylvania border, the Project crosses Scotts Creek and several unnamed tributaries (UNTs) to Scotts Creek in the Fishing Creek-Muddy Creek Watershed. This stream has a Chapter 93 designated use classification of Trout Stocking (TSF) and an existing use classification of Cold Water Fishes (CWF). Also, in the Fishing Creek-Muddy Creek Watershed, the Project crosses multiple UNTs to Muddy Creek which also has a Chapter 93 designation of TSF, but no existing use classification. The northeastern portion of Project within the Fishing Creek-Susquehanna River Watershed is primarily drained by several UNTs to the Susquehanna River which have a Chapter 93 designation of Warm Water Fishes (WWF) and no existing use classification. These streams, and all streams within and around the Project Area, have a migratory fishes (MF) designation for the passage, maintenance, and propagation of migratory fish.

Additionally, within the Project Area, the Pennsylvania Fish and Boat Commission (PFBC) has indicated that Scott Creek and its tributaries, Muddy Creek and its tributaries, and the UNT to the Susquehanna River at the eastern edge of the Project and its tributaries are listed as Natural Reproduction Trout Streams. The PFBC defines Natural Reproduction trout streams as “*Streams that support naturally reproducing populations of trout but may also be stocked* (PFBC 2024a).”

#### **2.4.2 100-year Floodplains**

The areas adjacent to streams subject to inundation by a flood elevation with a 1-percent-annual-chance of being equaled or exceeded each year are known as 100-year floodplains. The Federal Emergency Management Agency (FEMA) delineates the extent of some 100-year floodplains on Flood Insurance Rate Maps. 100-year floodplain extents in the Project Area and surrounding landscape were obtained and examined. FEMA 100-year floodplain boundaries within the Project Area are limited to the area adjacent to Scott Creek.

Pennsylvania Code, Title 25, Chapter 106 defines a streams floodway as “*the channel of the watercourse and those portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year flood.* (PADEP 2017b)” A FEMA defined floodway is located along Scott Creek. The FEMA floodplains and floodways located in the Project Area are illustrated in **Figure 10-2**.

### **2.4.3 Wetlands**

The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) wetland database indicates that wetlands within and around the Project Area are primarily palustrine (i.e., non-tidal, freshwater) wetlands dominated by trees, shrubs, persistent emergent vegetation, and emergent mosses or lichens. NWI wetlands are classified in accordance with the Cowardin system (Cowardin et al. 1979), which also includes open waters (e.g., streams, ponds, lakes) as wetlands. Small stretches of NWI wetlands, primarily palustrine forested (PFO) and shrub/scrub (PSS) communities, are present in the Project Area especially adjacent to stream valleys. There are a few palustrine emergent (PEM) wetlands scattered throughout the landscape and one freshwater pond (PUB) situated in the Project Area. Multiple NWI riverine systems flow to Scott Creek, Muddy Creek, and the Susquehanna River as depicted in **Figure 10-2** (USFWS 2023).

The wetlands depicted in the NWI database are not identified or delineated in accordance with methodologies used by regulatory agencies to establish boundaries of wetlands under their jurisdiction. The NWI database was created based on the analysis of aerial photographs from the 1980s with limited ground verification and should not be considered an alternative to delineating wetlands using regulatory requirements. An official delineation of the wetlands along the length of the project right-of-way (ROW) was completed in March and April 2024 which will be required to issue environmental permits necessary for construction of the transmission lines.

### **2.5 Plant and Wildlife Habitats**

Native plant and wildlife habitats have been significantly altered within and around the Project Area due to current land uses, specifically agricultural, power generation and substation facilities, and transmission and distribution line corridor management. The few areas where potential habitat may exist are along the stream valleys that are spanned by the electric lines and have had limited affect by the agricultural use or power generation activities.

### 2.5.1 Vegetation

The Project Area lies within the Eastern Broadleaf Forest (Oceanic) ecosystem province (Bailey 1995). The climate of this province ensures a strong annual temperature cycle, with cold winters and warm summers. Precipitation is markedly greater in the summer months when evapotranspiration is great and moisture demands are high. The vegetation of the Project Area can be characterized as winter deciduous forest dominated by tall, broadleaf trees that provide a dense continuous canopy with weakly developed layers of shrubs in the understory.

The terrestrial vegetation of the Project Area is entirely within one forest type (Appalachian Oak Forest) according to Rhoads' and Block's *Trees of Pennsylvania: a complete reference guide* (Rhoads & Block 2005). The Appalachian Oak Forest is the dominant forest type in Pennsylvania; it is characterized by the presence of red oak (*Quercus rubra*), white oak (*Quercus alba*), tulip tree (*Liriodendron tulipifera*), red maple (*Acer rubrum*), and hickory trees (*Carya* species). It also generally has a dense layer of understory shrubs and trees that include maple-leaved viburnum (*Viburnum acerifolium*), shadbush (*Amelanchier arborea*), ironwood (*Carpinus caroliniana*), hophornbeam (*Ostrya virginiana*), witch-hazel (*Hamamelis virginiana*), gooseberry (*Ribes cynosbati*), and spicebush (*Lindera benzoin*) (Fike 1999).

### 2.5.2 Wildlife

Typical wildlife species found within and around the Project Area include a variety of mammals, birds, amphibians, and reptiles. Common mammals include the white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), and chipmunk (*Tamias striatus*). Bird species include robins (*Turdus migratorius*), blue jays (*Cyanocitta cristata*), red-wing blackbirds (*Agelaius phoeniceus*), and house wrens (*Troglodytes aedon*), as well as bald eagles (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), and great horned owls (*Bubo virginianus*). Common amphibians and reptiles include the northern green frog (*Rana clamitans melanota*), bullfrog (*Rana catesbeiana*), red-spotted newt (*Notophthalmus viridescens*), wood turtle (*Clemmys insculpta*), black rat snakes (*Elapha obsoleta*), and northern water snake (*Nerodia sipedon*) (Fergus and Hansen 2000).

### 2.5.3 Rare, Threatened, and Endangered Species

Based on a search of the Pennsylvania Natural Diversity Inventory (PNDI) database, administered by the Pennsylvania Natural Heritage Program (PNHP), and follow-up consultations with the USFWS, PFBC (PFBC 2024), and Pennsylvania Department of Conservation and

Natural Resources (PADCNR) (PADCNR 2024a), the following federal and/or state rare, threatened, or endangered (RTE) species could potentially occur within the Project Area:

- Bog turtle (*Glyptemys muhlenbergii*) – federally listed endangered (USFWS)
- Lobed Spleenwort (*Asplenium pinnatifidum*) – State plant species of Special Concern (PADCNR)
- Harbinger-of-spring (*Erigenia bulbosa*) – State threatened plant species (PADCNR)
- Declined Trillium (*Trillium flexipes*) – State species of concern (PADCNR)
- Nodding trillium (*Trillium cernuum*) – State species of concern (PADCNR)
- Fringe-tree (*Chionanthus virginicus*) – State species of concern (PADCNR)
- Nuttall’s tick-trefoil (*Desmodium nuttallii*) – State species of concern (PADCNR)
- Lion’s-foot (*Nabalus serpentaria*) – State species of concern (PADCNR)
- Downey Lobelia (*Lobelia puberula*) – State endangered species (PADCNR)
- Glade Spurge (*Euphorbia purpurea*) – State endangered species (PADCNR)
- Velvety panic grass (*Dichanthelium scoparium*) – State endangered species (PADCNR)
- Tawny ironweed (*Vernonia glauca*) – State endangered species (PADCNR)
- Plain Ragwort (*Packera anonyma*) – State rare species (PADCNR)
- Chesapeake Logperch (*Percina bimaculate*) – State threatened species (PFBC)
- Broad-head Skink (*Plestiodon laticeps*) - State species of concern (PFBC)

Habitat assessments and presence/absence surveys for these RTE species have been required by the jurisdictional agencies and were initiated in April 2024.

The USFWS notes that avian species protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act may use the Project area for wintering, migrating, or breeding activities. Electrocutions from power lines are of particular concern, and USFWS recommends that the proposed Project be evaluated in light of the *National Bald Eagle Management Guidelines* to determine whether or not eagles might be disturbed as a direct result of the Project. USFWS, in conjunction with the Avian Power Line Interaction Committee (APLIC), provides guidelines for power lines to minimize impacts from existing facilities and in the construction of new utility and energy systems and associated infrastructure (ALPIC 2005).

Per the PNDI, a USFWS bald eagle screening assessment will be completed for the Project to determine if bald eagles are nesting in the area and evaluate the potential impact of the Project activities on the eagles. Based on the findings of the screening assessment, specific conservation measures such as seasonal timing restrictions may need to be implemented.

## 2.6 Special Use Areas

Special use areas are places recognized by regulatory agencies or local governments as providing habitat characteristics or wildlife management opportunities that indicate a need for preservation.

Examples include scenic areas, wilderness areas, wild and scenic rivers, state and conserved lands, priority natural areas, and important bird areas (IBA).

### **2.6.1 Scenic Areas**

The PADCNr provides designations for vistas and overlooks, waterfalls, scenic hikes, and other special use areas. There are no designated scenic areas within two miles of the Project Area (PADCNr 2024b). Additionally, there are no Heritage Geology Sites designated by the PNHP within two miles of the Project Area (PADCNr 2024c).

### **2.6.2 Wilderness Areas**

No National Wilderness Preservation System (NWPS) areas are located within two miles of the Project Area (NWPS 2024).

### **2.6.3 Wild and Scenic Rivers**

No wild or scenic rivers, as designated pursuant to the federal Wild and Scenic Rivers Act or by the Pennsylvania Scenic Rivers Act, are located within or around the Project Area (National Wild and Scenic Rivers System 2024; PADCNr 2024d).

### **2.6.4 State and Conserved Lands**

The Project Area contains no state parks, state game lands, or state forests or conserved lands. Directly adjacent to the Project Area between Kilgore Road and Route 74 is a Farm and Natural Lands Trust (FNLT) of York County conservation easement. FNLT Easement #064 is a non-governmental open space and forest area that occupies approximately 130 acres of land directly north of existing PECO Fee Owned property. The exact extents and locations of these areas are depicted in **Figure 10-3**.

### **2.6.5 Priority Natural Areas**

The Natural Area Inventories (NAI) for York County, conducted by The Nature Conservancy (TNC), indicate that two Natural Areas are crossed by the Project Area. These two areas, the Peach Bottom Woods and the Atom Road Woods Natural Areas, are located in the eastern part of the Project near the Susquehanna River. Both areas consist of steep wooded slopes that support plant species of concern.

Priority Natural Areas are associated with “locations of rare, threatened, and endangered species and of the highest quality natural areas” (TNC 2004). No Priority Natural Areas are located

within or around the Project Area. Natural Areas within the Project Area are illustrated in **Figure 10-2**.

### **2.6.6 Important Bird Areas**

IBA's are "designated by the Pennsylvania Ornithological Technical Committee (POTC), as the most critical regions in the Commonwealth for conserving bird diversity and abundance and are the primary focus of Audubon Pennsylvania's conservation efforts" (Audubon 2024). Adjacent to the Project Area is the Lower Susquehanna River Gorge – Conowingo/Muddy Run IBA. 250 species of birds have been identified within the IBA, which stretches for approximately 16 miles along both sides of the Susquehanna River from the Pennsylvania/Maryland state line north to the Safe Harbor, Pennsylvania area.

Both Pennsylvania-listed and federally listed avian protected species are known to be located within the vicinity of the Project. Example species within the vicinity of the Project are the bald eagles (*Haliaeetus leucocephalus*) and the osprey (*Pandion haliaetus*). These and potentially other bird species are known to use utility transmission structures for nesting annually. PECO will implement their Avian Protection Plan for this Project to minimize impacts to protected species. Additionally, PECO is coordinating with the USFWS for protection requirements regarding the bald eagles and bald eagle nest locations within the vicinity of the Project. Coordination is currently still in progress with USFWS (See Section 2.5.3).

## **3.0 HUMAN ENVIRONMENT OF THE PROJECT AREA**

Human influences on the natural environment within and around the Project Area are represented by many development types and patterns. These are discussed below using a land use code framework (described in **Section 3.1**) that is applicable to York County.

### **3.1 Land Use**

Landcover data published by the Chesapeake Bay Program was used as the basis for characterizing land uses within the Project Area. Agricultural lands are the most prominent land use within and around the Project Area (**Figure 10-4**). The majority of the existing ROW actively involves farming activities related to row crops such as hay, corn, and soybeans. The Commonwealth of Pennsylvania has several mechanisms for protecting farmland, including:

- Agricultural Security Area (ASA)
- Agricultural Conservation Easement (ACE)
- Act 319 ("Clean and Green Act")

The state or county Agricultural Preservation Board administers the creation of an ASA and the purchase of an ACE. An ASA is an area of 500 or more semi-contiguous acres that is used for agricultural production. Farmers voluntarily form and/or join an ASA as a means of receiving special consideration regarding regulations, nuisance complaints, and conflicting land uses.

The ACE purchase program allows counties to use specific state-issued farmland preservation funds to purchase development rights. Qualifying farms must be part of an existing ASA and are rated based on soil quality, proximity to other farms, and other criteria. Once a farm is in easement, agricultural production must continue every year thereafter, with no new structures permitted except farm accessory buildings. Act 319 provides a means by which landowners whose property meets one of three qualifying uses (farming, forest, or water supply/open space) to have their property assessed, for tax purposes, on the basis of its use rather than on the basis of its fair market value. Mapped agricultural conservation easements and agricultural security areas identified within and around the Project Area are found on **Figure 10-3**.

Small pockets of residential land use are crossed by and are adjacent to the Project Area. The existing ROW crosses through an area of residential properties near Pikes Peak Road, Stone Road, and Lay Road. Several other communities also surround the Project Area including the Delta Ridge housing community to the south of the existing ROW and Bryansville which is a small village along State Route (SR) 851 that contains a series of residential properties.

Industrial land use is also present within and around the Project Area. Near the Susquehanna River, the Peach Bottom Atomic Power Station, Peach Bottom North and Peach Bottom South Substations and surrounding landscapes are considered industrial areas. Additionally, the Calpine Power Plant is a large industrial complex adjacent to the existing ROW south of the Project.

Forests are a land use/cover type that range from large uninterrupted areas of undeveloped wooded land typically associated with public service or recreational uses, to smaller forested areas associated with local residential development that often indicates the presence of steep slopes, rocky soils, or wet areas that could not be developed. Small pockets of forest are located within the Project Area but are mostly associated with industrial plots of land owned by the local utility companies. Adjacent to the Project, several residential and agricultural tracts of land contain moderately-sized, forested communities. These land uses are illustrated in **Figure 10-4**.

### **3.2 Airports**

No public or private airports are located within two miles of the Project Area.

### **3.3 Linear Features**

Linear features present in or around the Project Area include roadways, pipelines, and existing transmission corridors, as illustrated in **Figure 10-1**.

#### **3.3.1 Roadways and Railroads**

The primary roadway within the Project Area is Delta Road - SR 74. Other primary roadways within and adjacent to the Project Area are Paper Mill Road – SR 2024, Lay Road – SR 2104, Broad Street – SR 2045, and Line Road – SR 2028. No active railroads are present within the Project Area.

#### **3.3.2 Transmission Line Corridors**

Power transmission corridors located within the Project Area primarily consist of 230 kV and 500 kV lines that are owned by PECO. Transmission lines within the Project Area include two lines that originate in Maryland and cross the Maryland/Pennsylvania border to connect to the Peach Bottom Substations. Several other lines cross the Susquehanna River and continue into Lancaster County with a few others running north along the river towards the greater Harrisburg area. The Calpine Power Plant also has an existing 500 kV transmission line that extends northeast from the power plant to the Peach Bottom South Substation. Portions of this line are located within the Project Area.

### **3.4 Historic, Cultural, and Archaeological Resources**

A review of cultural resources within and around the Project Area is required by various state agencies to ensure their preservation. A desktop survey of existing historic structures and archaeological resources within the Project Area was conducted by accessing the Pennsylvania Historical and Museum Commission’s (PHMC) Pennsylvania State Historic and Archeological Resource Exchange (PA-SHARE) to review available information on historic structures, archaeological surveys, and previously recorded archaeological sites. This was accomplished by importing a GIS polygon approximating the limits of the Project Area into the PA-SHARE interactive web map to capture all data contained within that polygon in the form of GIS data layers (PHMC 2024a).

The review concluded no NRHP-listed or -eligible archaeological sites are located within 2-miles of the Project corridor. This review did identify several NRHP-listed or -eligible historic districts, bridges and buildings located within 2-miles of the Project including:

- Delta Historic District, which covers most of Delta Borough.

- Coulsonstown Cottage Historic District located off of Ridge Road south of Delta.
- Muddy Creek Bridge, a railroad crossing of Muddy Creek located north of Delta.
- Delta Trestle Bridge, a railroad crossing of Scott Creek located north of Delta
- Scott Creek Bridge, a railroad crossing of Scott Creek located north of Delta.
- Whiteford House, historic building located on Broad Street in Delta.
- Sample House, historic building located on Flintville Road just south of the Cooper Substation.

Some details on this review are provided in the following sections.

### **3.4.1 Historic Architecture**

One of the closest NRHP-listed or –eligible historic properties identified in the Project Area is the Sample House (Entity: 2001RE00562), which is an historic Aboveground resource located on Flintville Road just south of the Cooper Substation (**Figure 10-3**). Historic properties are defined as buildings, structures, districts, objects, sites, and linear historic sites. There is one ineligible historic property that is crossed by the Project Area. An unnamed bridge (Entity: 1995RE48739) crosses the project near Orr Road. Additionally, one historic district is crossed by the Project Area: the Maryland & Pennsylvania Railroad (Entity: 2010RE03384), which was also deemed not an eligible resource. The railroad originated as the Peach Bottom Railway, which was composed of a narrow-gauge track that spanned from York, Pennsylvania to Delta, Pennsylvania in the late 19<sup>th</sup> century. Later the Peach Bottom Railway merged with the Maryland Central Railroad to form the Maryland and Pennsylvania Railroad that created one contiguous railway from York, Pennsylvania to Baltimore, Maryland (PHMC 2024b).

Coordination with PHMC was initiated in April 2024. The response letter received on May 7, 2024, indicated that the project would have No Effect on above ground resources but that archaeological surveys will be necessary (PHMC 2024d).

### **3.4.2 Archaeology**

As noted, the review concluded that no NRHP-listed or -eligible archaeological sites are located in the area, however, the PA-SHARE site was also used to evaluate the potential for archeologically sensitive areas. The Pre-Contact Probability Model analyzes the landscape at known Native American archeological sites and extrapolates patterns to predict the presence of sites in a given location. The model is broken down into low, moderate, and high probability values. Along the main ROW corridor, there are scattered pockets of moderate to high probability of locating archeological sites. Closer to the Susquehanna River, especially surrounding the Peach

Bottom North and Peach Bottom South Substations are large concentrations of high probability areas of encountering an archeological site (PHMC 2024c).

As noted above, the PHMC response letter received on May 7, 2024, indicated that archaeological surveys will be necessary.

### **3.5 Local Zoning and Comprehensive Plans**

Local zoning ordinances have been adopted in Peach Bottom Township which completely contains the Project Area. Generally, these ordinances are used to guide future land use in the townships by encouraging development of desirable residential, commercial, agricultural, and industrial areas with appropriate groupings of compatible and related land uses. The various zoning districts outlined in this ordinance reflect the land use character of the region, which consists of mostly agricultural and open space, with small pockets of residential, industrial forest cover areas. Public utility projects are often exempt from most municipal zoning standards.

York County has prepared a comprehensive plan. In general, comprehensive plans are intended to serve as a means to review the assets and pressures within the county and provide guidance for future development and preservation; they are not intended to regulate and have no official authority.

As a component of the comprehensive plan, the York County Open Space and Greenways plan was developed to create greenways and protect open space in York County. According to the plan “Greenways, whether they are trails designed for public use or linear conservation corridors that enhance wildlife habitat or help reduce pollution in our waterways, play a significant role in helping to build livable communities and expand local economics” (YCPC 2006). The Open Space and Greenways plan identifies recreational opportunities in York County such as the Mason-Dixon Trail. The Mason-Dixon Trail is crossed by the Project Area near the Peach Bottom Substations and covers 193 miles connecting to the Appalachian Trail in Cumberland County and terminating near Chadds Ford, Pennsylvania. The plan also identifies the Peach Bottom Township Recreation Area which is directly adjacent to the Project Area along Lay Road.

### **3.6 Proposed Development**

The U.S. Census Bureau reports that the population in York County has increased between 2010 and 2022. The population of York County has risen by approximately six percent (USA Facts 2024). More specifically, Peach Bottom Township has experienced a three percent rise in

population between 2010 and 2020. Based on this growth pattern, proposed development within and around the Project Area is anticipated to mildly increase (U.S. Census Bureau 2020).

#### **4.0 ALTERNATIVES EVALUATION**

Pennsylvania’s requirements for transmission siting applications direct applicants to provide a “general description of reasonable alternative routes.” To address this requirement, PECO completed a high-level evaluation of the area around the existing transmission line corridor to assess the potential of identifying alternative route corridors for a new 500 kV line, which would require identification and development of a new 150-foot-wide ROW (**Figure 10-5**). Through this initial analysis, and without planning specific routes within each corridor, PECO determined that any alternative route would create significant new adverse impacts that can be avoided using the planned route, which maximizes use of the existing ROW.

##### **4.1 Evaluation Process**

The initial step in the process was defining a study area within which the potential corridors would extend. Modification to the transmission line network between the Peach Bottom North Substation, Cooper Substation, and the new substation to be constructed by a separate entity (Bramah Substation) will occur in a relatively condensed area and involve relatively direct alignments such that siting an alternative route would be impractical (the straight-line distance between Peach Bottom North Substation and Cooper Substation is 1.3 miles with connections to Bramah Substation located in between). As such, the focus of the evaluation was on the section of PECO’s existing transmission line corridor that extends southwest from the Cooper Substation to the Pennsylvania/Maryland state line (approximately 4 miles).

To focus the evaluation, the study area boundary north of the existing transmission line corridor was defined by Muddy Creek, which extends generally west to east toward the Susquehanna River and is approximately 1.3 miles from the existing transmission line corridor. This waterway is located within a steep, forested valley that is generally 1,000 feet wide. Spanning this waterway would involve accessing the steep slopes to remove the trees within the valley and installing large transmission line structures on each side of the valley to account for the long span length over the waterway. Crossing Muddy Creek would also necessitate a second crossing of the waterway to reconnect to the existing transmission line corridor, which would duplicate the impacts. This boundary would limit any potential alternative to an approximate 5-mile length between Cooper Substation and the Pennsylvania/Maryland state line.

The area south of the existing transmission line corridor does not contain a natural boundary such as Muddy Creek. Land use in this area is predominantly agricultural or forested, with a dense swath of residential use extending for approximately 2.5 miles between Delta, Pennsylvania and Whiteford, Maryland, which is located approximately 1-mile south of the state line. As an additional complication, the Maryland portion of the existing transmission line corridor is extending to the southwest thereby making any alternative potentially longer. As such, the study area boundary south of the existing transmission line corridor was defined as a line extending west to east that is approximately 1-mile south of the state line. This boundary provides opportunity for a potential alternative to possibly avoid the residential areas while also possibly connecting back to the existing transmission line corridor near the state line and minimizing the length of the alternative. This boundary would limit any potential alternative to an approximate 5 to 6-mile length between Cooper Substation and the Pennsylvania/Maryland state line.

The western boundary of the study area is where the existing transmission line corridor meets the Pennsylvania/Maryland state line which will limit the length of any potential alternative and minimize its extent within Maryland. The eastern boundary was defined by the Susquehanna River, which would be impractical to cross and is in the wrong direction.

Within this defined study area, the second step of the evaluation process considered a variety of constraints that were categorized as either social, environmental, or engineering items. Social constraints include residential development as well as socially sensitive places such as churches, cemeteries, and schools. Other social constraints include preserved or public areas such as conserved farms, preserved nature areas, and local parks. Environmental constraints focus on the natural resources that include streams and wetlands as well as forested areas. Some of these resources are part of state-identified natural areas that also provide habitat for plant and animal species of concern that are protected by state or federal agencies. Engineering constraints assess the landscape for obstacles to the development of the potential transmission line. Specific engineering constraints include steep grades, wide stream valleys, and other large infrastructure that would need to be crossed such as railroads, highways, and other existing transmission lines.

The following sections provide a summary of PECO’s assessment of the study area using these constraint concepts. For purposes of this discussion, the evaluation was broken into two sections, “Options North of the Project Area” and “Options South of the Project Area.” As is illustrated in **Figure 10-5**, land use north and south of the existing transmission line alignment is constrained by social development, forested areas, and convoluted stream corridors.

## 4.2 Options North of the Project Area

As noted in **Figure 10-5**, the landscape north of the existing transmission line corridor includes areas of dense residential development around the town of Bryansville and the adjacent extensive Susquehanna Trails neighborhood, deep forested stream valleys that generally flow north toward Muddy Creek, and large swaths of agricultural lands with many protected by agricultural conservation easements. These land uses and natural resources are potential constraints to the development of a new transmission line. The following summarizes the specific constraints identified in the area.

### 4.2.1 Social Constraints

The town of Bryansville is located approximately 1.1 miles to the north of the existing transmission line corridor and is composed of approximately 75 residential homes clustered around the network of local roads. A few commercial properties, the Bryansville United Methodist Church, and a large Williams Transcontinental Gas Pipeline facility are located along the main roadway (SR 851). The sprawling Susquehanna Trails residential development is located a mile further to the northwest from Bryansville and is an approximate 2.5 square mile area of dense development containing hundreds of existing homes. Other areas of social constraints include the RT 74 and RT 851 intersection located just north of the existing transmission line corridor that consists of several residential communities, restaurants and other businesses, and the Calvary Chapel of Delta church, and the series of local roads located north of the Cooper Substation (i.e., Lay Road, Flintville Road, Ailes Road) that are bordered by pockets of residential properties, as well as Peach Bottom Park (Delta Sports Complex), which contains ball fields and other recreational opportunities.

Many of the farms located north of the existing transmission line corridor are also protected by county-based agricultural conservation easements. These easements were put in place to preserve the agrarian character of the county and to reduce the pressure of development. Construction of a potential transmission corridor across these lands is permissible but may place a burden on the farmer by disrupting their farming patterns through the installation of new structures within their fields, which they would need to navigate around. In addition, two parcels are protected by environmental conservation easements that were put into place through local land trust groups to preserve agricultural and natural landscapes. These include:

- 150-acre Farm and Natural Lands Trust near Line Road.
- 35-acre Farm and Natural Lands Trust near Route 74.

#### 4.2.2 Environmental Constraints

According to the PFBC, several streams in this area are classified as Natural Trout Reproducing which provides protection to the watersheds and wetlands within these watersheds as they are also considered Exceptional Value wetlands under Pennsylvania Chapter 105 environmental permitting regulations. These streams include Fishing Creek, Scott Creek, and Muddy Creek watersheds which account for most of the area north of the existing transmission line corridor.

These streams and most of their tributaries are bordered by steep valleys that are heavily forested. Other large areas of dense forest cover are located between the stream valleys. Collectively, these forested areas provide potential habitat for a diversity of plant and animals, some of which are considered threatened or endangered by federal and state agencies, such as the nodding trillium (*Trillium cernuum*) and the broadhead skink (*Plestiodon laticeps*). Two specific state-identified Natural Areas encompass some of these forested areas that provide known habitat for some of these protected species. These Natural Areas include:

- Bryansville Station Seep – Rare plants and other threatened and endangered species in the area along Muddy Creek.
- Fishing Creek-York County – Rare, threatened or endangered species of concern along broad section of Fishing Creek watershed.

#### 4.2.3 Engineering Constraints

One of the engineering constraints identified north of the existing transmission line corridor includes the Williams Transcontinental Gas Pipeline and pumping facility near Bryansville. The main pipelines extend from the southwest to the northeast between Bryansville and Susquehanna Trails. Paralleling this feature is not preferred by the utility due the potential cathodic impacts the electric line may have to the pipeline; spanning over the feature is less of a concern. The Willaims facility in Bryansville is a large industrial complex that includes pumping facilities and a network of gas pipelines that should be avoided by potential transmission line routes. Another similar engineering constraint is the series of existing PECO transmission lines near the Cooper Substation. These power lines present an engineering challenge that if needed to be crossed by a potential transmission line would require taller and more engineeringly complex structures. An abandoned railroad corridor also bisects the area from southeast to northwest and intersects the existing transmission line corridor near the RT 74 crossing. This railroad corridor is considered a potential cultural resource that may require additional historic survey but also may still involve specific regulatory and owner-operated approvals for spanning despite the lack of current use.

Another engineering constraint is the general topography of the landscape. The steep and deep stream valleys create challenges for spotting pole locations and engineering span lengths to cross over these irregular spaced areas. Construction of a potential route would involve creating new access roads across this landscape which would be complex and result in additional environmental and social impacts.

#### **4.2.4 Review of Alternative Route Options to the North**

Compared to the existing PECO transmission line corridor, there are no better practicable alternative route options located north of this corridor. Any route in this area would require acquisition of new easements from minimally 20 different landowners. This acquisition would represent a brand-new impact, which could dramatically alter the landscape, affect landowners' land use operations, and introduce new structures on their properties.

Unlike the existing corridor, which is generally linear, any new route in this area would be convoluted due to the need to avoid the density of residential development, minimize impacts to natural resources, and address the challenging terrain. The new route may need to cross over an existing PECO transmission line, which would result in several taller structures. The varying structure heights and numerous angle changes would increase the complexity of engineering and construction compared to the generally linear alignment of the existing corridor.

The new route would extend through at least four or five new forested areas, which may include the Farm and Natural Lands Trust parcels, the Bryansville Station Seep natural area, or the Fishing Creek-York County natural area, that will result in potential acres of tree clearing compared to the minimal tree clearing anticipated for building the project within the existing transmission line corridor. Clearing these forests may lead to new impacts to federal or state protected animal or plant habitat areas. The new route will also need to span over at least four or five new stream valleys, some of which may be associated with the Natural Areas or environmentally conserved parcels noted in this area. Spanning these streams may also result in additional riparian impacts. Wetlands may be located along the potential alignment that could be negatively affected and result in complex permitting and mitigation requirements.

In summary, a potential 500 kV transmission line alignment located north of the existing transmission lines would be longer than the existing transmission line corridor due to the challenging landscape and arrangement of identified social and environmental constraints. This longer and more convoluted alignment may result in the following impacts:

- New transmission line easement restrictions affecting multiple landowners

- Potential for new 500 kV structures on their properties
- Potential clearing of vegetation on their properties
- Probable viewshed complaints raised by landowners and the surrounding community
- Potential condemnation for these lands
- Probable need to cross conserved agricultural lands
- Potential effects on farming patterns
- Potential need to cross lands with existing conservation easements
- Acres of forest clearing
- Loss of riparian buffer for wild trout streams
- Potential impacts to RTE habitat
- Potential forested wetland impacts
- Potential complex permitting process and mitigation requirements

#### **4.2.5 Conclusions for Route Options to the North**

Based on the items discussed above, this evaluation of potential transmission line route options north of the existing transmission line corridor concluded the following:

- Use of the existing transmission line corridor will involve acquisition of minimal areas of ROW from two landowners currently crossed by the Project, whereas an alternative route would require new 150-foot wide ROW that extends approximately 5 miles and across at least 20 new properties.
- Use of the existing transmission line corridor avoids major residential/commercial areas such as Susquehanna Trails and Bryansville.
- Use of the existing transmission will not involve any new stream or wetland crossings, whereas an alternative may need to cross five or six streams and potentially involve new wetland impacts.
- Use of the existing transmission line corridor reduces potential impacts to environmentally sensitive areas, such as the Farm and Natural Lands Trust parcels, the Bryansville Station Seep natural area, and the Fishing Creek-York County natural area, by utilizing largely maintained existing transmission rights-of-way and easements.
- Use of the existing transmission line corridor reduces the need for new impacts to agricultural easements and conserved lands by utilizing existing easements and rights-of-way.
- Use of the existing transmission line corridor maintains the approximate same straight-line distance between churches, parks, and other community interests by staying within the existing transmission line area.
- Use of the existing transmission line corridor reduces the risk of impacts to gas pipelines and other utility infrastructure because the existing corridor does not intersect these utilities.

### **4.3 Options South of the Project Area**

As noted in **Figure 10-5**, the landscape south of the existing transmission line corridor also includes areas of dense residential development around the town of Delta and the adjacent Delta Ridge neighborhood, several forested stream valleys that generally flow south toward the Susquehanna River or Deep Creek, and large swaths of agricultural lands with many protected by agricultural conservation easements. The town of Delta and the surrounding development define a barrier to any alternative route and would force the alignment further south and into the state of Maryland, where the route would encounter areas of dense residential development (towns of Cardiff and Whiteford) and large forested tracts. The following summarizes the specific constraints identified in the area:

#### **4.3.1 Social Constraints**

The town of Delta is located less than one mile south of the existing transmission line corridor and extends to the southwest to the state line border, where it transitions into the communities of Cardiff and Whiteford, Maryland. Delta is composed of residential and commercial development and has a population of approximately 700 people. Commercial businesses include restaurants, service centers, and hardware stores, but other facilities such as firehalls, senior centers, post offices, three churches and an elementary school are also present. The downtown is listed as a historic district through the National Register of Historic Places (NRHP) due to its association with slate production during the late 19th and early 20th centuries. An adjacent property (Whiteford House) is also listed as an historic home through the NRHP. The communities of Cardiff and Whiteford are also composed of residential and commercial development that is centered around Pylesford Road (MD 165) and Whiteford Road (MD 136). These communities are also listed by the NRHP as historic districts. Commercial areas include a supermarket, lumber yard, public library, and an ice cream shop, as well as the Slate Ridge Presbyterian Church and a volunteer fire company.

The Delta Ridge community is located immediately to the northwest of Delta and closer to the existing transmission line corridor. This approximate 140 home residential development includes areas of community open space and public walking trails. The community is bordered to the west by the Mason Dixon Fair Grounds, the Slate Ridge Cemetery, and the Delta Christian Academy. Furthermore, a series of local roads located north of Delta (i.e., RT 74, Broad Street, Atom Road, and Pikes Peak Road) are bordered by pockets of residential properties.

In addition to these developed areas, other social constraints that are located to the south of the existing transmission line corridor include Guppy Gulch Park, a scattering of conserved lands, and several churches. Guppy Gulch Park is a private camping facility near Delta that is based along a flooded quarry and offers a diversity of water sports and scuba diving. Several of the farms in Pennsylvania are protected by county-based agricultural conservation easements. In Maryland, a 185-acre tract of forest near Cardiff is protected through a Maryland Forest Conservation Easement and a 388-acre farm near Whiteford is protected through a Maryland Agricultural Land Preservation Foundation Easement. The rural area southeast of Delta also contains three churches and cemeteries including:

- Slateville Presbyterian Church and Cemetery.
- Mount Zion Church and Cemetery.
- Mount Nebo United Methodist Church and Cemetery.

#### **4.3.2 Environmental Constraints**

Streams in Pennsylvania are classified as Natural Trout Reproducing watersheds, according to the PFBC; wetlands within these watersheds are also considered Exceptional Value wetlands under Pennsylvania Chapter 105 environmental permitting regulations. These include Michael Run and an unnamed tributary to the Susquehanna River. Maryland does not provide similar commission-based protection for streams but does classify streams based on protection to aquatic life. Maryland streams near the existing transmission line corridor are classified as Class I-P (Protection of Nontidal Warmwater Aquatic Life – e.g., Broad Creek) and Class III-P (Protection of Nontidal Cold Water Aquatic Life – e.g., Deep Creek). Broad Creek is located southwest of Whiteford, whereas Deep Creek is located further to the northeast near Delta and Cardiff. Class III-P streams do provide protection for the growth and propagation of trout species. The “P” in the classification codes further signifies the protection of public water supplies.

Several areas of dense forest are located south of the existing transmission line corridor. Forested areas in Pennsylvania include the Guppy Gulch Park, quarries located along Atom Road, and along the stream valleys extending toward the Susquehanna River. A few larger forested tracts are in Maryland with some protected by state easements. Maryland has special regulations regarding tree removal that requires mitigation in the form of replenishment. Impacts to the forested areas are also monitored by Pennsylvania and Maryland agencies due to their potential as habitat for threatened or endangered species of concern.

### **4.3.3 Engineering Constraints**

One of the engineering constraints identified south of the existing transmission line corridor includes the Calpine Power Plant located east of Delta. This nearly 50-acre facility includes geothermal and natural gas-powered generators, electrical substation facilities, and other operational buildings that should be avoided by potential transmission line routes. A 500 kV transmission line extends for 3.5 miles to the northeast between the Calpine Power Plant and the Peach Bottom South Substation. This power line presents an engineering challenge that if needed to be crossed by a potential transmission line would require taller and more engineeringly complex structures. An abandoned railroad corridor also bisects the area from east to west extending from the near the Peach Bottom Power Plant, past the Calpine Power Plant, through Delta, and then southwest through Cardiff and Whiteford. This railroad may still involve specific regulatory and owner-operated approvals for spanning despite the lack of current use.

The topography south of the existing transmission line corridor is not as incised with steep stream valleys as the north side, but does contain over a dozen large, abandoned slate quarries. These quarries range in size from 5 to 20 acres and extend in a linear fashion from northeast to southwest just south of Delta, Cardiff, and Whiteford. Spanning these features is not considered a preferred transmission siting practice and the area around the quarries may be unstable due to the quarrying operations. Several of the quarries in Maryland are also surrounded by the dense forested areas that are protected by the Maryland Forest Conservation Easement.

### **4.3.4 Review of Alternative Route Options to the South**

Compared to the existing PECO transmission line corridor, there are no better practicable alternative route options located south of this corridor. Any route in this area would need to extend into Maryland to bypass the Calpine Power Plant and dense residential development around Delta, Pennsylvania and Cardiff and Whiteford, Maryland. This would introduce the need to coordinate with the Maryland Public Service Commission for approval to site a line in Maryland, which would involve additional costs and delays to the project.

Any route in this area would also require acquisition of new easements from minimally 10 different landowners in Pennsylvania and minimally 15 landowners in Maryland. This acquisition would represent a brand-new impact, which could dramatically alter the landscape, affect landowners' land use operations, and introduce new structures on their properties. The new route may also extend near several local churches and other culturally sensitive sites that may be considered a visual effect and may increase community concern.

Unlike the existing corridor, which is generally linear, any new route in this area would be convoluted due to the need to avoid the density of residential development, the Calpine Power Plant and transmission line, and minimize impacts to natural resources. The convoluted alignment will involve numerous angle changes which will increase the complexity of engineering and construction compared to the generally direct alignment of the existing corridor.

Although a southern route option may be able to avoid most impacts to forested areas in Pennsylvania, there are larger forested tracts in Maryland that would need to be crossed. Maryland has strict regulations on forest clearing that requires mitigation for all trees affected and some of the areas that may need to be crossed are protected through a Maryland Forest Conservation Easement. Wetlands may be located along the potential alignment that could be negatively affected and result in complex permitting and mitigation requirements in two different states.

In summary, a potential 500 kV transmission line alignment located south of the existing transmission lines would be longer than the existing transmission line corridor due to the indirect alignment required to avoid the arrangement of identified social and environmental constraints. This longer and more convoluted alignment may result in the following impacts:

- New transmission line easement restrictions affecting multiple landowners
- Potential for new 500 kV structures on their properties
- Potential clearing of vegetation on their properties
- Probable viewshed complaints raised by landowners and the surrounding community
- Potential condemnation for these lands
- Probable need to cross conserved agricultural lands
- Potential effects on farming patterns
- Potential effects on cultural resource areas in Maryland (historic districts)
- Acres of forest clearing
- Potential need to cross forests protected by Maryland Forest Conservation Easements
- Loss of riparian buffer for wild trout streams in Pennsylvania
- Loss of riparian buffer for Class III-P streams in Maryland,
- Potential impacts to RTE habitat
- Potential forested wetland impacts
- Potential complex permitting process and mitigation requirements

#### **4.3.5 Conclusions for Route Options to the South**

Based on the items discussed above, this evaluation of potential transmission line route options south of the existing transmission line corridor concluded the following:

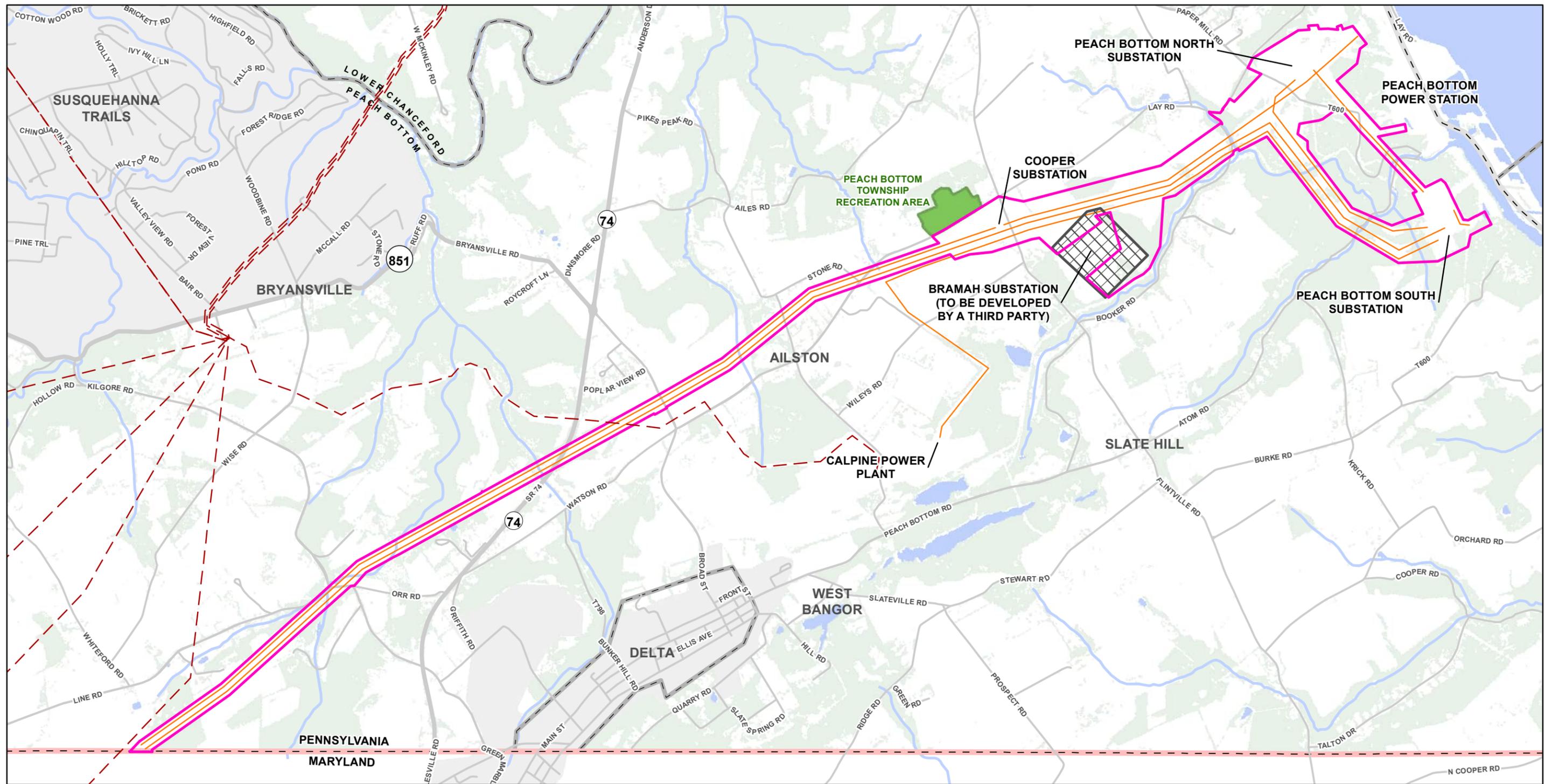
- Use of the existing transmission line corridor will involve acquisition of minimal areas of ROW from two landowners currently crossed by the Project, whereas an alternative route would require new 150-foot wide ROW that extends approximately 5 or 6 miles and across at least 25 new properties.
- Use of the existing transmission line corridor avoids major residential/commercial areas located to the south, including the Historic District of Delta and the communities of Cardiff and Whiteford.
- Use of the existing transmission will not involve any new stream or wetland crossings, whereas an alternative may need to cross five or six streams and potentially involve new wetland impacts.
- Use of the existing transmission line corridor reduces potential impacts to environmentally sensitive areas such as the Maryland Forest Conservation Easement lands by utilizing largely maintained existing transmission rights-of-way and easements.
- Use of the existing transmission line corridor reduces the need for new impacts to agricultural easements and conserved lands by utilizing existing easements and rights-of-way.
- Use of the existing transmission line corridor maintains the approximate same straight-line distance between churches, the elementary school, and other community interests by staying within the existing transmission line area.
- Use of the existing transmission line corridor reduces the risk of impacts to the Calpine Power Plant and their infrastructure.

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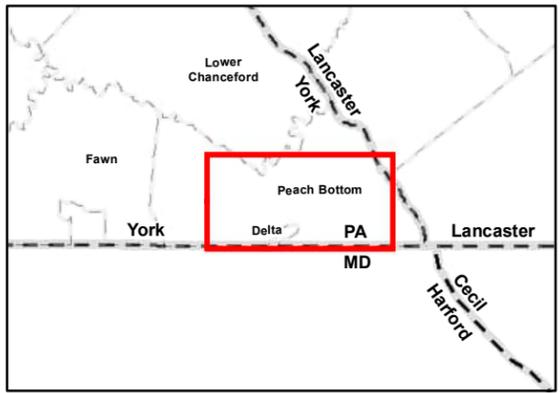


**Legend**

- Project Area
- Proposed Substation
- Existing Transmission Lines
- Existing Gas Pipeline
- Stream
- Local Park
- State Boundary
- County Boundary
- Municipal Boundary

0 2,000 4,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US

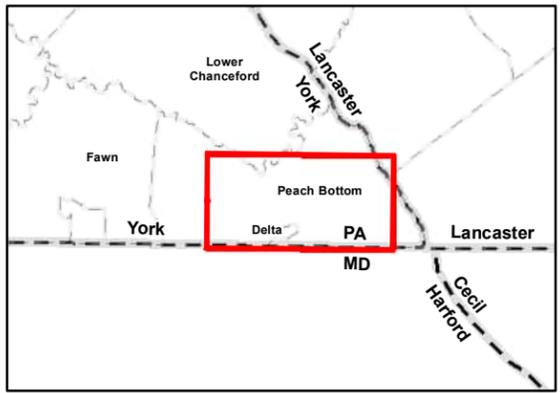
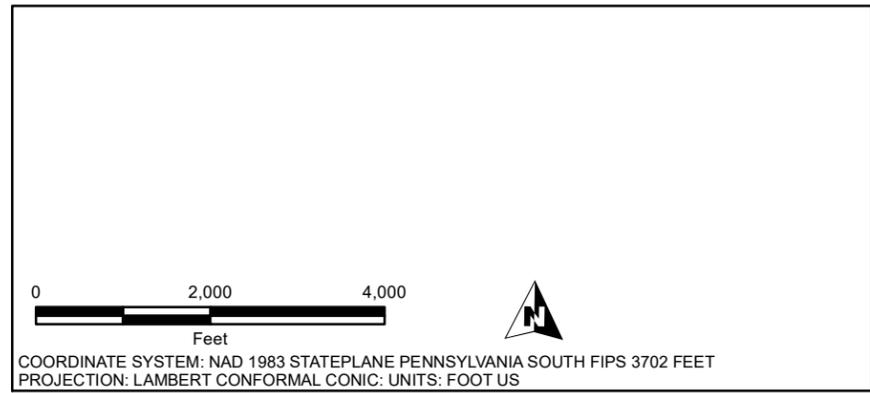
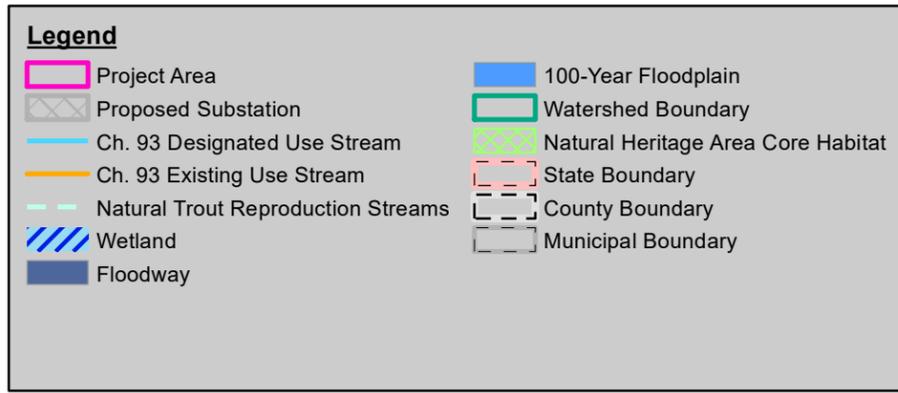
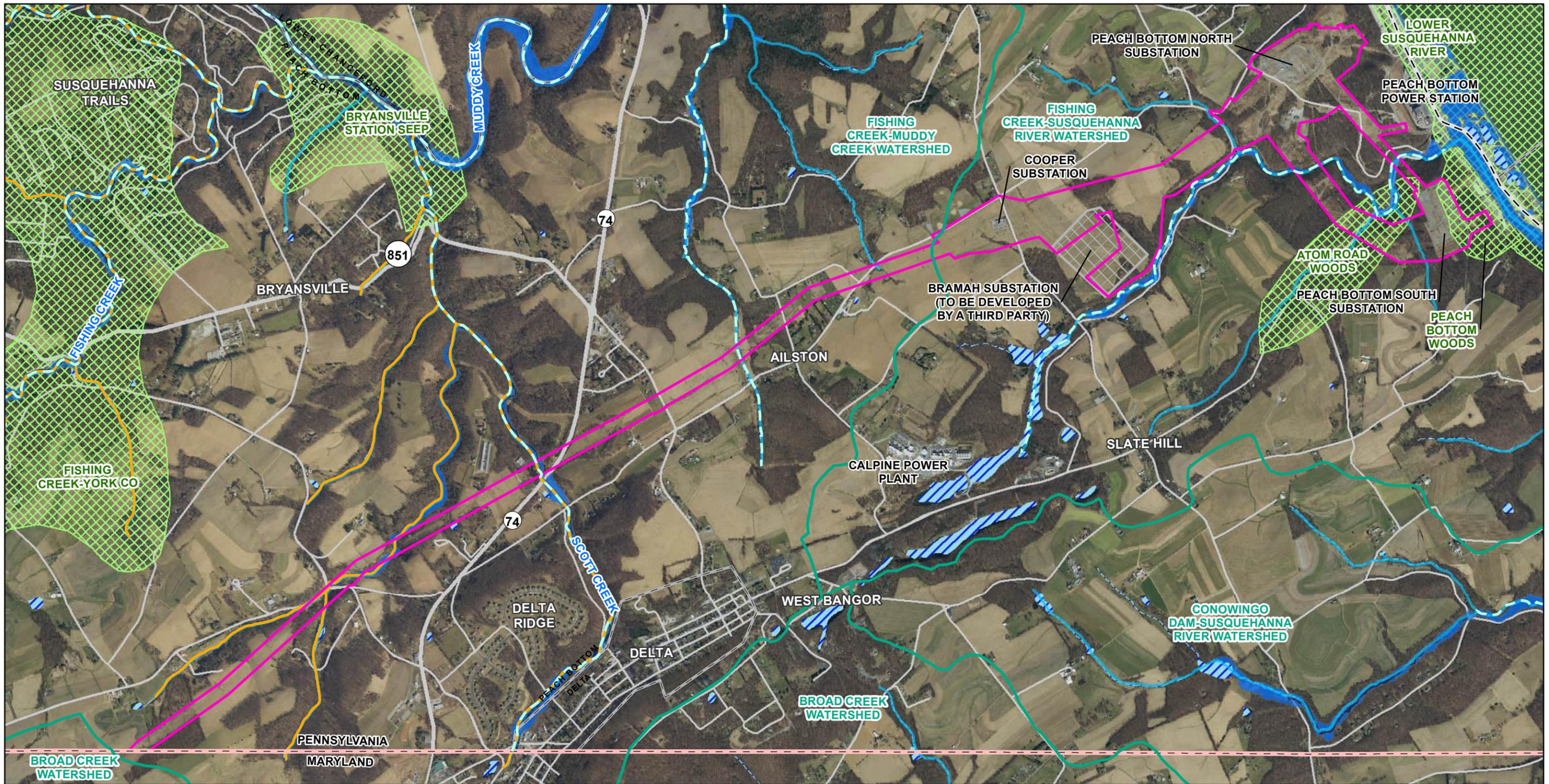


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AN EXELON COMPANY

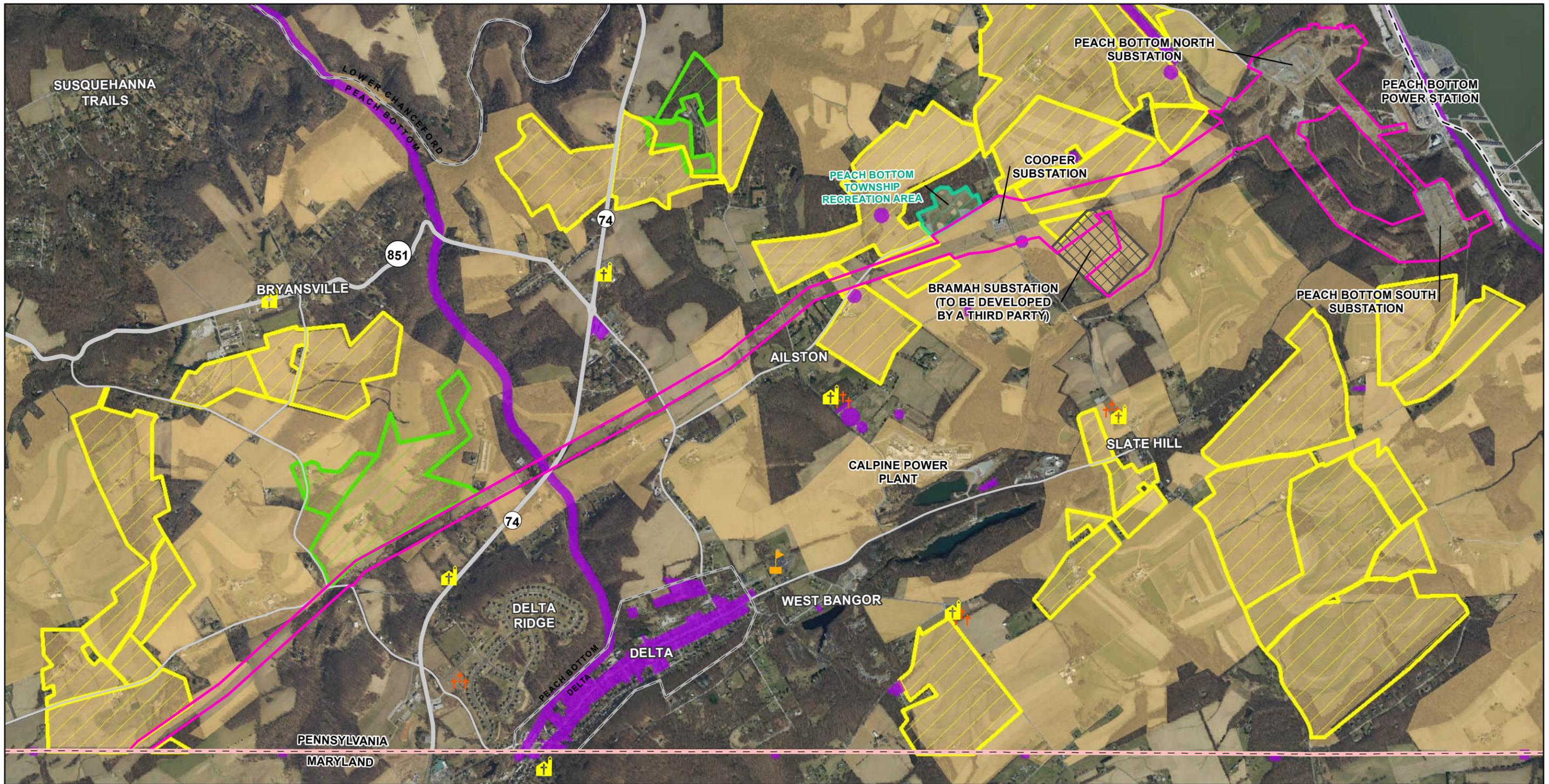
**Figure 10-1  
Project Area Map**

**Brandon Shores Retirement  
Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 9/10/2024



<b>AECOM</b> AN EXELON COMPANY	
<b>Figure 10-2</b> <b>Natural Environment</b>	
<b>Brandon Shores Retirement</b> <b>Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company	
Prepared By: BSF	Checked By: DY/RB
Job: 6072782	Date: 9/10/2024

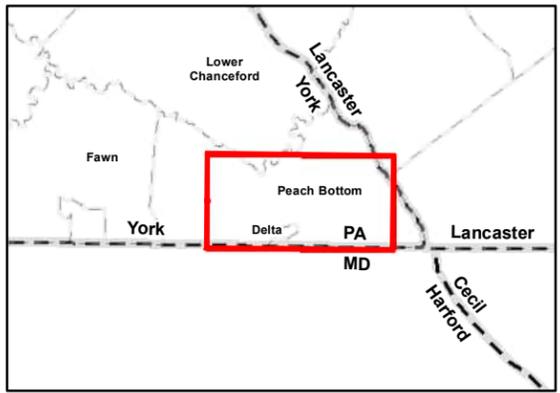


**Legend**

Project Area	Farm Easement
Proposed Substation	Conservation Easement
Place of Worship	Agricultural Security Area
School	State Boundary
Cemetery	County Boundary
Cultural Resource	Municipal Boundary
Local Park	

0 2,000 4,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC; UNITS: FOOT US



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**Figure 10-3  
Social Environment**

**Brandon Shores Retirement  
Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

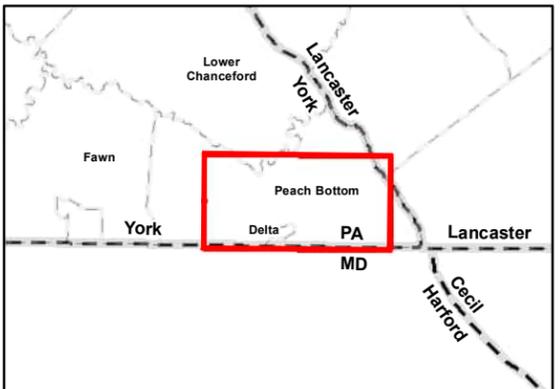
Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 9/10/2024



**Legend**

- Project Area
- Water
- Forest
- Agricultural and Undeveloped
- Residential
- Industrial
- Proposed Substation
- State Boundary
- County Boundary
- Municipal Boundary

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC; UNITS: FOOT US

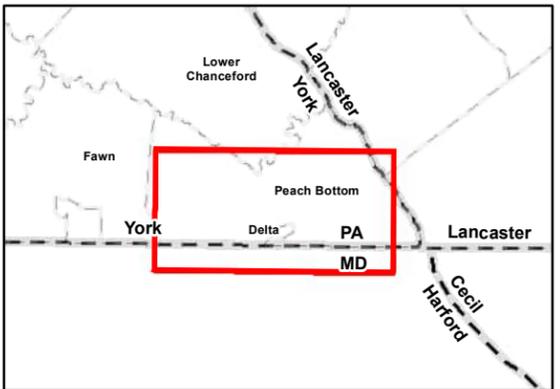
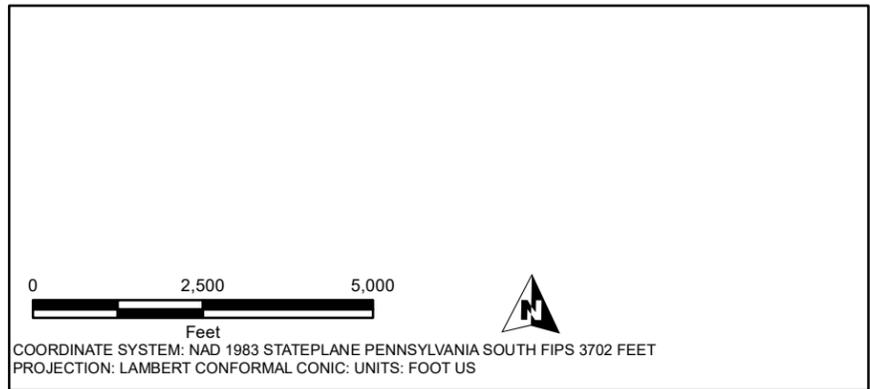
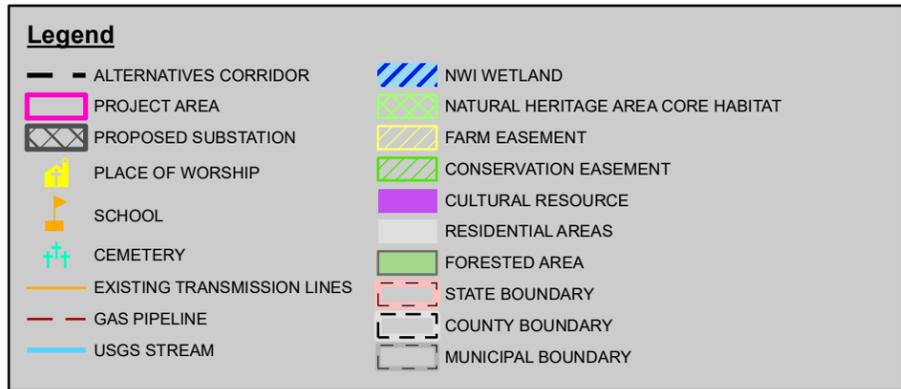
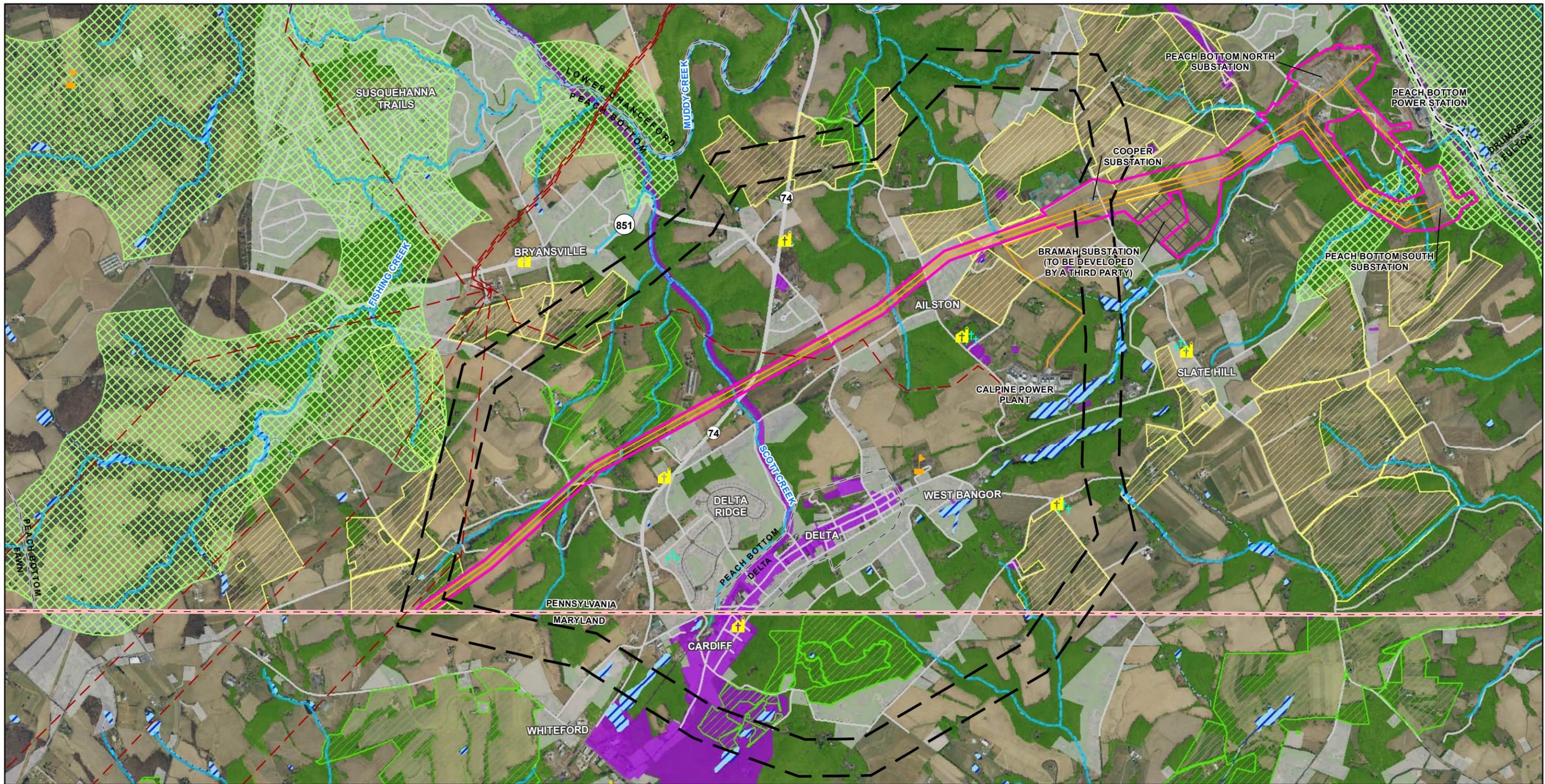


**peco** **AECOM**  
 AN EXELON COMPANY

**Figure 10-4  
 Land Use**

**Brandon Shores Retirement  
 Mitigation Project**  
 Peach Bottom Township, York County  
 Pennsylvania  
 PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 9/10/2024



<b>AECOM</b> AN EXELON COMPANY	
<b>Figure 10-5</b> <b>Alternatives Review</b>	
<b>Brandon Shores Retirement</b> <b>Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company	
Prepared By: BSF	Checked By: DY/RB
Job: 6072782	Date: 9/16/2024

**Attachment 11:**  
**Property Owners Crossed by Right-of-Way**

## **Brandon Shores Retirement Mitigation Project PROPERTY OWNERS CROSSED**

Names and addresses of Known Persons, Corporations and Other Entities of Record  
Owning Property Within the Existing Transmission Line Corridor for the Brandon Shores  
Retirement Mitigation Project

Hunter L. Kuser  
15 141<sup>ST</sup> Street, Unit B  
Ocean City, MD 21842-2011  
Parcel: 43-000-BP-0074.B0-00000

Donald E. & Judy C. Hammons  
99 Stone Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.N0-00000

Holden L. Hersey  
687 Pikes Peak Rd  
Delta, PA 17314-8518  
Parcel: 43-000-BP-0074.R0-00000

Joshua O. & Lauren M. Griffith  
407 Lay Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.L0-00000

Scott A. & Kimberly C. Taylor  
613 Pikes Peak Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.W0-00000

Richard O. Baker  
431 Lay Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.U0-00000

Bruce Hannah Jr.  
171 Stone Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.Z0-00000

47 Delta LLC  
449 Lay Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.V0-00000

James Ronald & Betty Yeager  
139 Stone Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.M0-00000

Grimmel Farms LP  
3855 Federal Hill Rd  
Jarrettsville, MD 21084  
Parcel: 43-000-BQ-0041.00-00000

Allen S. & Audrey Coogle  
119 Stone Rd  
Delta, PA 17314  
Parcel: 43-000-BP-0074.Q0-00000

Troyer Farms LLC  
17905 Troyer Rd  
White Hall, MD 21161-9456  
Parcels: 43-000-BQ-0016.00-00000  
43-000-BQ-0034.00-00000  
43-000-BQ-0047.00-00000

Constellation Energy Generation LLC  
ATTN: General Counsel  
PO Box 340014  
Nashville, TN 37203

Parcels:

43-000-BQ-0049.00-00000  
43-000-BQ-0050.00-00000  
43-000-BQ-0051.00-00000

PECO Energy Company  
2301 Market Street, N3-3  
Philadelphia, PA 19013

Parcels: 43-000-AO-0029.A0-00000

43-000-AO-0029.B0-00000  
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43-000-AP-0012.E0-00000  
43-000-AP-0011.A0-00000  
43-000-AP-0011.D0-00000  
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43-000-BP-0071.B0-00000  
43-000-BP-0076.A0-00000  
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**Attachment 12:**  
**Easements and Land Rights Description**

**GENERAL NOTES**

1. THE EXISTING PECO TRANSMISSION RIGHT-OF-WAY AND THE PROPOSED ACQUISITION AREAS SHOWN ARE BASED UPON A FIELD SURVEY PERFORMED BY RETTEW IN MARCH AND APRIL OF 2024.
2. BEARING BASIS OF SURVEY IS THE PA STATE PLANE COORDINATE SYSTEM SOUTH ZONE, NAD 83 AND VERIFIED USING A TRIMBLE RTX SOLUTION PERFORMED ON MARCH 18, 2024 BY RETTEW.
3. FOR PROPERTIES THAT HAVE PARTIAL ACQUISITION AREAS, RETTEW HAS NOT PERFORMED FULL BOUNDARY RETRACEMENT SURVEYS. ONLY PROPERTY LINES ADJACENT TO THE ACQUISITION AREA WERE VERIFIED BY RETTEW.
4. EXISTING FEATURES SHOWN IN THE EXISTING PECO TRANSMISSION RIGHT-OF-WAY AND IN ACQUISITION AREAS 1 THROUGH 11 HAVE BEEN FIELD VERIFIED BY THE SURVEYOR. THE EXISTING FEATURES SHOWN IN ACQUISITION AREAS 12 THROUGH 18 (BRAMAH SUBSTATION) AND ARE SHOWN BASED UPON A COMBINATION OF FIELD SURVEY AND AERIAL TRACING.
5. EXISTING WATER LINE SHOWN HEREON IS BASED UPON REFERENCE 8 AND HAS NOT BEEN FIELD VERIFIED.
6. THE PENNSYLVANIA/MARYLAND STATE LINE SHOWN HEREON IS BASED UPON DEED VERIFICATION FROM THE PENNSYLVANIA ONLY. THERE HAS BEEN NO VERIFICATION OR BOUNDARY RETRACEMENTS OF THE STATE LINE OR THE MONUMENTS ALONG THE STATE LINE BY RETTEW.
7. PROPOSED FEATURES SHOWN HEREON ARE BASED UPON ELECTRONIC FILES PROVIDED BY POWER ENGINEERING ON 08/21/2024.

**LEGEND**

	Right-of-Way Line		Property Marker
	Existing Centerline Circuit		Unmarked Corner
	Existing Calpine Waterline		Utility Pole
	Edge of Pavement		Guy Pole
	Edge of Stone		Sign
	Curb Line		Unidentified Manhole
	Guide Rail		Telecom Manhole
	Fence		Waterline Manhole
	Building		Electric Box
	Riprap Stone Area		Mail Box
	Planting Area		Existing Transmission Structures
			Proposed Acquisition Area

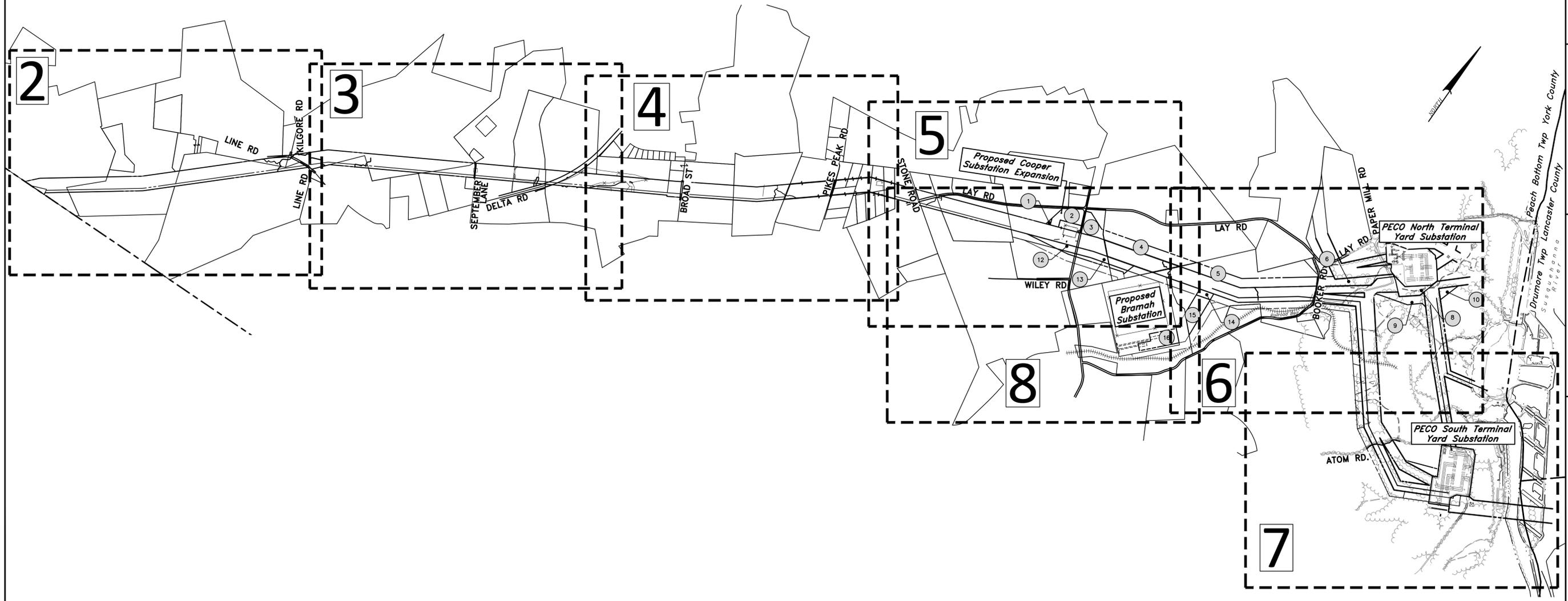
**REFERENCES**

1. PLAN TITLED "GRACETON-NOTTINGHAM 220KV TRANSMISSION LINE"
2. AGREEMENT TITLED "AMENDED AND RESTATED EASEMENT AND LICENSE AGREEMENT BY AND BETWEEN CONSTELLATION ENERGY GENERATION, LLC AND PECO ENERGY COMPANY FOR LIMERICK GENERATING STATION" PREPARED BY JOHN C. HALDERMAN, 2301 MARKET STREET PHILADELPHIA, PA 19103, DATED JANUARY 26, 2022.
3. PLAN TITLED "OVERALL PROPERTY PLAN FOR PEACH BOTTOM GENERATION STATION" PREPARED BY RETTEW ASSOCIATES, INC. DATED JANUARY 25, 2022.
4. EASEMENT AGREEMENT BY AND BETWEEN EXELON GENERATION COMPANY, LLC AND CONECTIV MID-MERIT, LLC FOR THE TRANSMISSION, WATER AND COMMUNICATION LINE EASEMENTS AND PUMPING STATION DATED AUGUST 25, 2008.
5. EASEMENT AGREEMENT BY AND BETWEEN PECO ENERGY COMPANY AND CONECTIV MID MERIT, LLC FOR THE TRANSMISSION, WATER AND COMMUNICATION LINE EASEMENT, PEACH BOTTOM TOWNSHIP, DELTA, PENNSYLVANIA DATED AUGUST 25, 2008.
6. EASEMENT AGREEMENT BY AND BETWEEN PECO ENERGY COMPANY AND CONECTIV MID MERIT, LLC FOR THE TRANSMISSION, WATER AND COMMUNICATION LINE EASEMENT, PEACH BOTTOM TOWNSHIP, DELTA, PENNSYLVANIA DATED JUNE 23, 2010.
7. MEMORANDUM OF PURCHASE OPTION GRANTED BY TROYER FARMS, LLC TO FRANKLIN REAL ESTATE COMPANY DATED SEPTEMBER 18, 2023 AND RECORDED IN THE YORK COUNTY RECORDER OF DEEDS OFFICE IN RECORD BOOK 2797 PAGE 7829 ON SEPTEMBER 20, 2023.
8. PLANS TITLED "DELTA WATER LINE WORKSHEET - CALPINE MID MERIT, LLC" PREPARED BY GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC DATED APRIL 8, 2011 (NO RECORDING NOTED).

Area	Owner	Parcel ID	Deed Book/Page	Approximate Acreage
1	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	0.2 Acres
2	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	4.5 Acres
3	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	3.7 Acres
4	GRIMMEL FARMS, LP	43-000-BQ-0041.00-00000	2664/7621	8.1 Acres
5	TROYER FARMS LLC	43-000-BQ-0047.00-00000	2324/1764	12.0 Acres
6	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	5.2 Acres
8	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	3.1 Acres
9	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	3.3 Acres
10	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0051.00-00000	1977/8295	1.1 Acres
12*	CALPINE CORPORATION	43-000-BQ-0034.00-00000	2020/4203	4.5 Acres
13**	CALPINE CORPORATION	43-000-BQ-0041.00-00000	1679/671	1.6 Acres
14*	CALPINE CORPORATION	43-000-BQ-0047.00-00000	2020/4203	1.0 Acres
15	TROYER FARMS LLC	43-000-BQ-0047.00-00000	2324/1764	6.7 Acres
16***	TROYER FARMS LLC	43-000-BQ-0016.00-00000	2324/1764	4.8 Acres

\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN TROYER FARMS LLC  
 \*\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN GRIMMEL FARMS, LP  
 \*\*\* PROPERTY SUBJECT TO PURCHASE OPTION PER REFERENCE 7

**Attachment 12**



**FOR RETTEW ASSOCIATES BY:**

**MANAGER:** JASON MORAN  
**DESIGN BY:** DB  
**SURV. CHIEF:** JIM  
**DRAWN BY:** DB

**CHKD BY:** JM  
**REL/BOOK NO. DATA COLLECTOR:** JM  
**CHKD BY:** JM

**DRAWING REFERENCE:** 0310001291-SW-BASE, 0310001291-SW-TAKE

**CLIENT:** PECO ENERGY COMPANY  
 2301 MARKET STREET, N3-3  
 PHILADELPHIA, PA 19103

**RETTEW ASSOCIATES, INC.**  
 17603 Lancaster, PA  
 Phone: (800) 738-8395  
 Email: rettew@rettew.com  
 Website: www.rettew.com

**Engineers • Planners • Surveyors • Landscape Architects**  
 0310001291-SW-BASE

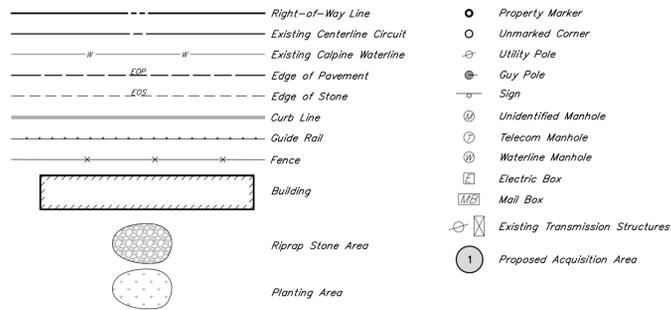
**FERC ALIGNMENT SHEET PLANS FOR THE PECO ENERGY COMPANY BRANDON SHORES RETIREMENT MITIGATION PROJECT PEACH BOTTOM TOWNSHIP YORK COUNTY, PA**

**DATE:** 08/15/24  
**SHEET NO. 1 OF 8**  
**DWG. NO. 0310001291**

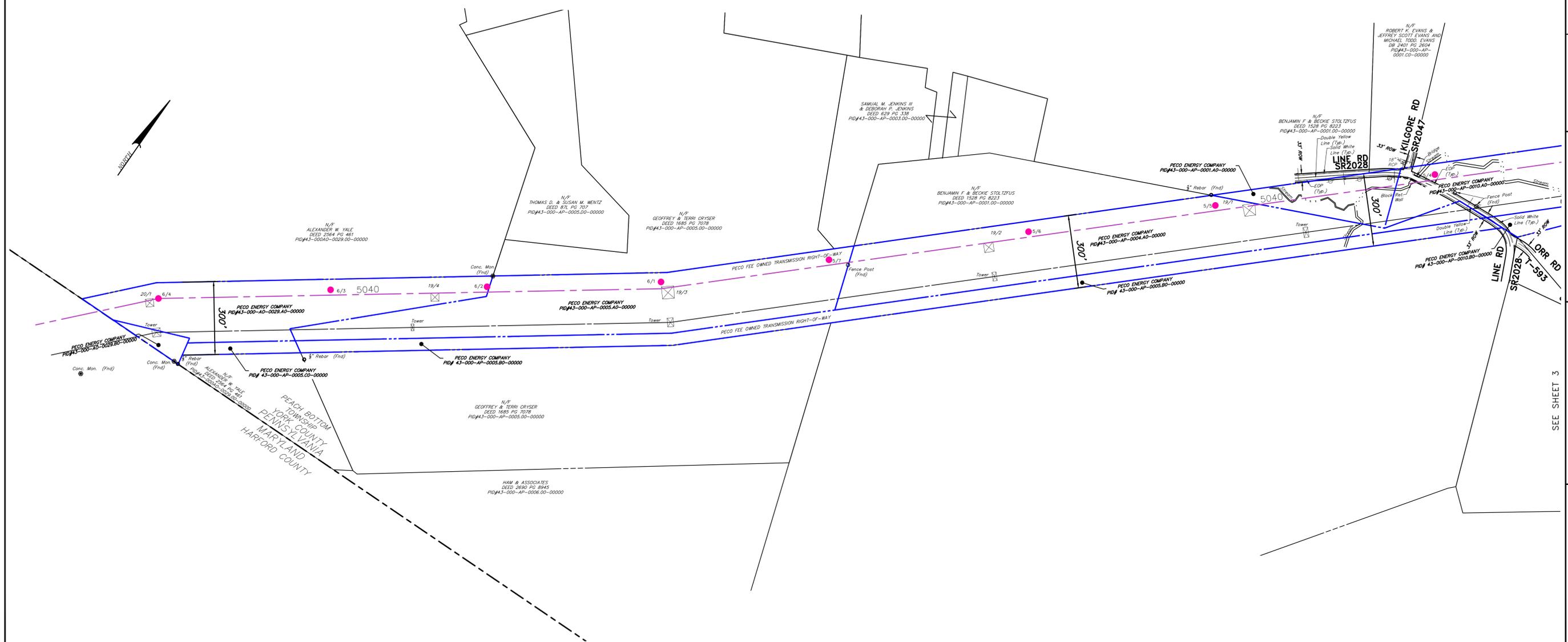
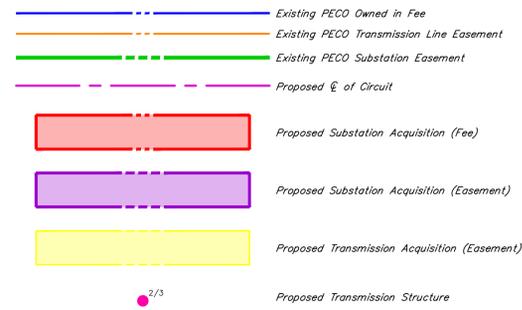
**REVISIONS:**

NO.	DATE	REVISION
1	08/23/24	ADJUSTED EASEMENTS TO UPDATED CLS
2	08/26/24	UPDATES TO EXISTING CENTERLINES
3	09/03/24	EASEMENT ACQUISITION UPDATES

**LEGEND**



**COLOR LEGEND**



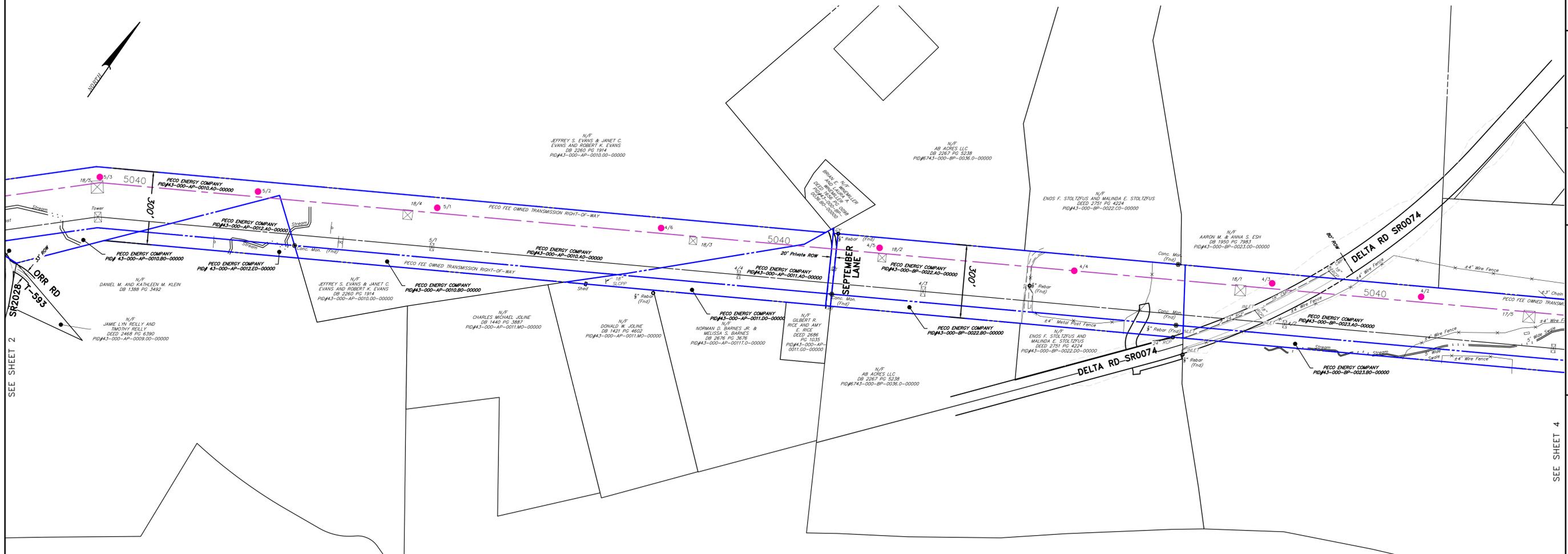
FOR RETIEW ASSOCIATES BY:			
MANAGER:	JASON MORAN	CHKD BY:	JM
DESIGN BY:	DB	FIELDBOOK NO. DATA COLLECTOR:	JM
DRAWN BY:	DB	CHKD BY:	JM
DRAWING REFERENCE:			
3 09/03/24 EASEMENT ACQUISITION UPDATES 2 08/26/24 UPDATES TO EXISTING CENTERLINES 1 08/23/24 ADJUSTED EASEMENTS TO UPDATED CLS			
NO.	DATE	NO.	REVISION
CLIENT:		PECO ENERGY COMPANY 2301 MARKET STREET, N3-3 PHILADELPHIA, PA 19103	
SEE SHEET 3		RETIEW Associates, Inc. Lancaster, PA 17603 Phone: (800) 718-8395 Email: <a href="mailto:retiew@retiew.com">retiew@retiew.com</a> Website: <a href="http://www.retiew.com">www.retiew.com</a> Engineers • Planners • Surveyors • Landscape Architects	
FERC ALIGNMENT SHEET PLANS FOR THE <b>PECO ENERGY COMPANY</b> <b>BRANDON SHORES RETIREMENT</b> <b>MITIGATION PROJECT</b> PEACH BOTTOM TOWNSHIP YORK COUNTY, PA		DATE: 08/15/24 SHEET NO. 2 OF 8 DWG. NO. 0310001291	

**LEGEND**

- Right-of-Way Line
- Existing Centerline Circuit
- Existing Calpine Waterline
- Edge of Pavement
- Edge of Stone
- Curb Line
- Guide Rail
- Fence
- Building
- Riprap Stone Area
- Planting Area
- Property Marker
- Unmarked Corner
- ⊕ Utility Pole
- ⊕ Guy Pole
- ⊕ Sign
- ⊕ Unidentified Manhole
- ⊕ Telecom Manhole
- ⊕ Waterline Manhole
- ⊕ Electric Box
- ⊕ Mail Box
- ⊕ Existing Transmission Structures
- ⊕ Proposed Acquisition Area

**COLOR LEGEND**

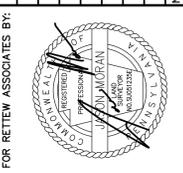
- Existing PECO Owned in Fee
- Existing PECO Transmission Line Easement
- Existing PECO Substation Easement
- Proposed  $\phi$  of Circuit
- Proposed Substation Acquisition (Fee)
- Proposed Substation Acquisition (Easement)
- Proposed Transmission Acquisition (Easement)
- Proposed Transmission Structure



SEE SHEET 2

SEE SHEET 4

NO.	DATE	REVISION
1	08/23/24	ADJUSTED EASEMENTS TO UPDATED CLS
2	08/26/24	UPDATES TO EXISTING CENTERLINES
3	09/03/24	EASEMENT ACQUISITION UPDATES



FOR RETIEW ASSOCIATES BY:  
 MANAGER: JASON MORAN  
 DESIGN BY: JIM DB  
 SURV. CHIEF: JIM DB  
 DRAWN BY: JIM DB  
 CHECKED BY: JIM DB  
 FIELDBOOK NO. DATA COLLECTOR: JIM DB  
 DRAWING REFERENCE: [www.retiew.com](http://www.retiew.com)

CLIENT:  
**PECO ENERGY COMPANY**  
 2301 MARKET STREET, N3-3  
 PHILADELPHIA, PA 19103

SCALE: 1"=200'

**RETIEW**  
 RETIEW Associates, Inc. Lancaster, PA 17603  
 Phone: (610) 718-8995  
 Email: [retiew@retiew.com](mailto:retiew@retiew.com)  
 Website: [www.retiew.com](http://www.retiew.com)

FERC ALIGNMENT SHEET PLANS  
 FOR THE  
**PECO ENERGY COMPANY**  
**BRANDON SHORES RETIREMENT**  
**MITIGATION PROJECT**  
 PEACH BOTTOM TOWNSHIP YORK COUNTY, PA

DATE: 08/15/24  
 SHEET NO. 3 of 8  
 DWG. NO. 0310001291



LEGEND	
	Right-of-Way Line
	Existing Centerline Circuit
	Existing Calpine Waterline
	Edge of Pavement
	Edge of Stone
	Curb Line
	Guide Rail
	Fence
	Building
	Riprap Stone Area
	Planting Area
	Property Marker
	Unmarked Corner
	Utility Pole
	Guy Pole
	Sign
	Unidentified Manhole
	Telecom Manhole
	Waterline Manhole
	Electric Box
	Mail Box
	Existing Transmission Structures
	Proposed Acquisition Area

COLOR LEGEND	
	Existing PECO Owned in Fee
	Existing PECO Transmission Line Easement
	Existing PECO Substation Easement
	Proposed E of Circuit
	Proposed Substation Acquisition (Fee)
	Proposed Substation Acquisition (Easement)
	Proposed Transmission Acquisition (Easement)
	Proposed Transmission Structure

SEE SHEET 3

FOR RETTEW ASSOCIATES BY:	
NO.	DATE
1	08/23/24
2	08/26/24
3	09/03/24

PROJECT:	0310001291-SH-BASE
MANAGER:	JASON MORAN
DESIGN BY:	JM
FIELDWORK NO. DATA COLLECTOR:	
SURV. CHIEF:	
DRAWN BY:	DB
CHKD BY:	JM

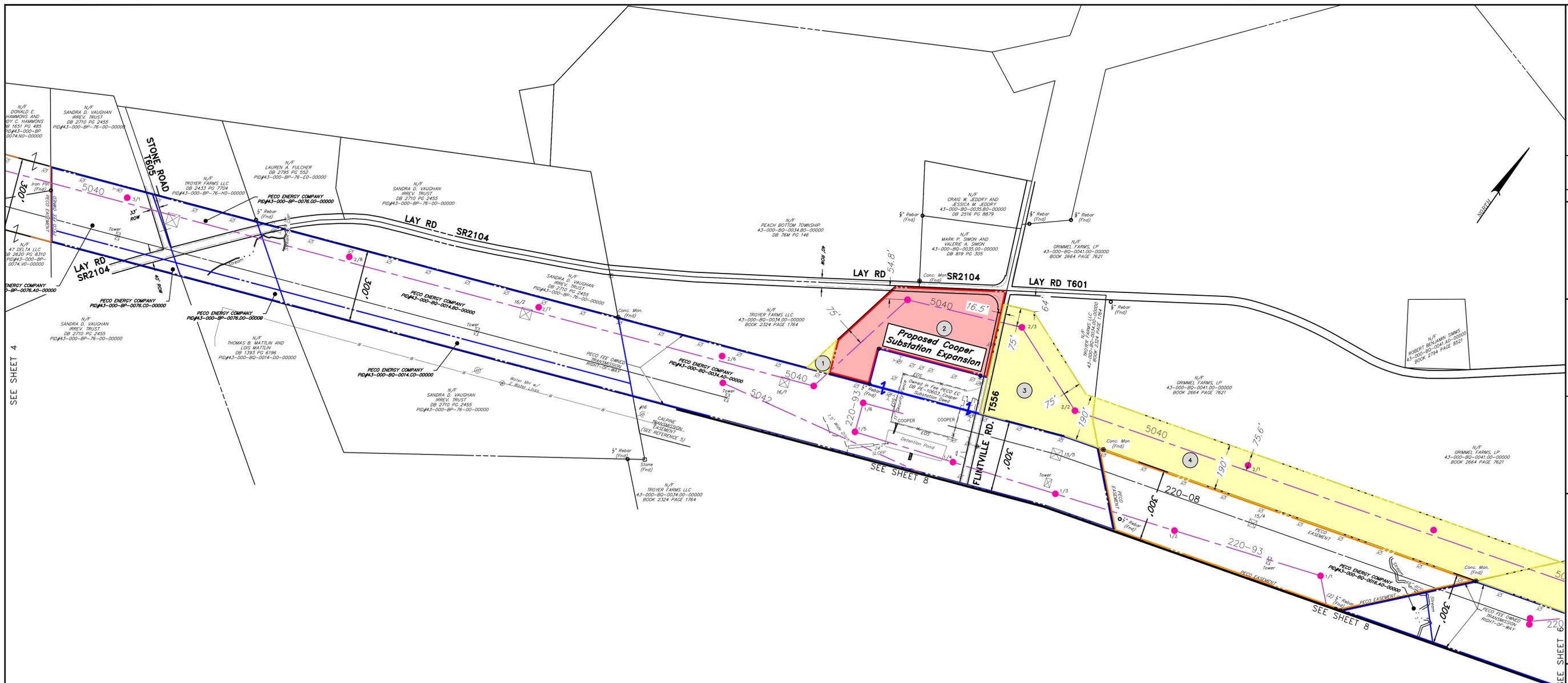
CLIENT:	PECO ENERGY COMPANY 2301 MARKET STREET, N3-3 PHILADELPHIA, PA 19103
DRAWING REFERENCE:	PECO EN 0310001291-SH-BASE
SCALE:	1"=200'
SCALE:	0 100' 200' 400' 600'

**RETTEW**  
 RETTEW Associates, Inc. Lancaster, PA 17603  
 Phone: (610) 738-8995  
 Email: rettew@rettew.com  
 Website: www.rettew.com

Engineers • Planners • Surveyors • Landscape Architects  
 Environmental Scientists

FERC ALIGNMENT SHEET PLANS  
 FOR THE  
**PECO ENERGY COMPANY**  
**BRANDON SHORES RETIREMENT**  
**MITIGATION PROJECT**  
 PEACH BOTTOM TOWNSHIP YORK COUNTY, PA

DATE: 08/15/24  
 SHEET NO. 4 OF 8  
 DWG. NO. 0310001291

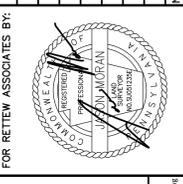


SEE SHEET 4

SEE SHEET 8

SEE SHEET 8

NO.	DATE	REVISION
1	08/23/24	ADJUSTED EASEMENTS TO UPDATED CLS
2	08/26/24	UPDATES TO EXISTING CENTERLINES
3	09/03/24	EASEMENT ACQUISITION UPDATES



MANAGER:	JASON MORAN
DESIGN BY:	JM
SURV. CHIEF:	JM
DRAWN BY:	DB
CHKD BY:	JM
FIELDBOOK NO. DATA COLLECTOR:	
CHKD BY:	JM

CLIENT  
**PECO ENERGY COMPANY**  
 2301 MARKET STREET, N3-3  
 PHILADELPHIA, PA 19103

**RETTEW**  
 RETTEW Associates, Inc. Lancaster, PA 17603  
 Phone: (610) 718-8995  
 Email: rettew@rettew.com  
 Website: www.rettew.com

FOR THE  
**PECO ENERGY COMPANY**  
**BRANDON SHORES RETIREMENT**  
**MITIGATION PROJECT**  
 PEACH BOTTOM TOWNSHIP YORK COUNTY, PA

DATE: 08/15/24  
 SHEET NO. 5 OF 8  
 DWG. NO. 0310001291

**LEGEND**

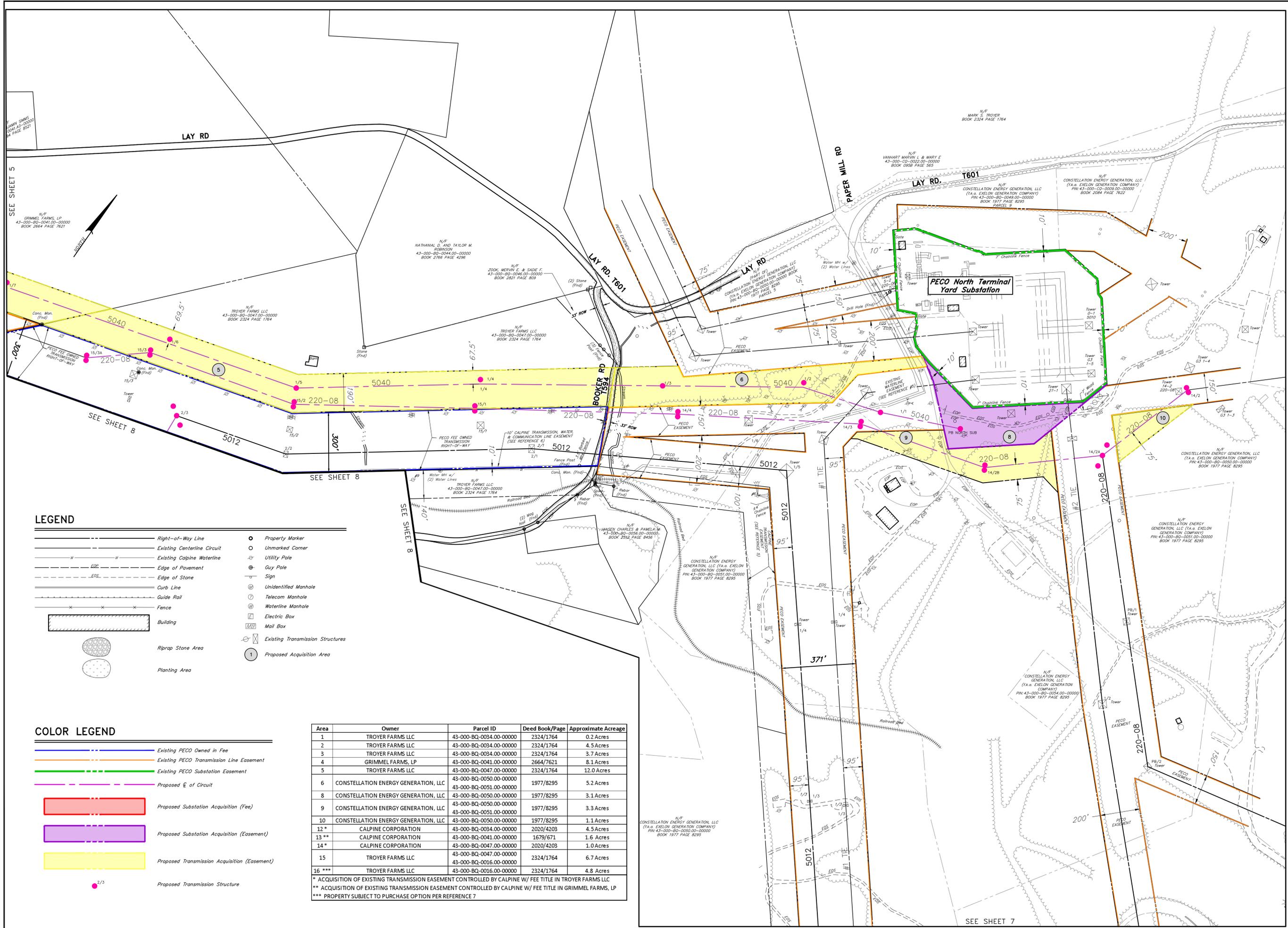
	Right-of-Way Line		Property Marker
	Existing Centerline Circuit		Unmarked Corner
	Existing Calpine Waterline		Utility Pole
	Edge of Pavement		Guy Pole
	Edge of Stone		Sign
	Curb Line		Unidentified Manhole
	Guide Rail		Telecom Manhole
	Fence		Waterline Manhole
	Building		Electric Box
	Riprap Stone Area		Mail Box
	Planting Area		Existing Transmission Structures
			Proposed Acquisition Area

**COLOR LEGEND**

	Existing PECO Owned in Fee		Proposed Substation Acquisition (Fee)
	Existing PECO Transmission Line Easement		Proposed Substation Acquisition (Easement)
	Existing PECO Substation Easement		Proposed Transmission Acquisition (Easement)
	Proposed E of Circuit		Proposed Transmission Structure

Area	Owner	Parcel ID	Deed Book/Page	Approximate Acreage
1	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	0.2 Acres
2	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	4.5 Acres
3	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	3.7 Acres
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5	TROYER FARMS LLC	43-000-BQ-0047.00-00000	2324/1764	12.0 Acres
6	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	5.2 Acres
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16***	TROYER FARMS LLC	43-000-BQ-0016.00-00000	2324/1764	4.8 Acres

\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN TROYER FARMS LLC  
 \*\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN GRIMMEL FARMS, LP  
 \*\*\* PROPERTY SUBJECT TO PURCHASE OPTION PER REFERENCE 7



**LEGEND**

	Right-of-Way Line		Property Marker
	Existing Centerline Circuit		Unmarked Corner
	Existing Calpine Waterline		Utility Pole
	Edge of Pavement		Guy Pole
	Edge of Stone		Sign
	Curb Line		Unidentified Manhole
	Guide Rail		Telecom Manhole
	Fence		Waterline Manhole
	Building		Electric Box
	Riprap Stone Area		Mail Box
	Planting Area		Existing Transmission Structures
			Proposed Acquisition Area

**COLOR LEGEND**

	Existing PECO Owned in Fee
	Existing PECO Transmission Line Easement
	Existing PECO Substation Easement
	Proposed E of Circuit
	Proposed Substation Acquisition (Fee)
	Proposed Substation Acquisition (Easement)
	Proposed Transmission Acquisition (Easement)
	Proposed Transmission Structure

Area	Owner	Parcel ID	Deed Book/Page	Approximate Acreage
1	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	0.2 Acres
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3	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	3.7 Acres
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14*	CALPINE CORPORATION	43-000-BQ-0047.00-00000	2020/4203	1.0 Acres
15	TROYER FARMS LLC	43-000-BQ-0047.00-00000	2324/1764	6.7 Acres
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\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN TROYER FARMS LLC  
 \*\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN GRIMMEL FARMS, LP  
 \*\*\* PROPERTY SUBJECT TO PURCHASE OPTION PER REFERENCE 7

**FOR RETIEW ASSOCIATES BY:**

**MANAGER:** JASON MORAN  
**DESIGN BY:** JIM DB  
**SURV. CHIEF:** JIM DB  
**DRAWN BY:** JIM DB

**CLIENT:** PECO ENERGY COMPANY  
 2301 MARKET STREET, N3-3  
 PHILADELPHIA, PA 19103

**DATE:** 08/15/24  
**SHEET NO.:** 6 of 8  
**DWG. NO.:** 0310001291

**REVISIONS:**

3	09/03/24	EASEMENT ACQUISITION UPDATES
2	08/26/24	UPDATES TO EXISTING CENTERLINES
1	08/23/24	ADJUSTED EASEMENTS TO UPDATED CLS

**SCALE:** 1"=200'  
 0 100' 200' 400' 600'

**REVIEW ASSOCIATES, INC.**  
 RETIEW Associates, Inc. Lancaster, PA 17603  
 Phone (800) 738-8395  
 Email: retiew@retiew.com  
 Website: www.retiew.com

**ENGINEERS:** PLORETTA • SPRINGER • LANDSCAPE ARCHITECTS  
 PLORETTA SPRINGER ARCHITECTS

**FOR THE:**  
**PECO ENERGY COMPANY**  
**BRANDON SHORES RETIREMENT**  
**MITIGATION PROJECT**  
 PEACH BOTTOM TOWNSHIP YORK COUNTY, PA

SEE SHEET 6

N/P  
CONSTELLATION ENERGY GENERATION, LLC  
(f.k.a. EXELON GENERATION COMPANY)  
PIN: 43-000-BQ-0054.00-00000  
BOOK 1977 PAGE 8295

(f.k.a. EXELON GENERATION COMPANY)  
PIN: 43-000-BQ-0054.00-00000  
BOOK 1977 PAGE 8295

PIN: 43-000-BQ-0050.00-00000 (PART OF)  
& 43-000-BQ-0000.00-00000  
CONSTELLATION ENERGY GENERATION, LLC  
(f.k.a. GENERATION COMPANY)  
BOOK 1977 PAGE 8295  
PARCEL 1

PIN: 43-000-BQ-0028.40-00000  
CONSTELLATION ENERGY GENERATION, LLC  
(f.k.a. EXELON GENERATION COMPANY)  
BOOK 1977 PAGE 8295  
PARCEL 3



### LEGEND

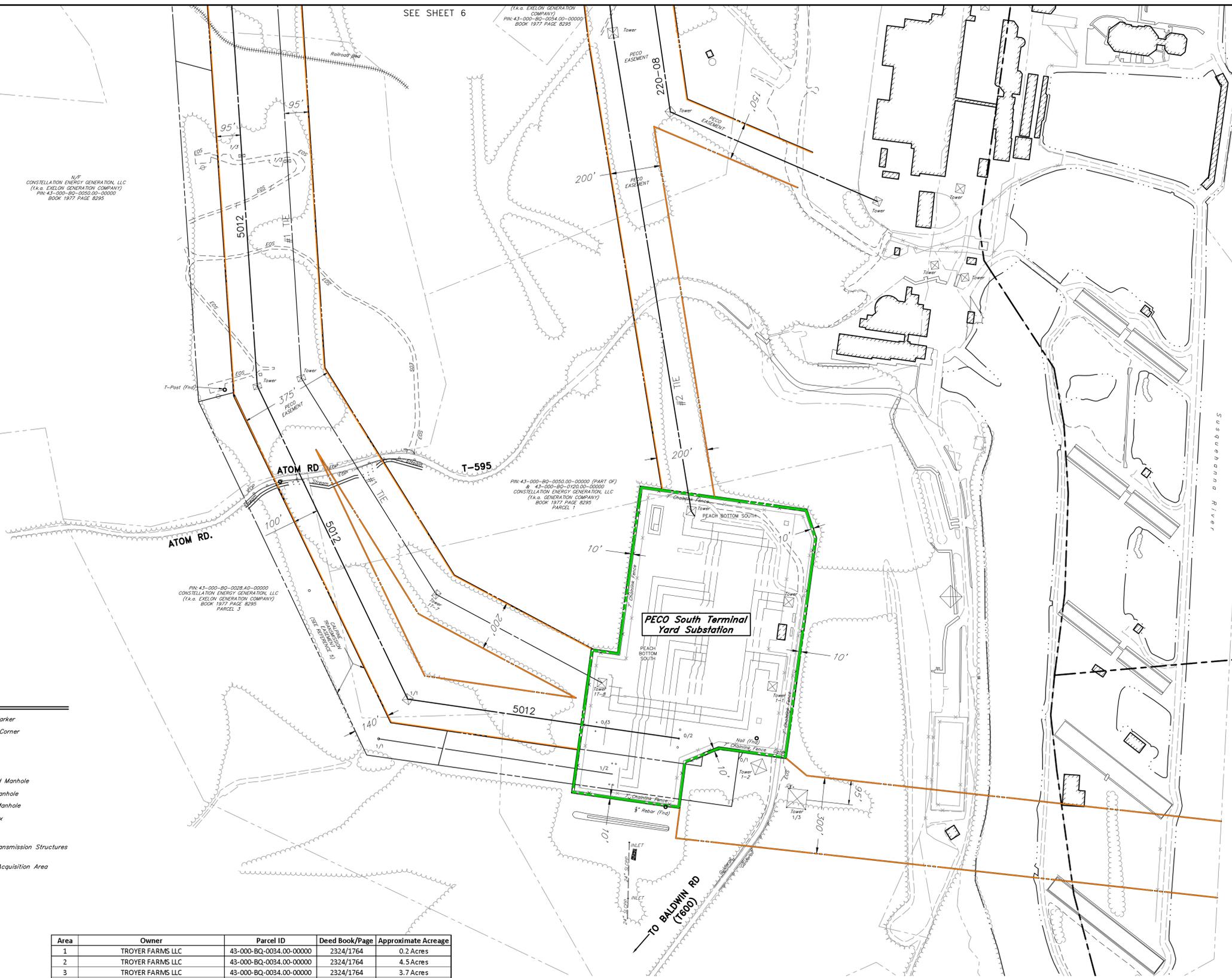
	Right-of-Way Line		Property Marker
	Existing Centerline Circuit		Unmarked Corner
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	Edge of Pavement		Guy Pole
	Edge of Stone		Sign
	Curb Line		Unidentified Manhole
	Guide Rail		Telecom Manhole
	Fence		Waterline Manhole
	Building		Electric Box
	Riprap Stone Area		Mail Box
	Planting Area		Existing Transmission Structures
			Proposed Acquisition Area

### COLOR LEGEND

	Existing PECO Owned in Fee
	Existing PECO Transmission Line Easement
	Existing PECO Substation Easement
	Proposed $\phi$ of Circuit
	Proposed Substation Acquisition (Fee)
	Proposed Substation Acquisition (Easement)
	Proposed Transmission Acquisition (Easement)
	Proposed Transmission Structure

Area	Owner	Parcel ID	Deed Book/Page	Approximate Acreage
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8	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0051.00-00000	1977/8295	3.1 Acres
9	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	3.3 Acres
10	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	1.1 Acres
12*	CALPINE CORPORATION	43-000-BQ-0034.00-00000	2020/4203	4.5 Acres
13**	CALPINE CORPORATION	43-000-BQ-0041.00-00000	1679/671	1.6 Acres
14*	CALPINE CORPORATION	43-000-BQ-0047.00-00000	2020/4203	1.0 Acres
15	TROYER FARMS LLC	43-000-BQ-0047.00-00000	2324/1764	6.7 Acres
16***	TROYER FARMS LLC	43-000-BQ-0016.00-00000	2324/1764	4.8 Acres

\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN TROYER FARMS LLC  
 \*\* ACQUISITION OF EXISTING TRANSMISSION EASEMENT CONTROLLED BY CALPINE W/ FEE TITLE IN GRIMMEL FARMS, LP  
 \*\*\* PROPERTY SUBJECT TO PURCHASE OPTION PER REFERENCE 7



<b>RETTEW ASSOCIATES, INC.</b> ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS 2301 MARKET STREET, N3-3 PHILADELPHIA, PA 19103 Phone: (800) 738-8395 Email: <a href="mailto:rettew@rettew.com">rettew@rettew.com</a> Website: <a href="http://www.rettew.com">www.rettew.com</a>	
<b>CLIENT</b> PECO ENERGY COMPANY 2301 MARKET STREET, N3-3 PHILADELPHIA, PA 19103	<b>FOR RETTEW ASSOCIATES BY:</b> MANAGER: JASON MORAN DESIGN BY: JIM DB SURV. CHIEF: JIM DB DRAWN BY: JIM DB CHECKED BY: JIM DB
<b>REVISED:</b> 03/10/2021 SH-BASE 03/10/2021 SH-TAKE	<b>DRAWING REFERENCE:</b> 1 08/23/24 ADJUSTED EASEMENTS TO UPDATED CLS 2 08/26/24 UPDATES TO EXISTING CENTERLINES 3 09/03/24 EASEMENT ACQUISITION UPDATES
<b>NO.</b> 1 <b>DATE</b> 08/15/24	<b>REVISION</b>
<b>SCALE</b> 1" = 200' 0 100' 200' 400' 600'	
<b>FERC ALIGNMENT SHEET PLANS FOR THE PECO ENERGY COMPANY BRANDON SHORES RETIREMENT MITIGATION PROJECT</b> PEACH BOTTOM TOWNSHIP YORK COUNTY, PA	

**LEGEND**

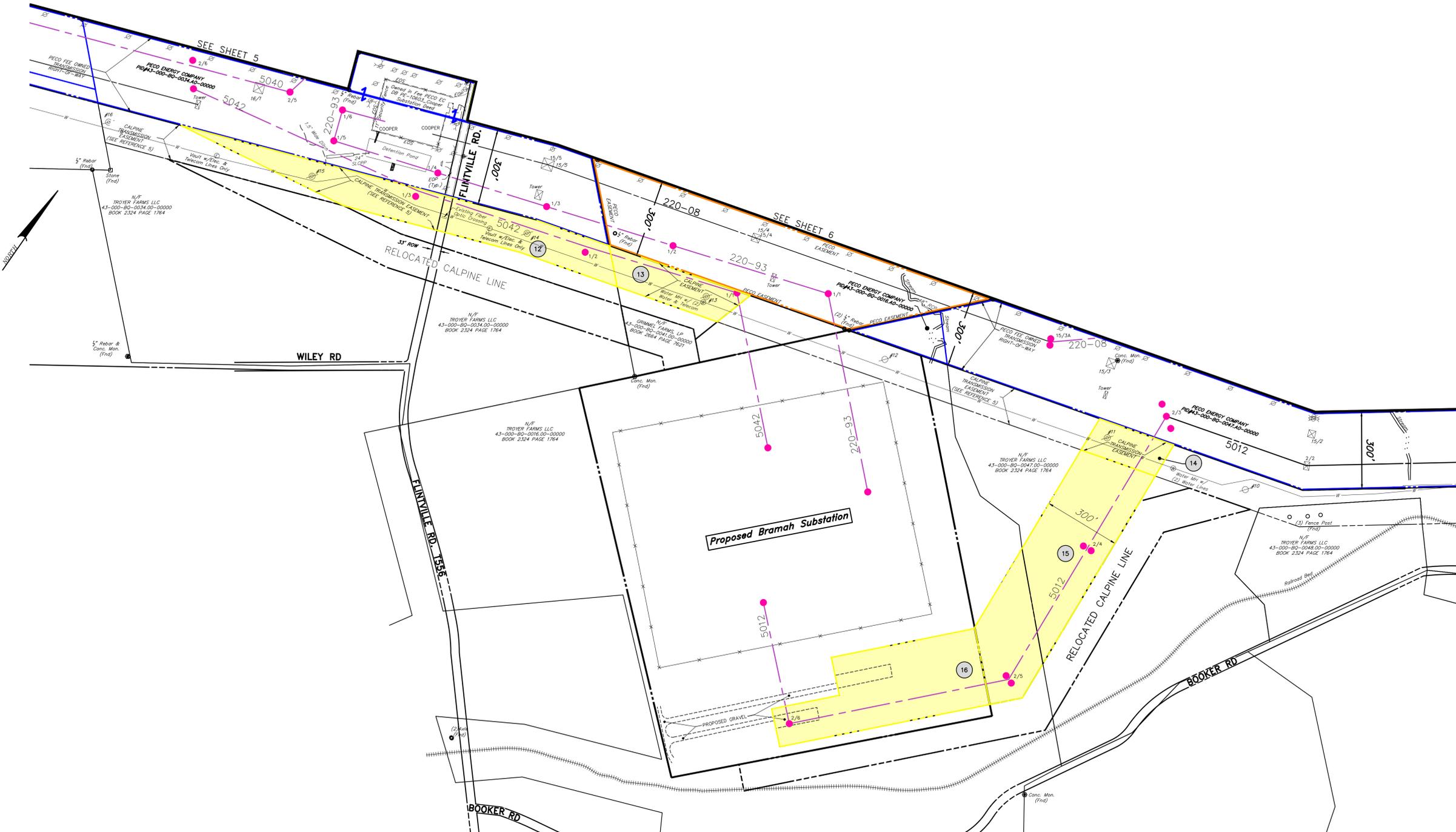
- Right-of-Way Line
- Existing Centerline Circuit
- Existing Calpine Waterline
- Edge of Pavement
- Edge of Stone
- Curb Line
- Guide Rail
- Fence
- Building
- Riprap Stone Area
- Planting Area
- Property Marker
- Unmarked Corner
- Utility Pole
- Guy Pole
- Sign
- Unidentified Manhole
- Telecom Manhole
- Waterline Manhole
- Electric Box
- Mail Box
- Existing Transmission Structures
- Proposed Acquisition Area

**COLOR LEGEND**

- Existing PECO Owned in Fee
- Existing PECO Transmission Line Easement
- Existing PECO Substation Easement
- Proposed  $\phi$  of Circuit
- Proposed Substation Acquisition (Fee)
- Proposed Substation Acquisition (Easement)
- Proposed Transmission Acquisition (Easement)
- Proposed Transmission Structure

Area	Owner	Parcel ID	Deed Book/Page	Approximate Acreage
1	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	0.2 Acres
2	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	4.5 Acres
3	TROYER FARMS LLC	43-000-BQ-0034.00-00000	2324/1764	3.7 Acres
4	GRIMMEL FARMS, LP	43-000-BQ-0041.00-00000	2664/7621	8.1 Acres
5	TROYER FARMS LLC	43-000-BQ-0047.00-00000	2324/1764	12.0 Acres
6	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000 43-000-BQ-0051.00-00000	1977/8295	5.2 Acres
8	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	3.1 Acres
9	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000 43-000-BQ-0051.00-00000	1977/8295	3.3 Acres
10	CONSTELLATION ENERGY GENERATION, LLC	43-000-BQ-0050.00-00000	1977/8295	1.1 Acres
12*	CALPINE CORPORATION	43-000-BQ-0034.00-00000	2020/4203	4.5 Acres
13**	CALPINE CORPORATION	43-000-BQ-0041.00-00000	1679/671	1.6 Acres
14*	CALPINE CORPORATION	43-000-BQ-0047.00-00000	2020/4203	1.0 Acres
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 \*\*\* PROPERTY SUBJECT TO PURCHASE OPTION PER REFERENCE 7



FOR RETIEW ASSOCIATES BY:

MANAGER: JASON MORAN  
 DESIGN BY: CHD BY: JIM DB  
 SURV. CHIEF: JIM DB  
 DRAWN BY: JIM DB

CLIENT: PECO ENERGY COMPANY  
 2301 MARKET STREET, N3-3  
 PHILADELPHIA, PA 19103

SCALE: 1"=200'

RETIEW Associates, Inc. Lancaster, PA 17603  
 Phone: (610) 738-8395  
 Email: retiew@retiew.com  
 Website: www.retiew.com

FERC ALIGNMENT SHEET PLANS  
 FOR THE  
**PECO ENERGY COMPANY**  
**BRANDON SHORES RETIREMENT**  
**MITIGATION PROJECT**  
 PEACH BOTTOM TOWNSHIP YORK COUNTY, PA

DATE: 08/15/24  
 SHEET NO. 8 OF 8  
 DWG. NO. 0310001291

**Attachment 13:**  
**Representative Property Owner Letter and**  
**Notices**



peco<sup>SM</sup>

AN EXELON COMPANY

Attachment 13

Daniel F. Pacheco  
PECO Energy Company  
2301 Market Street, N3-3  
Philadelphia, PA 19103

[Daniel.Pacheco@exeloncorp.com](mailto:Daniel.Pacheco@exeloncorp.com)

February 7, 2024

Via Federal Express # \_\_\_\_\_

<<Name>>

<<Address 1>>

<<Address 2>>

Re: Pennsylvania Public Utility Commission Required Landowner Notice

Dear <<Name>>,

You are receiving this letter because public records indicate you own property along an overhead electric transmission line route being proposed for transmission system upgrades to address system reliability problems (the "Brandon Shores/Dominion Project" or the "Project").

PJM Interconnection, LLC ("PJM"), the regional transmission organization responsible for managing the high-voltage electric grid for the District of Columbia and 13 states, including Pennsylvania and Maryland, has determined that because of the impending retirement by Talen Energy of the Brandon Shores coal-fired generating facility in Curtis Bay, Maryland, unprecedented forecast data center load growth in the Dominion zone (Northern Virginia), among other factors, there is an urgent need to upgrade portions of the transmission system in Pennsylvania and Maryland in order to prevent serious and widespread regional reliability problems including overloads and voltage issues. PJM has selected PECO Energy Company ("PECO") to perform required transmission system upgrades in Pennsylvania for the Project. Work will begin upon the receipt of all necessary regulatory approvals and is expected to be completed in December 2028.

PECO's portion of the Project includes upgrades to its existing transmission lines extending approximately 6.1 miles from its Peach Bottom South, Peach Bottom North and Cooper substations in York County Pennsylvania to the Pennsylvania/Maryland border consisting of new 500kV and 230kV circuits, modifications to existing transmission circuits and expansion of Peach Bottom North substation.

The Pennsylvania Public Utility Commission's regulations require a 15-day landowner notification prior to the start of the right-of-way acquisition process. In the near future, a representative from PECO Real Estate will be contacting you about acquiring easement or fee land interests needed for the safe construction, operation and maintenance of the Project.

Since you are a landowner along the Project route, please review the enclosed required notices with information about Land Agent Practices, Right-of-Way Maintenance Practices, Eminent Domain Power and Code of Conduct for Right-Of-Way Representatives.

For PECO to design these transmission line upgrades, various surveys and tests need to be performed. As such, PECO is requesting permission to access your property for purposes of completing the surveys and tests needed. Please review, complete and sign the attached Access Permit - Survey Permission form, and return in the enclosed self-addressed envelope or by email within 15 days of the date of this letter.

If you have any questions, don't hesitate to call or email me at 215-841-5193 or [daniel.pacheco@exeloncorp.com](mailto:daniel.pacheco@exeloncorp.com).

Sincerely,

Daniel F. Pacheco, Manager Land Acquisition

**NOTICE**  
**LAND AGENT PRACTICES**

PJM Interconnection, LLC (“PJM”) the regional transmission organization responsible for managing the high-voltage electric grid for the District of Columbia and 13 states, including Pennsylvania and Maryland, has determined that because of the impending retirement by Talen Energy of the Brandon Shores coal-fired generating facility in Curtis Bay, Maryland, unprecedented forecast data center load growth in the Dominion zone (Northern Virginia), among other factors, there is an urgent need to upgrade portions of the transmission system in Pennsylvania and Maryland in order to prevent serious and widespread regional reliability problems including overloads and voltage issues (the “Brandon Shores/Dominion Project” or the “Project”). PJM has selected PECO Energy Company (“PECO”) to perform required transmission system upgrades in Pennsylvania for the Project. Work will begin upon the receipt of all necessary regulatory approvals and is expected to be completed in December 2028.

As part of the Project, PECO is planning to replace its existing 5.5-mile 500 kV and 4.2-mile 230 kV transmission line circuits in York County, Pennsylvania extending from PECO’s Peach Bottom South substation and Cooper Substation to the Pennsylvania/Maryland border with three new 500 kV circuits and to expand the Peach Bottom North 500 kV/230 kV substations located in York County, Pennsylvania. In addition, PECO plans to construct a new 230 kV connecting transmission line between PECO’s existing Cooper substation and a new 500 kV/230 kV North Delta substation that Transource Pennsylvania, LLC plans to construct and operate as part the Project. PECO will also construct a new North Delta-Cooper 230 kV transmission line to extend approximately 0.5 miles to connect the existing Cooper substation and the new North Delta substation both located near Delta, Pennsylvania. Two existing 500 kV lines from Peach Bottom South will be modified to tie-into the North Delta Substation.

Since a field survey and detailed engineering has not been completed, the physical dimensions of the proposed new transmission lines and other improvements and the type and height of supporting structures to be used cannot be precisely determined at this time. However, based on experience, it is expected that the structures will normally be approximately 180 feet in height. There may be isolated physical conditions that would require either higher or lower structures than those mentioned. At this time, we do not know the number of structures to be placed on any properties.

Since the Project construction could affect your property, a representative from PECO will contact you in the near future to discuss PECO's plans as they may affect your property.

The Pennsylvania Public Utility Commission requires that PECO provide you the following contact information for concerns regarding the practices of the land agents acting on behalf of PECO in connection with the proposed construction of the transmission lines.

Pennsylvania Public Utility Commission Bureau of Consumer Services  
400 North Street  
Keystone Bldg.  
Harrisburg PA 17120  
1-800-692-7380

Patrick M. Cicero  
Pennsylvania Consumer Advocate Pennsylvania Office of  
Consumer Advocate  
555 Walnut Street  
5th Floor Forum Place Harrisburg, PA 17101-1923  
Phone: 717-783-5048 or toll free 800-684-6560 (PA only)  
Fax: 717-783-7152  
Email: [consumer@paoca.org](mailto:consumer@paoca.org)

**NOTICE**  
**RIGHT-OF-WAY MAINTENANCE PRACTICES**

The Pennsylvania Public Utility Commission requires that PECO Energy Company ("PECO") give you the following information on the RIGHT-OF-WAY MAINTENANCE PRACTICES for overhead electric transmission lines to be constructed as part of the Brandon Shores/Dominion Project:

The methods currently used by PECO will be made available to you for your inspection upon request. If you wish further information concerning right-of-way maintenance methods, you may contact the person named in the cover letter. You may discuss with this person, either before or during negotiation of the right-of-way agreement, these methods and any other questions you may have about right-of-way maintenance.

Once PECO has constructed an electric transmission line on a right-of-way across your land, it must maintain the right-of-way free of tall-growing trees and brush which might impair the reliability of electric service, the safety of the line, and access to the line or its towers. PECO or its contractors may remove and control tall-growing trees and brush by several methods: hand cutting of trees, limbs, and brush; mechanical cutting with chain saws or motorized cutting machines; and application of herbicide. PECO must confine its maintenance activities to the approved right-of-way across your land, except where tall-growing trees or brush or their root systems grow into the right-of-way from adjoining land and constitute a threat to the electric transmission line and its structures.

If you believe that the maintenance method(s) used by PECO would raise problems with your use of your land adjacent to the right-of-way, it is your responsibility as the landowner to bring this to the attention of PECO before you sign the right-of-way agreement.

PECO has the responsibility to maintain its rights-of-way, and regular maintenance must occur. Although you as the landowner cannot determine whether maintenance will occur, your right-of-way agreement may specify certain conditions on the performance of the maintenance program which are important to you. These conditions can be part of the negotiations between you and PECO for your land since a right-of-way agreement is a legal contract between the landowner and PECO. It is important for you to also understand that the maintenance methods used by PECO may change over time as the costs of maintenance or the methods of performing maintenance change. You may want to specify in your right-of-way agreement that PECO inform you of changes in its maintenance methods or in the maintenance schedule for your land.

The provisions of the right-of-way agreement are enforceable in the local Court of Common Pleas. The right-of-way agreement cannot be enforced by the Pennsylvania Public Utility Commission. Any claims for damage resulting from improper maintenance of the right-of-way must be settled with PECO, its contractors, or in the local Court of Common Pleas at your own expense. The Pennsylvania Public Utility Commission cannot award damages for violations of the right-of-way agreement.

**NOTICE**  
**EMINENT DOMAIN POWER**

The Pennsylvania Public Utility Commission requires that PECO Energy Company ("PECO") give you the following information:

PJM Interconnection, LLC ("PJM"), the regional transmission organization responsible for managing the high-voltage electric grid for the District of Columbia and 13 states, including Pennsylvania and Maryland, has determined that because of the impending retirement by Talen Energy of the Brandon Shores coal-fired generating facility in Curtis Bay, Maryland, unprecedented forecast data center load growth in the Dominion zone (Northern Virginia), among other factors, there is an urgent need to upgrade portions of the transmission system in Pennsylvania and Maryland in order to prevent serious and widespread regional reliability problems including overloads and voltage issues (the "Brandon Shores/Dominion Project" or the "Project"). PJM has selected PECO to perform required transmission system upgrades in Pennsylvania for the Project. Work will begin upon the receipt of all necessary regulatory approvals and is expected to be completed in December 2028.

As part of the Project, PECO is planning to replace existing 5.5-mile 500 kV and 4.2-mile 230 kV transmission line circuits in York County, Pennsylvania extending from PECO's Peach Bottom South substation and Cooper Substation to the Pennsylvania/Maryland border with three new 500 kV circuits and to expand the Peach Bottom North 500 kV/230 kV substations located in York County, Pennsylvania. In addition, PECO plans to construct a new 230 kV connecting transmission line between PECO's existing Cooper substation and a new 500 kV/230 kV North Delta substation that Transource Pennsylvania, LLC plans to construct and operate as part the Project. PECO will also construct a new North Delta-Cooper 230 kV transmission line to extend approximately 0.5 miles to connect the existing Cooper substation and the new North Delta substation both located near Delta, Pennsylvania. Two existing 500 kV lines from Peach Bottom South will be modified to tie-into the North Delta Substation.

Since a field survey and detailed engineering has not been completed, the physical dimensions of the proposed new 500 KV transmission lines and the type and height of supporting structures to be used cannot be precisely determined at this time. However, based on experience, it is expected that the structures will normally be approximately 180 feet in height. There may be isolated physical conditions that would require either higher or lower structures than those mentioned. At this time, we do not know the number of structures to be placed on any properties.

Since the routes of the transmission system upgrades and new connecting transmission lines for the Project presently under consideration could affect your property, a representative of PECO will contact you in the near future to discuss PECO's plans as they may affect your property. To better prepare you for these discussions and to avoid possible misunderstandings, we want to take this opportunity to inform you of your legal rights and the legal rights and duties of PECO with regard to this project. You have the right to have legal counsel represent you in these negotiations. You do not have to sign any agreement without the advice of counsel. If you do not know an attorney, you may contact your local bar association.

***MUST YOU ACCEPT AN OFFER MADE BY PECO FOR YOUR PROPERTY?***

No. You may refuse to accept it. However, the PECO will have the power to take property by eminent domain, subject to the approval of the Public Utility Commission, for the construction of transmission lines if the PECO is unable to negotiate an agreement to buy a right-of-way. If your property is condemned, you must be paid "just compensation." "Just compensation" has been defined by the courts in Pennsylvania as the difference between the fair market value of your property before condemnation, unaffected by the condemnation, and the fair market value of your remaining property after condemnation, as affected by the condemnation.

***CAN PECO CONDEMN YOUR HOUSE?***

No. PECO cannot condemn your house or a reasonable "curtilage" around your house. Generally, curtilage includes the land or buildings within 300 feet of your house which are used for your domestic purposes. However, the 300-foot limit does not automatically extend beyond the homeowner's property line.

***DO YOU HAVE A RIGHT TO A PUBLIC HEARING IF PECO SEEKS TO CONDEMN YOUR PROPERTY?***

Yes. If PECO seeks to have your property condemned, it must first apply to the Pennsylvania Public Utility Commission for a certificate finding the condemnation to be necessary or proper for the service, accommodation, convenience, or safety of the public. The Commission will then hold a public hearing. As the landowner whose property may be condemned, you are a party to the proceeding and may retain counsel, present evidence, and/or testify yourself in opposition to the application for a certification. If you wish to testify at the public hearing, you should make your intention known by letter to Secretary, Pennsylvania Public Utility Commission, 400 North Street, Harrisburg, Pennsylvania 17120.

If the Commission approves PECO's application for a certificate finding the condemnation in the public interest, then PECO may proceed before the local Court of Common Pleas to condemn your land. If the Commission denies PECO's application, it cannot condemn your land. If you retain an attorney to represent you before the Commission, you must do so at your own expense.

The Commission will not decide how much money you should receive if your land is condemned. The only issue the Commission will decide is whether the condemnation serves the public interest. If the Commission approves PECO's application for condemnation, the amount of money to which you are entitled will be determined by a local Board of View or the Court of Common Pleas. However, you may at any time make an agreement with PECO as to the amount of damages you are to be paid.

## **Code of Conduct for Right-of-Way Representatives**

This Code of Conduct applies to all communications and interactions with property owners and occupants of property by all right-of-way employees, agents and subcontractors representing PECO in the negotiation of the acquisition of right-of-way (the "Project") and the performance of surveying, environmental assessments and other activities for the Project.

1. All communications with property owners and occupants of property must be factually correct and made in good faith.
  - a. Do not make false or misleading statements. If you do not know the answer to a question, do not speculate. Tell the property owner that you will investigate the question and provide a timely answer.
  - b. Follow-up in a timely manner on all commitments to provide additional information.
  - c. Do not misrepresent any fact.
  - d. Do not send written communications (to a landowner or to Project personnel) suggesting an agreement has been reached if it has not.
  - e. Do not use phrases like "done deal" or "99 percent sure" or make similar statements suggesting that all is written in stone.
  - f. Do not suggest the Project is required for national or homeland security reasons or has been authorized by the federal government.
  - g. Do not send written communications suggesting an agreement has been reached when, in fact, an agreement has not been reached.
  
2. All communications and interactions with property owners and occupants of property must be respectful and reflect fair dealing practices.
  - a. PECO representatives, contractors, and agents promptly must identify themselves by showing their employment photo I.D. badge and have it displayed at all times while working on the property.
  - b. PECO representatives, contractors, and agents contacting a property owner by telephone shall promptly identify themselves as representing PECO.
  - c. Do not engage in behavior that may be considered harassing, coercive, manipulative, intimidating or causing undue pressure.
  - d. All communications by a property owner, whether in person, by telephone or in writing, in which the property owner indicates that he or she does not want to negotiate or does not want to give permission for surveying or other work on his or her property must be respected and politely accepted without argument. Unless specifically authorized by the Land Acquisition Manager, do not contact the property owner again regarding negotiations or requests for permission.
  - e. When asked to leave property, promptly leave and do not return unless specifically authorized by the Land Acquisition Manager.

- f. Obtain written permission from the property owner and tenants to enter property for purposes of surveying or conducting environmental assessments or other activities. Clearly explain to the property owner the scope of work to be conducted based on the permission given. Attempt to notify the occupant of the property each time you enter the property based on this permission.
  - g. Do not represent that a relative, neighbor and/or friend supports or opposes the Project, even if it's true.
  - h. Do not suggest that any person should be ashamed of or embarrassed by his or her opposition to the Project or that such opposition is inappropriate.
  - i. Do not argue with property owners about the merits of the Project.
  - j. Do not suggest that an offer is "take it or leave it."
  - k. Do not threaten to call law enforcement officers or obtain court orders.
  - l. Do not threaten the use of eminent domain.
  - m. Avoid discussing a property owner's failure to note an existing easement when purchasing the property and other comments about the property owner's acquisition of the property.
  - n. Do not give the property owner any legal advice. Instead advise that they contact an attorney about any legal matters or questions.
  - o. If threatened, promptly and politely leave the property and report the issue to the Land Acquisition Manager.
3. All communications and interactions with property owners and occupants of property must respect the privacy of property owners and other persons.
- a. Do not discuss your negotiations or interactions with other property owners or other persons.
  - b. Do not ask relatives, neighbors and/or friends to influence the property owner or any other person.
  - c. Avoid discussions of personal matters about the property owner, others and yourself.

**ACCESS PERMIT - SURVEY PERMISSION  
BRANDON SHORES/DOMINION PROJECT**

I/We hereby give PECO Energy Company ("PECO"), a Pennsylvania corporation, its affiliates, agents, employees, contractors and to the appropriate federal, state and local agencies, archeologists, biologists, and/or environmental scientists, permission to enter upon my/our premises to conduct civil, environmental, cultural resource surveys, soundings, drillings, appraisals, examination and all other surveys and tests necessary (including the right to drill holes for testing soil and bedrock) for the proposed electric transmission line route.

PECO has the rights to trim or cut vegetation necessary for survey purposes and agrees to pay the prevailing market price for standing timber for any marketable trees cut down in the course of such survey. PECO will be responsible for any damage done to such property and further agrees to indemnify against all liability to third persons caused by negligent acts of PECO's employees or representatives while on the property.

**Property Location/Tax Parcel ID:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Owner of Record:** \_\_\_\_\_

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Name)

**Mailing Address:** \_\_\_\_\_  
(Address) (City) (State) (ZIP)

\_\_\_\_\_  
(Preferred Contact Number)

\_\_\_\_\_  
(Alternate Number/Method of Contact)

\_\_\_\_\_  
(E-Mail Address)

**Attachment 14:**  
**Proof of Public Notice of the Project**

# Immigrant spouses praise Biden's citizenship plan

**Kristina Cooke and Ted Hesson**  
REUTERS

WASHINGTON – When news broke of President Joe Biden's plan to provide a path to citizenship for certain immigrants who entered the country illegally and are married to U.S. citizens, Pennsylvania-based immigration lawyer Bridget Cambria didn't need long to think of clients it could help.

Over the years, she had met with many such couples, explaining to them how difficult it was going to be for the immigrant spouse to get U.S. legal permanent residency. The process, in most cases, required the spouse to leave the country, potentially enduring years of family separation before being eligible to return.

Biden's move on Tuesday would allow hundreds of thousands of spouses of U.S. citizens to legalize their immigration status without leaving the United States is a huge development for the families involved, but it is also a high-stakes political gambit in an election year.

Biden, a Democrat who is seeking another term in November, has struggled with high levels of illegal immigration at the U.S.-Mexico border. His Republican challenger Donald Trump has pushed a message that immigrants are committing more violent crimes than U.S. citizens, despite statistics to the contrary.

Biden has walked a political tightrope in recent months – toughening his stance on border enforcement while trying not to alienate liberal voters and Latinos. The Democrat beat Trump in 2020 when Biden pledged a more humane approach to immigration, a sharp contrast to Trump's four years in office.

When it comes to immigration policy, registered voters prefer Trump over Biden by a 17 percentage point margin, according to a Reuters/Ipsos poll conducted in mid-May.

One of the couples Cambria called was Carmen Miranda, 56, and her husband Francisco Cortez, 52, of Reading, Pennsylvania.

Miranda met Cortez, who is from



**DACA recipient Javier Quiroz Castro, right, introduces President Joe Biden on Tuesday at the White House. The executive action announced Tuesday would allow spouses of U.S. citizens to legalize their immigration status without leaving the country.**

ANNA ROSE/REUTERS

Mexico, through a friend when she was in her early 20s. He had entered the country illegally in 1987, and she was a single mother of two young children. They dated for several years before getting married in 2003.

Miranda, who has multiple sclerosis and dwarfism and depends on Cortez to support her, said she was excited when Cambria called her with the news.

"We waited and waited for so, so long," Miranda said. "I apologize if I start crying."

Genaro Vicencio, 24, who crossed the border from Mexico when he was 10 years old, met his American wife, Cindy Maduena, when they were both teenagers. They have a 6-year-old son.

Vicencio, of Temple, Pennsylvania, said he has constantly feared that he would have to leave the U.S. for a long time and his young son would grow up without a father. He is still trying to comprehend the magnitude of the announcement for his family, he said.

Vicencio is hoping that obtaining legal status will enable him to expand his painting and electrician businesses and access business loans, he said.

But most of all, he said, he is happy to build a stable future in the U.S.



*This is going to be fun!*  
**JUNE 20-22, 2024**

Prepare for three fabulous days of fun in York County filled with exclusive experiences including behind-the-scenes tours, delicious tastings, live cooking demonstrations, workshops, and plenty of surprises!

*Enter to Win!*

Download your **FREE** digital passport from Explore York for information on all of the Makers Spirit experiences. In addition to details on locations, hours, and ticketing links, you'll have the chance to win great prizes when you use your smart phone to check in.





Get more details...

[YorkPA.org/events/makers-spirit-event](https://YorkPA.org/events/makers-spirit-event)



yorkpa.org | have it made here.



## You're invited.

PECO will host a public open house to discuss an upcoming electric transmission upgrade project in the area of Peach Bottom Township.

**When:** Tuesday, June 25 from 6-8 p.m.

**Where:** Delta Peach Bottom Elementary School, 1081 Atom Road in Delta, Pennsylvania

During the open house you can meet one-on-one with the project team, ask questions specific to your property, and provide feedback to PECO.

PECO will seek the necessary authorizations to begin construction from the Pennsylvania Public Utility Commission at a later date.

Visit [peco.com/pbproject](https://peco.com/pbproject) for more information about the project. For any questions, please email [pecopbproject@exeloncorp.com](mailto:pecopbproject@exeloncorp.com).





Sean O'Brien, president of the International Brotherhood of Teamsters, has been asked to speak at both the Republican and Democrat national conventions, a spokesperson for the union said. BRENDAN MCDERMID/REUTERS FILE

## Teamsters president agrees to speak at RNC next month

Nandita Bose  
REUTERS

WASHINGTON – The president of the International Brotherhood of Teamsters will speak at the Republican National Convention next month in Milwaukee, former President Donald Trump said in a post on his Truth Social platform on Friday.

Trump said the Teamsters president, Sean O'Brien, had "accepted my invitation to speak at the RNC Convention in Milwaukee."

The 1.3 million-member influential labor union has yet to endorse a candidate in the presidential election. It endorsed President Joe Biden, a Democrat, in 2020.

Kara Deniz, a spokesperson for the union, said O'Brien asked to speak at both the RNC and the Democratic National Convention, which will be held in Chicago in August.

"The Teamsters are excited that former President Trump has extended this invitation, and we will be equally excited if and when the DNC chooses to do the same," she said.

It would be unusual in the current polarized political climate for an individual to speak at both conventions.

Earlier this year, O'Brien met both Biden and Trump, and said the union would conduct a lot of polling to make a decision on its endorsement, "most likely after the (Republican and Democratic) conventions."

Trump and Biden are both courting votes from rank-and-file members of organized labor, whose support in the Nov. 5 election could be crucial in battleground states such as Michigan, Wisconsin and Pennsylvania.

Biden, who has described himself as the most labor-friendly president in history and who turned up at a picket line in Michigan during the autoworkers strike last fall, has already received significant organized labor backing with early endorsements from the AFL-CIO and the United Auto Workers.

Trump has been trying to make inroads into Biden's support among organized labor heading into the general election, as he works to win over more blue-collar workers, who helped fuel his 2016 victory.

The Teamsters is one of the country's largest unions and represents truck drivers, dockworkers, airline pilots, government employees and many other sectors.

## Texan: Put Bible rules in public school classrooms

Hogan Gore

Austin American-Statesman  
USA TODAY NETWORK

AUSTIN, Texas – After it missed a key legislative deadline last year, a bill to mandate the display of the Ten Commandments in every public school classroom in Texas died. On Thursday, Lt. Gov. Dan Patrick vowed to resurrect the proposal.

Patrick, who presides over the Texas Senate, expressed his anger on X, formerly Twitter, that a Louisiana law signed by Republican Gov. Jeff Landry on Wednesday became the first successful legislation in the nation to mandate the Ten Commandments be posted in a legible font in each of that state's public classrooms.

"Texas WOULD have been and SHOULD have been the first state in the nation to put the 10 Commandments back in our schools," Patrick wrote.

Similar to Louisiana's law, Senate Bill 1515 would have required public classrooms to "display in a conspicuous place" a poster or framed copy of the Ten Commandments at least 16 inches wide and 20 inches tall.

The bill by state Sen. Phil King advanced from the Senate along party lines last spring. The House Committee on Public Education then advanced the Senate bill for consideration by the whole chamber but ended up missing the legislative deadline for a vote.

"SB 1515 will bring back this historical tradition of recognizing America's heritage, and remind students all across Texas of the importance of a fundamental foundation of American and Texas law: the Ten Commandments," Patrick said Thursday. "I will pass the 10 Commandments Bill again out of the Senate next session."

Possible issues with the proposal include First Amendment concerns over mandating religious speech in schools and the deference being given to Christianity over other religions.

The potential addition of the foundational Judeo-Christian principles to Texas' classrooms was one of several proposals advancing from Patrick's



A tablet of the Ten Commandments stands on the Texas Capitol grounds in Austin. LARRY KOLVOORD/AUSTIN AMERICAN-STATESMAN FILE

AUSTIN AMERICAN-STATESMAN FILE

chamber last year that would have increased religious influence in public schools, including a failed effort to allot time during the school day for students to pray and read the Bible.

Lawmakers did pass Senate Bill 763 to allow public schools to spend school safety funding to employ chaplains to serve as counselors and oversee mental health programs.

In response to Louisiana's move, the American Civil Liberties Union, the ACLU's Louisiana chapter, Americans United for Separation of Church and State and the Freedom from Religion Foundation condemned the law and announced a lawsuit to challenge it.

The coalition argues its concerns range from a lack of acknowledgment of differing interpretations and translations of the Ten Commandments to infringements on the First Amendment that will result in "unconstitutional religious coercion of students."

"The law violates the separation of church and state and is blatantly unconstitutional," the coalition said Wednesday. "The First Amendment promises that we all get to decide for ourselves what religious beliefs, if any, to hold and practice, without pressure from the government. Politicians have no business imposing their preferred religious doctrine on students and families in public schools."



# You're invited.

PECO will host a public open house to discuss an upcoming electric transmission upgrade project in the area of Peach Bottom Township.

**When:** Tuesday, June 25 from 6-8 p.m.

**Where:** Delta Peach Bottom Elementary School, 1081 Atom Road in Delta, Pennsylvania

During the open house you can meet one-on-one with the project team, ask questions specific to your property, and provide feedback to PECO.

PECO will seek the necessary authorizations to begin construction from the Pennsylvania Public Utility Commission at a later date.

Visit [peco.com/pbproject](https://peco.com/pbproject) for more information about the project. For any questions, please email [pecopbproject@exeloncorp.com](mailto:pecopbproject@exeloncorp.com).



**Attachment 15:**  
**Vegetation Management for New  
Transmission Construction Projects**

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

**VM-PE-01005**

**Revision No.: 4**

**Effective:** 3/15/2024  
**Supersedes:** AM-PE-9124  
**Level:** 3 - Information Use  
**Review Type:** NERC (2 Year)  
**Core Function:** Vegetation Management

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### 1. Purpose

- 1.1. To provide guidance for obtaining the clearance distances required between active transmission facilities and vegetation. Guidelines are provided for preventive maintenance, annual inspection trigger thresholds, and for identifying areas that require mitigation.
- 1.2. To establish clearance distances to be obtained during new Right-of-Way (ROW) construction or other ROW projects.
- 1.3. To ensure compliance with FAC-003 by preventing encroachment into the Minimum Vegetation Clearance Distance (MVCD).

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# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

VM-PE-01005

Revision No.: 4

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## 2. Precautions and Limitations

### 2.1. Precautions

- 2.1.1 This document contains specific content that has been or will be used as 'Evidence of Compliance' for regulatory audits. Any person(s) making revisions to this document shall contact the Exelon NERC Compliance and Security NERC Compliance Management Team (CMT) group to inform them of proposed revisions (Outlook address: [Exelon NERC CMT O&P Compliance](#)).
- 2.1.2 A representative of the NERC CMT group shall be included as a "reviewer" of any proposed revisions to this document.
- 2.1.3 This document is related to NERC standard FAC-003.

### 2.2. Limitations

- 2.2.1 N/A

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## 3. Prerequisites

- 3.1. None

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## 4. Procedure

### 4.1. General Work Guidelines

- 4.1.1 The planner shall utilize the principles of Integrated Vegetation Management (IVM), as detailed in American National Standards Institute (ANSI) A300, part 7, Best Management Practices, to determine the most appropriate means to achieve the clearances detailed in the Preventive Maintenance Clearance Guidelines Table (4.3.4). Right-of-way management techniques shall include, but not be limited to, mechanical clearing, herbicide applications, hand clearing with chainsaws, and pruning or removal of trees.
- 4.1.2 Woody vegetation should be removed from the wire zone and tower zone.
- 4.1.3 The development of native, compatible, early successional vegetation communities should be encouraged on the right-of-way.
- 4.1.4 Invasive exotic vegetation should be discouraged from the right-of-way.
- 4.1.5 Any vegetation located entirely within the ROW limits that requires pruning to meet the suggested clearances should be removed from the ROW, with an herbicide follow up as needed. Pruning is not an acceptable management method for ROW floor maintenance.

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

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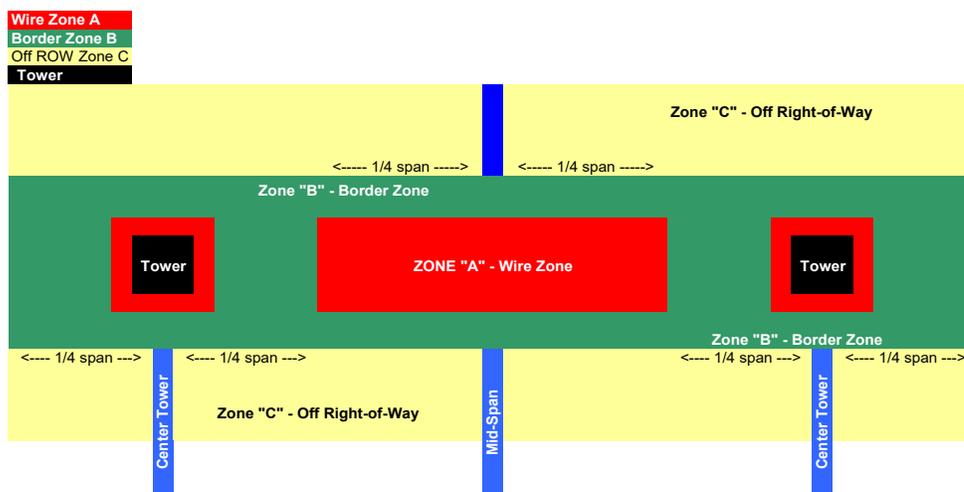
### 4.2. New ROW and Special ROW Projects

- 4.2.1 New ROW are to be cleared, at minimum, to the standards outlined in the Preventive Maintenance Clearance Guidelines Table (4.3.4) prior to the circuit being put in service.
- 4.2.2 Initial clearing or widening of ROW shall be followed by grubbing of root systems and/or the application of herbicide to prevent resprouting of woody vegetation.
- 4.2.3 Woody vegetation shall not be planted or approved for planting by PECO representatives in the ROW area when transmission lines are being built, rebuilt, or other projects are being completed.
- 4.2.4 Project owners will seek approval of Vegetation Management Senior Program Manager (SPM) or designated field forestry staff before approving landscape and/or planting plans on transmission ROWs.

### 4.3. Preventive Maintenance Clearance Guidelines

- 4.3.1 Preventive maintenance is performed on a 5-year cycle
- 4.3.2 It may not be possible to retain vegetation in Right-of-Way Zone A that matures up to 15' tall if conductors do not have sufficient ground clearance. Where vegetation has the potential to break Annual Inspection Point 2 (AIP 2) clearances under conductors at maturity, it should be removed, regardless of height at time of maintenance.

#### 4.3.3 ROW Floor Diagram



Wire Zone A and Border Zone B shift location depending on varying topography between towers, varying tower heights, and conductor ground clearance within a span.

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

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### 4.3.4 Preventive Maintenance Clearance Guidelines Table

Preventive Maintenance Clearance Guidelines (5 Year Cycle)								
Unless otherwise indicated, distances are in feet.								
All maximum allowable heights refer to vegetation at maturity								
Nominal Line Voltage (kV)	Span Length	Minimum Vegetation Clearance Distance (MVCD) at Gap Factor 1.0	Max Sway, based on 6psi (48mph) wind	Factor used for tree growth between cycles	Side Clearance Post Trim (Veg to conductor)*	Tower Area (Max Veg height from ground)*	Zone A (Max Veg height from ground)*	Zone B (Max Veg height from ground)*
69	<400	1.1	7.4	10	20	0-5	10-15	15-20
69	>400	1.1	7.4	10	30	0-5	10-15	15-20
138	<400	2.3	7.4	10	20	0-5	10-15	15-20
138	400-600	2.3	12.2	10	25	0-5	10-15	15-20
138	600-900	2.3	19.4	10	32	0-5	10-15	15-20
138	>900	2.3	25.5	10	39	0-5	10-15	15-20
230	<300	4.1	7	10	35	0-5	10-15	15-20
230	301-1250	4.1	20	10	35	0-5	10-15	15-20
230	>1250	4.1	31	10	46	0-5	10-15	15-20
500	<1200	7.1	15	10	40	0-5	10-15	15-20
500	>1200	7.1	26	10	48	0-5	10-15	15-20
*Exceptions can be made as detailed in Section 4.4 (Exceptions)								

NOTE: All PECO transmission lines are below 1000 feet above sea level.

# Transmission Vegetation Management Clearance Guidelines

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### 4.4. Exceptions

**4.4.1** Woody vegetation may be permissible in Zones A and B provided it complies with the clearance distances detailed in the Preventive Maintenance Clearance Guidelines Table (4.3.4), and does not exceed the clearances specified in the Annual Inspection Clearance Guidelines Table (4.6.2), Category 2 AIP.

**4.4.2** It may not be necessary to clear all vegetation from under the conductors where there is sufficient ground clearance. Where lines are greater than 100' above ground level, then selective management may be used. Vegetation that has a clearance of 50 feet or more from the conductors at maturity may be retained.

#### 4.4.3 Ravines

**4.4.3.1** It may not be necessary to clear all trees from under the conductors in deep ravines

#### 4.4.4 River & Stream Crossings

**4.4.4.1** To protect streams, incompatible vegetation may need to be selectively pruned or removed over a number of years or cycles to gradually establish a compatible plant community.

**4.4.4.2** Stream crossings of right-of-way corridors, surface water supply reservoirs, and drinking water wells and springs require protective buffers be maintained.

**4.4.4.3** Stream buffers should retain as much compatible vegetation as possible.

#### 4.4.5 Existing Vegetation Management Agreements

**4.4.5.1** Documented vegetation management agreements should be followed, except where they deviate from the clearances specified in the Preventive Maintenance Clearance Guidelines Table (4.3.4).

**4.4.5.2** Where a documented vegetation management agreement conflicts with the ability to obtain AIP2 clearances detailed in the Annual Inspection Clearance Guidelines Table (4.6.2), then the SPM shall be notified, and a mitigation plan initiated.

### 4.5. Limited Easement Rights

**4.5.1** Where maintenance rights are limited to the extent that the required clearances cannot be obtained, the planner should attempt to obtain consent from neighboring properties to complete the work. Where consent cannot be obtained, then the SPM shall be notified, and a mitigation plan initiated.

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

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### 4.6. Annual Inspection Clearance Guidelines

**4.6.1** Vegetation conditions meeting the following thresholds on the day of inspection should be scheduled for work as outlined in the Transmission Vegetation Management Annual Inspection Process.

### 4.6.2 Annual Inspection Clearance Guidelines Table

Corrective Maintenance Clearance Guidelines (Annual Inspection)						
Unless otherwise indicated, distances are in feet.						
		CAT 1 AIP	CAT 2 AIP	CAT 2 AIP	CAT 2 AIP	CAT 2 AIP
Nominal Line Voltage (kV)	Span Length	Min. Veg. Clearance Distance (MVCD) Gap Factor 1.0	Structure Side Minimum Clearance	Structure Under Minimum Clearance	Mid-Span Side Minimum Clearance	Mid-Span Under Minimum Clearance
69	<400	1.1	10	10	10	10
69	>400	1.1	15	15	15	20
138	<400	2.3	15	15	15	20
138	400-600	2.3	15	15	15	20
138	600-900	2.3	18	15	22	20
138	>900	2.3	24	15	29	25
230	>300	4.1	15	15	15	20
230	300 - 1250	4.1	19	15	25	25
230	>1250	4.1	27	15	36	25
500	<1200	7.1	22	20	29	25
500	>1200	7.1	29	20	36	30

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

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### 5. Roles and Responsibilities

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- 5.1. Vegetation Management Senior Program Manager (SPM)
  - 5.1.1 Budget setting and tracking
  - 5.1.2 Work scheduling and tracking
  - 5.1.3 Tracks QA/QC Process
  - 5.1.4 Writing and publishing of the VM-PE-01005 Vegetation Management Transmission Clearance Guidelines Procedure
  - 5.1.5 Implementation of maintenance rights
  - 5.1.6 Manages external and internal stakeholder communications
  - 5.1.7 Manages PECO's environmental and safety program compliance
- 5.2. Contractor Planner
  - 5.2.1 Plans right-of-way maintenance activities.
  - 5.2.2 Notifies municipalities and adjacent landowners of upcoming maintenance activities, and obtains necessary access consent.
  - 5.2.3 Plans and delivers work packets to Utility Line Clearance Contactor
  - 5.2.4 Maintains required records in accordance with PECO procedures
- 5.3. Utility Line Clearance Contractor
  - 5.3.1 Complete planned maintenance activities in accordance with the Transmission Clearance Guidelines.

### 6. Documentation

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- 6.1. Documentation generated during performance of this document shall be filed in accordance with Exelon Corporate Procedure LE-AC-401 – Records and Information Management Retention and Disposition.

### 7. Terms and Definitions

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- 7.1. Annual Inspection

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

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- 7.1.1** The systematic examination of vegetation conditions on a Right-of-Way and those vegetation conditions under the Transmission Owner's or applicable Generator Owner's control that are likely to pose a hazard to the line(s) prior to the next planned maintenance or inspection.
- 7.2.** Annual Inspection Point (AIP)
  - 7.2.1** A specific location identified during the annual inspection that denotes an observation of vegetation that meets a specified threshold distance to aerial transmission facilities.
- 7.3.** Annual Work Plan
  - 7.3.1** A maintenance plan created each year which consists of the lines due for preventive maintenance based on a 5-year cycle.
- 7.4.** Border Zone
  - 7.4.1** A section of the ROW that extends from the edge of the ROW to roughly 10 feet from the outside transmission conductors.
- 7.5.** Compatible Vegetation
  - 7.5.1** Vegetation that is desirable and consistent with the intended use of the site
- 7.6.** Incompatible Vegetation
  - 7.6.1** Vegetation that is undesirable, interferes with the intended use of the site, or creates a safety concern
- 7.7.** Integrated Vegetation Management (IVM)
  - 7.7.1** A system of managing plant communities in which managers identify compatible and incompatible vegetation, evaluate control methods, and evaluate, select and implement the most appropriate control method or methods to achieve specific objectives. The choice of control methods is based on the anticipated effectiveness, environmental impact, site characteristics, safety, security, economics, and other factors.
- 7.8.** Minimum Vegetation Clearance Distance (MVCD)
  - 7.8.1** The calculated minimum distance calculated in feet to prevent flash-over between conductors and vegetation.
- 7.9.** Preventive Maintenance
  - 7.9.1** Activities planned and performed on a cyclic basis to prevent vegetation encroachment into the ROW to an extent that it causes an outage or impedes access to utility facilities.

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

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### 7.10. Priority Tree

**7.10.1** A tree judged to have an increased likelihood of failure based on visible signs of death, decline, insect infestation, disease infection, or structural defects, which also has the potential to encroach into the MVCD or otherwise impact safety or reliability of PECO facilities in the case of said failure.

### 7.11. ROW (Right-of-Way)

**7.11.1** The corridor of land under a transmission line(s) needed to operate the line(s). The width of the corridor is established by engineering or construction standards as documented in either construction documents, pre-2007 vegetation maintenance records, or by the blowout standard in effect when the line was built. The ROW width in no case exceeds the applicable Transmission Owner's legal rights but may be less based on the aforementioned criteria.

### 7.12. Wire Zone

**7.12.1** Section of a utility transmission right-of-way directly under the conductors and extending about 10 feet to either side.

## 8. References

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- 8.1. LE-AC-401 – Records and Information Management Retention Disposition
- 8.2. NERC Standard FAC-003, Transmission Vegetation Management
- 8.3. ANSI A300, part 7, Best Management Practices
- 8.4. VM-EU-P002 Vegetation Management Transmission Maintenance Program
- 8.5. VM-PE-P069 Transmission Vegetation Management Preventative Maintenance Process
- 8.6. VM-PE-1019 Transmission Vegetation Management Scope of Work Verification Procedure
- 8.7. VM-PE-P068 Transmission Vegetation Management Mitigation Process
- 8.8. VM-ED-P026 Transmission Vegetation Management Annual Inspection Process
- 8.9. VM-ED-P025 Transmission Vegetation Management QA/QC Process
- 8.10. NERC Alert A-2015-05-14-01 FAC-003-3 Minimum Vegetation Clearance Distances (MVCD)

## 9. Attachments

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None

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

VM-PE-01005

Revision No.: 4

### 10. Development History

<b>Revision 0</b>		<b>Date: 3/18/2016</b>
Writer	Rebekah Hall, Senior Project Manager, Vegetation Management	
Reviewer(s)	Amanda Benner, Vegetation Management; Alexander Brown, Vegetation Management; Steve Dasovich, Transmission Engineering; David Carlson (EU TSC)	
UFAM Approver(s)	J. Earl Coffman, UFAM, Director Project, Construction, Engineering and Vegetation Management	
Reason written	Incorrect document number issued for superseded document	

<b>Revision 1</b>		<b>Date: 3/5/2018</b>
Writer	Rebekah Hall, Senior Program Manager, Vegetation Management, title and work group	
Reviewer(s)	Aisha Jolly, Sr NERC Compliance Specialist, Exelon NERC CMT O&P Compliance	
UFAM Approver(s)	Leonard Sanelli, Preventive Maintenance, Director Project, Contract, and Vegetation Management	
Reason written	2-year document review	

<b>Revision 2</b>		<b>Date: 3/5/2020</b>
Writer	Rebekah Hall, Senior Program Manager, Vegetation Management	
Reviewer(s)	Claudine Fritz (Exelon Utilities Compliance Management Team)	
UFAM Approver(s)	Leonard Sanelli, Preventive Maintenance, Director Project, Contract, and Vegetation Management	
Reason written	2-Year Document Review	

# Transmission Vegetation Management Clearance Guidelines

## PECO Administrative Procedure

**VM-PE-01005**

**Revision No.: 4**

<b>Revision 3</b>		<b>Date: 2/21/2022</b>
Writer	Christopher Harris, Senior Program Manager, Vegetation Management	
Reviewer(s)	Dana Johnson, Manager Vegetation Management; Rebekah Hall, Senior Program Manager, Vegetation Management; Rajesh Geevarghese, NERC CMT	
UFAM Approver(s)	John Hartenstein, Manager Project Mangement	
Reason written	2-Year Document Review; NERC Review Complete	

<b>Revision 4</b>		<b>Date: 3/15/2024</b>
Writer	Rebekah Hall, Senior Program Manager, Vegetation Management	
Reviewer(s)/Approver(s)	Daniel Gacek, NERC CMT John Hartenstein, Sr. Manager Project Mangement Brian D. Crowe, VP Technical Services	
Reason Written	2-Year Document Review; NERC Review Complete	

## **Attachment 16:**

# **Tree Trimming and Comprehensive Vegetation Management Brochure**

# Transmission Line Vegetation Management

Our Commitment to Electric Reliability



***PECO's commitment to electric reliability goes beyond maintaining the poles or towers and lines themselves — it extends to the trees or other vegetation surrounding overhead power lines.***

Keeping the areas beneath our transmission lines clear is critical to the safety of our customers and employees, and is an important part of maintaining the reliability of the power we provide to the communities we serve.

Our transmission system is the backbone of the regional electric grid, channeling power from generating facilities to local distribution lines in our service territories. This system is vital to our economic health and our nation's security.

### **What Is a Transmission Line?**

Transmission lines are high-voltage wires that run along large towers and form an interconnected grid that brings power from power plants to local substations. Disruptions to transmission lines can have serious consequences.

## Our Approach to Vegetation Management

Our vegetation management program is a key element of PECO's overall preventive maintenance program. As part of this program, tree pruning and removals are required to ensure reliability, safety, and to comply with federal regulations for managing vegetation on transmission rights-of-way.

PECO's contract tree crews utilize a range of tools and techniques to minimize impact to the environment while performing work. Each work location is assessed individually, and affected property owners will be notified of the required work in advance.



## New Transmission Construction Projects

***PECO is committed to upgrading, modernizing and expanding our electric transmission infrastructure in order to maintain system reliability, and provide additional capacity to meet the current and future needs of our customers and communities.***

New electric transmission projects entail the construction of new lines as well as the rebuilding of existing lines. These projects require the removal of vegetation in and along the right-of-way (ROW) to ensure proper clearance for overhead lines. Vegetation also is frequently removed in areas where construction activities occur.

PECO may need to acquire tree-removal rights from property owners for projects that are not located on the ROW. PECO's policy is to assess each work location individually, and notify affected property owners of the required work in advance of the work.

### **What Is A Right-Of-Way (ROW)?**

Transmission rights-of-way are typically identified by large steel poles or tower structures that are used to transport high-voltage electricity across long distances. PECO owns or has express property rights to operate, maintain and upgrade our equipment within our rights-of-way.

## What We Do

***Prior to construction on the electric transmission system, the right-of-way (ROW) must be cleared of all vegetation apart from herbaceous or non-woody plants.***

Tree clearing will be required in some areas to ensure the ROW is wide enough for installing and maintaining the new facilities. Trees remaining at the edge of the right of way will be pruned “ground to sky” to ensure there is no vegetation overhanging the lines or growing into the ROW from the side. They may also be reduced in height to minimize the potential of falling into the ROW and impacting the facilities.

Since many tree and shrub species can resprout from the root system once cut, any stumps and root systems within the ROW area will be mechanically removed or treated with herbicides to prevent growth and regrowth of incompatible vegetation.

Upon completion of the project, the ROW will be revegetated with grasses, either from the natural existing seed bank or through reseeding, if necessary. Long term management of the ROW will align with current practices on our existing transmission system.

## Herbicide Usage

***Once the right-of-way (ROW) is cleared of trees, PECO takes the necessary steps to prevent future growth of unwanted trees, shrubs and other incompatible plants.***

This is done by applying herbicides, which is approved by the Environmental Protection Agency (EPA) and authorized for use on utility ROW. In some circumstances, herbicide application may be the only effective means of vegetation control on ROWs.



Herbicides are applied by PECO's state-certified applicators, or under the supervision of a certified applicator. Herbicide application methods include individual cut-stump treatments directly applied to the stump; low-volume applications using a backpack spray kit; high-volume applications using off-road vehicles. As time passes and the low-growing vegetation becomes dominant, less herbicide is needed and applied for maintenance.

## Keeping the Transmission System Safe and Reliable

The National Electrical Safety Code sets minimum clearance distances between power lines and obstructions or the ground. In addition, the federal government has reliability standards for transmission lines. Obstructions in the rights-of-way can cause reliability and safety issues, and may impede our ability to upgrade and maintain our facilities.

## Our Rights and Obligation to Perform Work

Federal standards mandate that utilities have a transmission vegetation management program to prevent widespread outages on the transmission system. The North American Electric Reliability Corporation (NERC) strictly enforces these standards.



## Routine Maintenance Ensures Continued Reliability

***Ongoing management of vegetation on transmission rights-of-way (ROW) is needed to ensure safe and reliable operation of the electrical grid.***

PECO performs cycle based preventive maintenance to manage vegetation which allows us to proactively control trees or other vegetation while retaining compatible low growing grasses and forbs under the lines. During our maintenance cycle, trees along the ROW edge will be pruned or removed to maintain the width of the ROW, prevent overhang, and prevent resprouting of tree branches or other vegetation into the managed ROW area.

Vegetation around the base of towers will be controlled to prevent plants from contacting the structures or impeding access. Trees on or off the ROW corridor that appear to have an increased likelihood of falling due to damage or disease may also be removed when encountered during normal operations.

PECO contractors clean up debris following tree pruning and other ROW management work. Woody debris is removed from maintained yards, agricultural fields, access roads and environmentally sensitive areas. In unmaintained or forested areas, debris is stacked in piles along the edge of the ROW or left in place where cut. Mechanically cleared areas will be left with mulched debris from the forestry mower. Leaving biomass where appropriate minimizes impacts associated with debris disposal, and also benefits the environment by leaving material for wildlife habitat and nutrient cycling.

Between cycles, PECO performs an inspection of all ROW at least once a year to identify any vegetation that needs to be controlled between scheduled work cycles. Each work location is assessed individually, and affected property owners will be notified of the required work in advance of the work.



## Supporting Trees & All Things Green

*Trees and all things green are vital to our region's transition to a clean energy future, and are an important part of PECO's ongoing commitment to protect and preserve the environment.*



### **Tree Line USA®**

PECO is a certified Tree Line USA® utility in honor of our commitment to proper tree pruning, planting, and education.



### **Re-Leaf Program**

ReLeaf is centered around the company's increased investment in tree planting and education across the Greater Philadelphia region. The program's ultimate goal, in partnership with the Pennsylvania Horticultural Society, is to plant one tree for every tree removed as part of electric reliability maintenance.

# Secondary Use Guidelines

PECO is here to help individuals and organizations understand the rules and guidelines related to secondary use of our rights-of-way. Applicants are encouraged to send an email to [PECOLandRequests@exeloncorp.com](mailto:PECOLandRequests@exeloncorp.com) or contact their External Affairs Manager who can provide an application as well as a full list of restrictions and guidelines. By doing so, any potential issues can be addressed before an investment has been made.

## ✓ ACCEPTABLE

### Agricultural pursuits including:

- Pastureland
- Farming (no tree farms)
- Vineyards

### Wildlife preserves

### Park lands

### Recreational Trails

(with certain conditions)

## ○ RESTRICTED

### Fencing Grading (cut or fill)

### Parking lots

### Benches (in limited situations)

### Signs (in limited situations)

### Roads, driveways, sewer/water

### lines, other utility lines or any

### underground facilities

## ✗ NOT ACCEPTABLE

**Structures** (including but not limited to the following):

- Buildings
- Manufactured/Mobile Homes
- Sheds
- Carports
- Greenhouses
- Tents
- Playhouses, playsets, trampolines, Satellite systems
- Swimming pools and associated equipment/decking
- Billboards
- Dumpster and trash receptacles
- Tree farms
- Propane/fuel tanks
- Septic systems of other tanks (above or below grade)
- Mulching operations
- Storage/stockpiling
- Light posts

**Dumping debris of any type including but not limited to the following:**

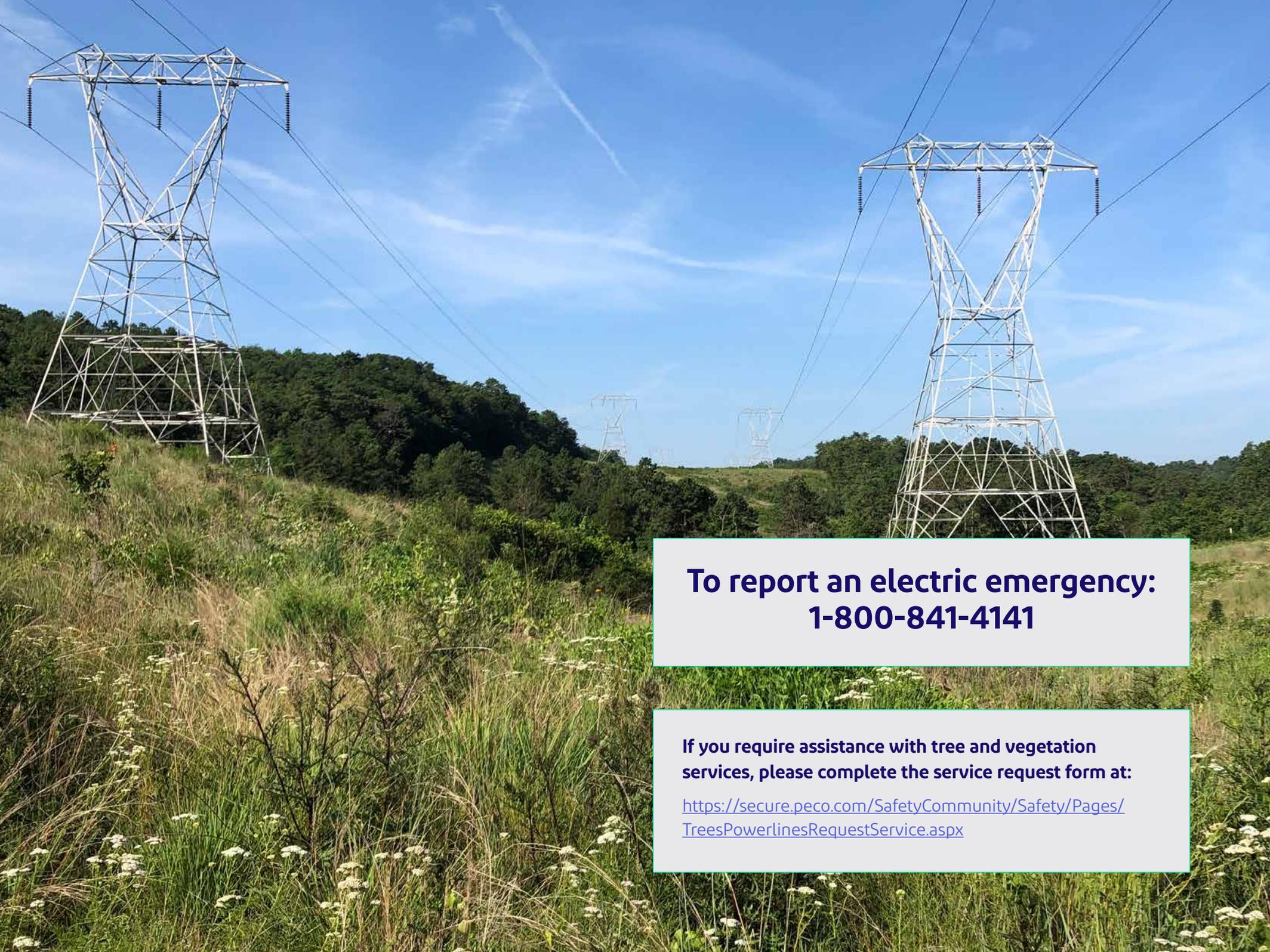
- Flammable or combustible materials
- Building material
- Wrecked or disabled vehicles
- Animal carcasses
- Fill or rubble piles
- Any other object that which may interfere with transmission line right-of-way use

### Open fires or fire pits

### Attachment to PECO structures

(without prior approval from PECO)

**Any drainage feature that allows water to pond, causes erosion, directs storm water toward the right-of-way or limits access to or around PECO facilities is prohibited.** This includes storm drainage pipes, downspouts, wet-storm water basins, ponds & rain gardens.



**To report an electric emergency:  
1-800-841-4141**

**If you require assistance with tree and vegetation  
services, please complete the service request form at:**

[https://secure.peco.com/SafetyCommunity/Safety/Pages/  
TreesPowerlinesRequestService.aspx](https://secure.peco.com/SafetyCommunity/Safety/Pages/TreesPowerlinesRequestService.aspx)

**Attachment 17:**  
**List of Agency and Permit Requirements and**  
**Permit Matrix**

# **Brandon Shores Retirement Mitigation Project**

## **AGENCY LIST AND PERMIT REQUIREMENTS**

### **STATE AGENCIES**

Pennsylvania Bureau of Investigation and Enforcement  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
2nd Floor, Room-N201  
Harrisburg, Pennsylvania 17120  
Attn: Allison Kaster

Pennsylvania Department of Environmental Protection  
Southcentral Office  
909 Elmerton Avenue  
Harrisburg, Pennsylvania 17110  
Attn: Scott Williams, Waterways and Wetlands Program Manager

Pennsylvania Department of Transportation  
Keystone Building  
400 North Street, Fifth Floor  
Harrisburg, Pennsylvania 17120  
Attn: Jeffery Spotts, Chief Counsel

Pennsylvania Historical and Museum Commission  
Bureau for Historic Preservation  
Commonwealth Keystone Building, Second Floor  
400 North Street  
Harrisburg, Pennsylvania 17120-0053  
Attn: Mr. Douglas C. McLearn, Chief

Pennsylvania Department of Conservation and Natural Resources  
Rachel Carson State Office Building  
400 Market Street  
Harrisburg, Pennsylvania 17105-8767  
Attn: Rebecca Bowen, Ecological Services Section Chief

Pennsylvania Game Commission  
2001 Elmerton Avenue  
Harrisburg, Pennsylvania 17110-9797  
Attn: Dr. Matthew Schnupp, Director, Bureau of Wildlife Habitat Management

Pennsylvania Fish and Boat Commission  
450 Robinson Lane  
Bellefonte, Pennsylvania 16823-9620  
Attn: Christopher A. Urban, Chief, Natural Diversity Section

Pennsylvania Office of Consumer Advocate  
555 Walnut Street  
5th Floor Forum Place  
Harrisburg, Pennsylvania 17101-1923  
Attn: Patrick M. Cicero, Consumer Advocate

Pennsylvania Office of Small Business Advocate  
555 Walnut Street  
1<sup>st</sup> Floor Forum Place  
Harrisburg, Pennsylvania 17101  
Attn: NazAarah Sabree, Small Business Advocate

**FEDERAL AGENCIES**

U.S. Army Corps of Engineers  
Baltimore District Corporate Communication Office  
2 Hopkins Plaza  
Baltimore, Maryland 21201  
Attn: Planning Division

U.S. Fish and Wildlife Service  
Pennsylvania Field Office  
110 Radnor Rd, Suite 101  
State College, Pennsylvania 16801  
Attn: Lesa Lindsay

**COUNTY AGENCIES**

York County Joint Board of Commissioners  
York County Administrative Center  
28 E Market Street, 2<sup>nd</sup> Floor  
York, PA 17401  
ATTN: Julie Wheeler, President Commissioner

York County Planning Commission  
York County Administrative Center  
28 E Market Street, 3<sup>rd</sup> Floor  
York, PA 17401  
ATTN: Felicia Dell, Director

York County Conservation District  
 2401 Pleasant Valley Road  
 Suite 101 Room 139  
 York, Pennsylvania 17402  
 ATTN: Eric Jordan, Program Manager, Erosion and Sediment Control Resource Conservationist

**MUNICIPALITIES**

Peach Bottom Township  
 6880 Delta Road, Suite 3  
 Delta, PA 17314  
 ATTN: David E. Gemmill, Chairperson

**ANTICIPATED PERMITS, APPROVALS, OR DOCUMENTS**

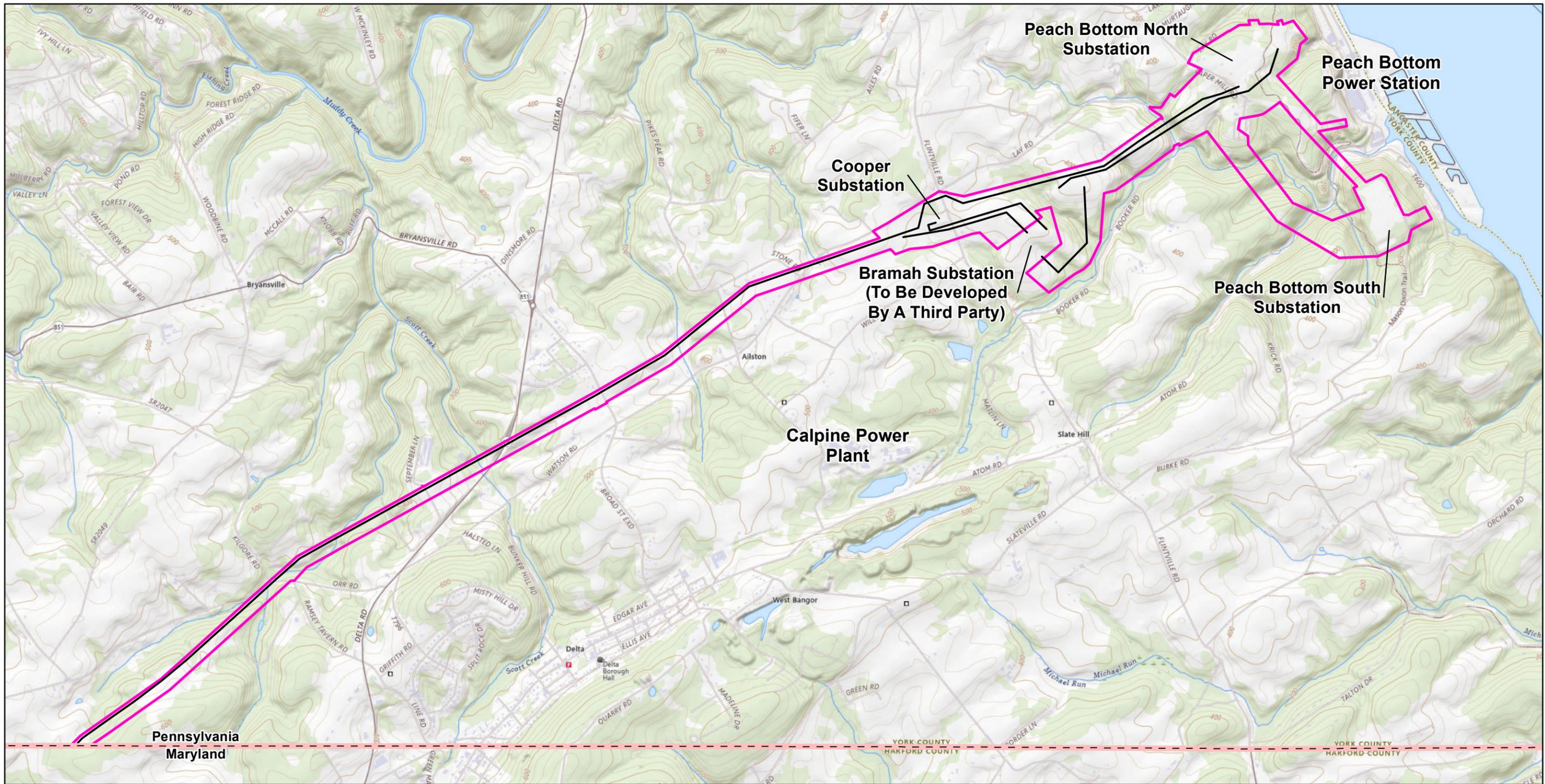
Agency	Permit, Approvals, or Documents	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
<b>Local Agencies</b>				
York County Conservation District	Erosion and Sedimentation Control (E&SC) Plan approvals (coordinated through PADEP)	April 2026	Anticipated submittal by March 2025	Activities that require earth disturbance must institute practices that minimize accelerated erosion and resulting sediment pollution to the waters of the Commonwealth or United States.  25 Pa. Code Chapter 102
<b>Commonwealth of Pennsylvania Agencies</b>				
PA Department of Environmental Protection (PADEP) – Chapter 102	Approval of Coverage under National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges Associated with Construction Activities (Chapter 102) (will be Individual NPDES due to EV and HQ Watersheds)	April 2026	Anticipated submittal by March 2025	Discharge of storm water associated with construction activities (25 Pa. Codes § 92, National Pollutant Discharge Elimination System; § 93, Water Quality Standards; and §102, Erosion and Sediment Control).

Agency	Permit, Approvals, or Documents	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
PA Department of Environmental Protection (PADEP) – Chapter 105	Waters/wetlands Obstruction and Encroachment Permits (Chapter 105) and Floodplain Management Permit (Chapter 106) (Joint Permit Application for State Programmatic General Permit (PASPGP-6) from PADEP and USACE)	April 2026	Anticipated submittal by March 2025	Activities in regulated watercourses, floodways, bodies of water (incl. wetlands) (25 Pa. Code §105) Floodplains obstructed by highways and public utilities (25 Pa. Code §106)
PA Department of Conservation & Natural Resources (DCNR) – Bureau of Forestry	Consultation on-going - State rare, threatened, and endangered (RTE) species consultation and approvals; Surveys for rare plants	April 2025	Anticipated submittal by October 2024	Determination of potential impact to state listed and candidate threatened & endangered species and habitat if present & impacted
PA Fish & Boat Commission (PFBC)	Consultation on-going - State rare, threatened, and endangered (RTE) species consultation and approvals (fish, reptiles, amphibians); Surveys for skink habitat	April 2025	Anticipated submittal by October 2024	Same as above
PA Game Commission (PAGC)	Consultation not required per PNDI review (birds & mammals).	Not Applicable	Not Applicable	Same as above
PA Historical & Museum Commission (PHMC)	Consultation indicated no historical/ above-ground resources of concern. Further consultation is needed for archeological (below ground) resources.	December 2025	Anticipated submittal by January 2025	Historic and cultural resources listed or eligible for listing on the State &/or Federal Natural Register of Historic Places

Agency	Permit, Approvals, or Documents	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
PA Department of Transportation (PennDOT)	Various state roadway/highway occupancy permits	April 2026	Anticipated submittal by December 2025	Road crossings by utilities
PennDOT Bureau of Aviation (BOA)	PennDOT Notice of Proposed Construction or Alteration (Form AV-57)	April 2026	Anticipated submittal by November 2025	Notify BOA of transmission towers greater than 200 feet or within 20,000 feet of airport
PA Public Utility Commission (PUC)	Application for permission to site and construct transmission line	December 2025	To be submitted September 2024	Construction of new transmission line
<b>Federal Agencies</b>				
US Army Corps of Engineers (USACE) – Baltimore District	Clean Water Act permits for regulated water and wetland encroachments (Section 404) (Joint Permit Application for State Programmatic General Permit (PASPGP-6) from PADEP and USACE)	April 2026	Anticipated submittal by March 2025	Discharge of dredged or fill material into waters of the US  Bog Turtle screening will be required for work in York County
US Fish & Wildlife Service – State Ecological Services (USFWS)	Consultation on-going - Federal rare, threatened, and endangered (RTE) species reporting and compliance with Section 7 of Endangered Species Act for Federal permits; Phase I and II bog turtle habitat surveys at minimum for areas in York County	October 2024	Submitted July 2024	Determination of potential impact to Federal listed and candidate threatened & endangered species and habitat if present & impacted

Agency	Permit, Approvals, or Documents	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
Environmental Protection Agency (EPA)	National Pollutant Discharge Elimination System (NPDES) Permit for Discharges Associated with Construction Activities	April 2026	Anticipated submittal by March 2025	<p>Discharge of storm water associated with construction activities; Erosion and Sediment Control; Clean Water Act.</p> <p>To be coordinated through PADEP per delegation agreement with the Commonwealth of Pennsylvania.</p>
Federal Aviation Administration (FAA)	FAA Notice of Proposed Construction or Alteration (Form 7460-1)	April 2026	Anticipated submittal by November 2025	Notify FAA of transmission towers greater than 200 feet or within 20,000 feet of airport

**Attachment 18:**  
**Topographic Overview Map**



**Legend**

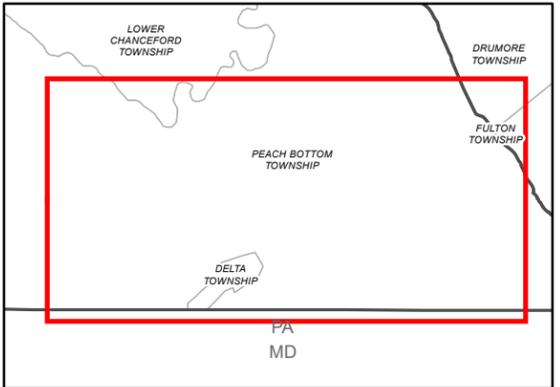
- PROPOSED PROJECT ACTIVITY
- PROJECT AREA
- STATE LINE

**NOTES:**

**REFERENCES:**  
STATE LINE (PENNDOT 10/2023)

0 2,000 4,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco**  
AN EXELON COMPANY

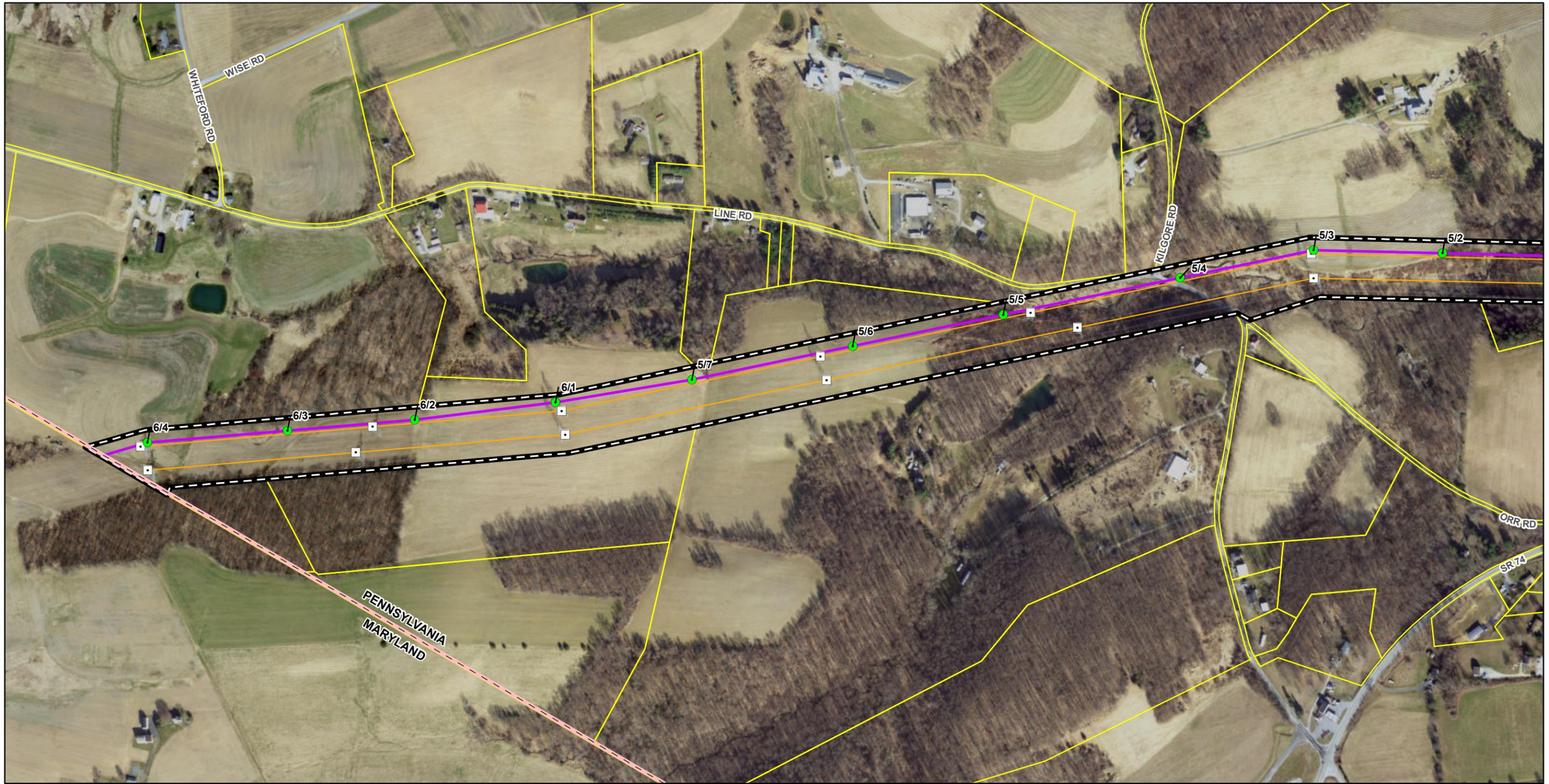
**AECOM**

**Attachment 18**  
**Topographic Overview Map**

**Brandon Shores Retirement**  
**Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/28/2024

**Attachment 19:**  
**Aerial Overview Map**



**Legend**

- PROPOSED STRUCTURE
- EXISTING STRUCTURE (TO REMAIN)
- EXISTING STRUCTURE (TO BE REMOVED)
- PROPOSED TRANSMISSION LINES
- EXISTING TRANSMISSION LINE
- PECO FEE OWNED PROPERTY
- PARCEL BOUNDARY
- STATE BOUNDARY
- COUNTY BOUNDARY
- MUNICIPAL BOUNDARY

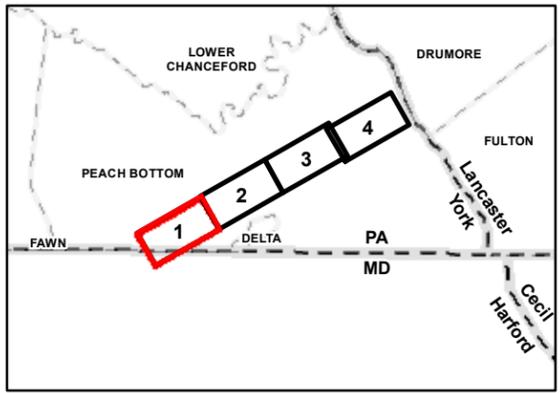
**NOTES:**

3. EXISTING STRUCTURES AND CENTERLINES WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 2, 2024.
4. PROPOSED TRANSMISSION LINES AND STRUCTURE LOCATIONS WERE PROVIDED BY PECO/POWER ENGINEERS AUGUST 21, 2024.
5. PROPOSED AND EXISTING EASEMENTS WERE PROVIDED BY PECO/RETTEW ASSOCIATES, INC. AUGUST 23, 2024.

**REFERENCES:**  
STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
Feet

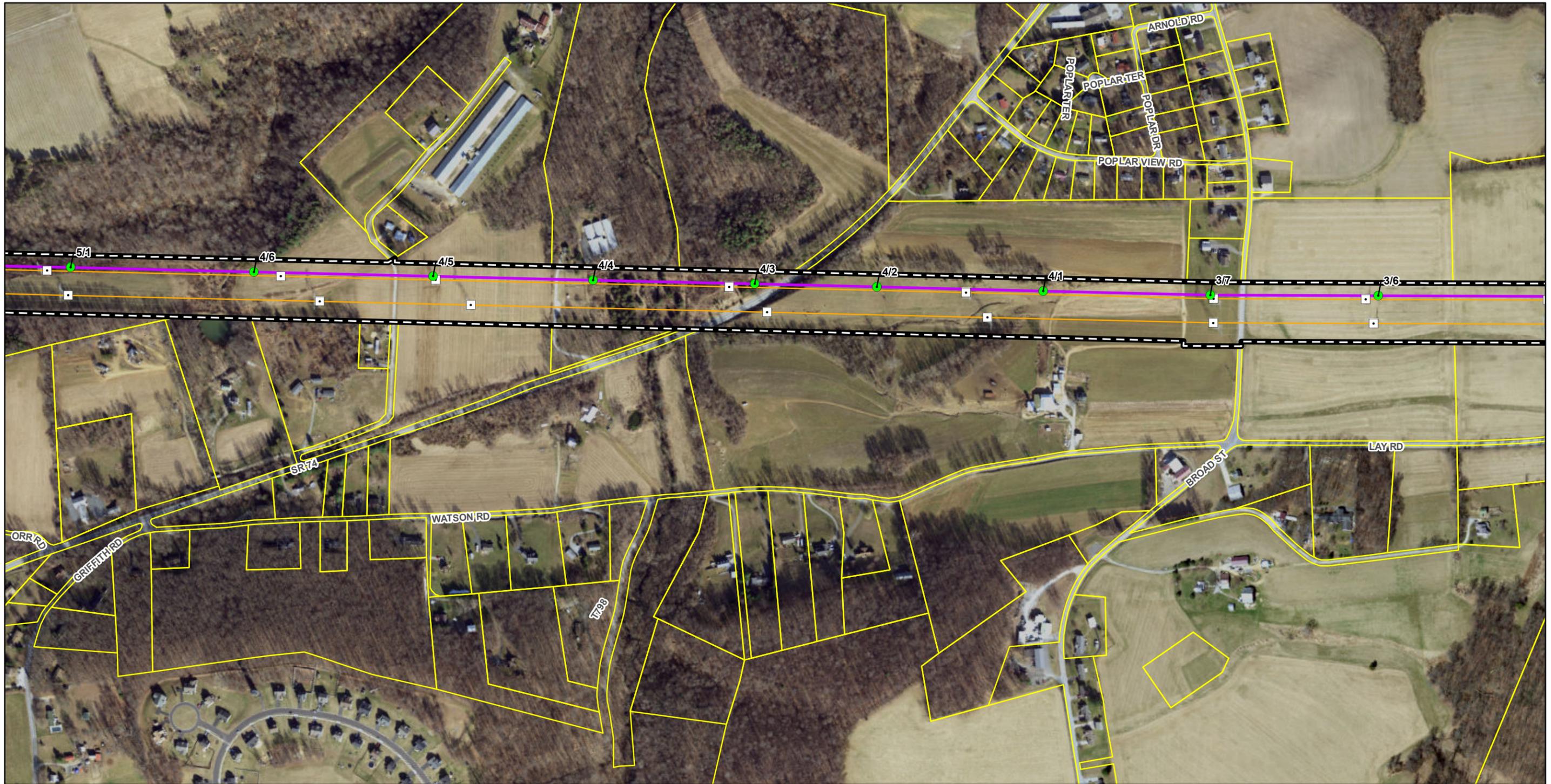
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PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**Attachment 19  
Aerial Overview Map**

**Brandon Shores Retirement  
Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/29/2024



**Legend**

- PROPOSED STRUCTURE
- EXISTING STRUCTURE (TO REMAIN)
- EXISTING STRUCTURE (TO BE REMOVED)
- PROPOSED TRANSMISSION LINES
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- STATE BOUNDARY
- COUNTY BOUNDARY
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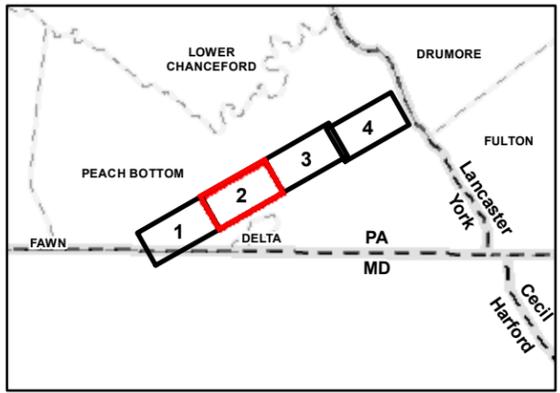
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0 500 1,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US

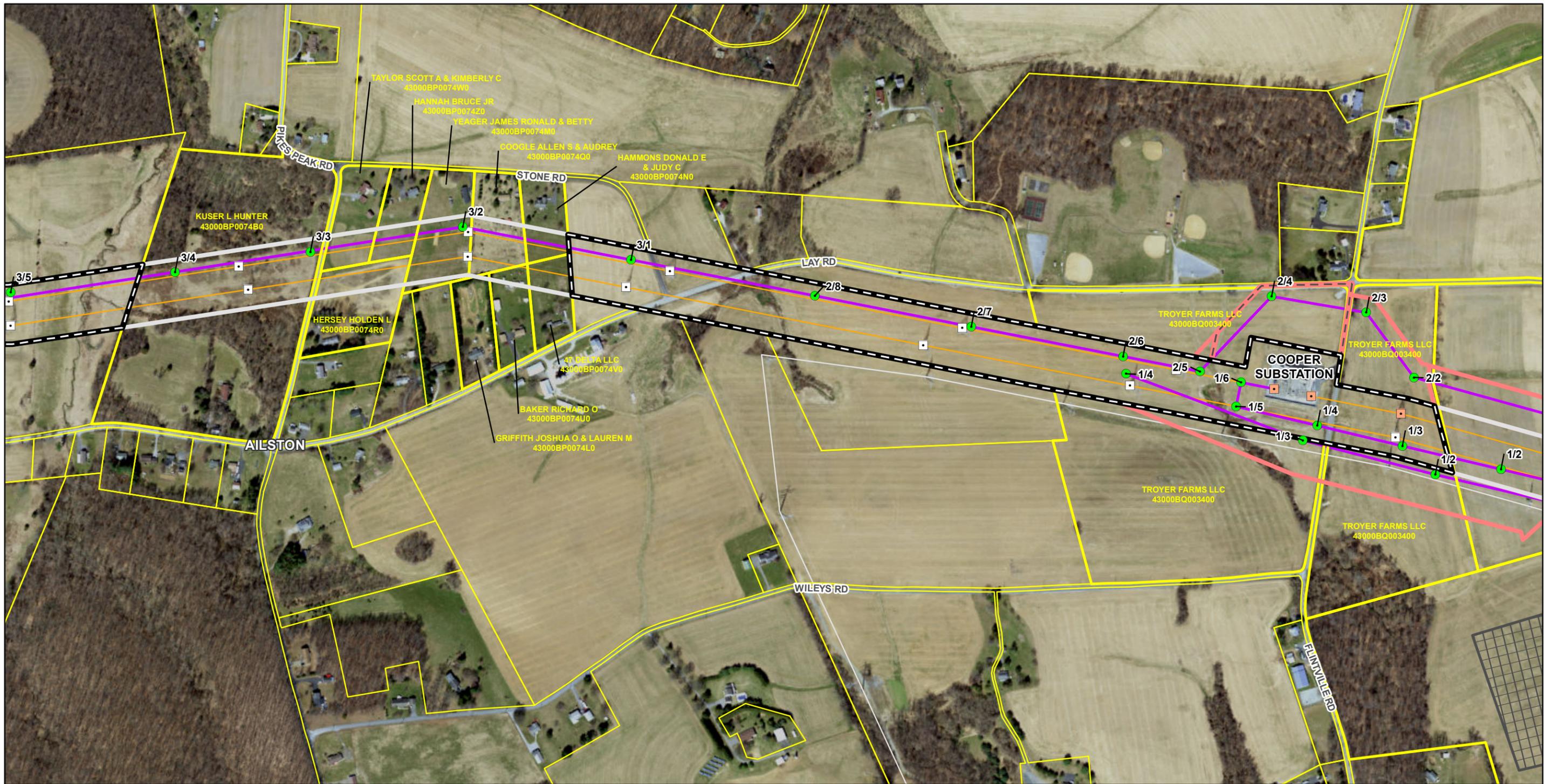





**Attachment 19  
Aerial Overview Map**

**Brandon Shores Retirement  
Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/29/2024



**Legend**

	PROPOSED STRUCTURE		PROPOSED FEE ACQUISITION
	EXISTING STRUCTURE (TO REMAIN)		PROPOSED EASEMENT ACQUISITION
	EXISTING STRUCTURE (TO BE REMOVED)		PROPOSED SUBSTATION
	PROPOSED TRANSMISSION LINES		PARCEL BOUNDARY
	EXISTING TRANSMISSION LINE		STATE BOUNDARY
	EXISTING CALPINE LINE (OUT OF SCOPE)		COUNTY BOUNDARY
	PECO FEE OWNED PROPERTY		MUNICIPAL BOUNDARY
	PECO ROW EASEMENT		

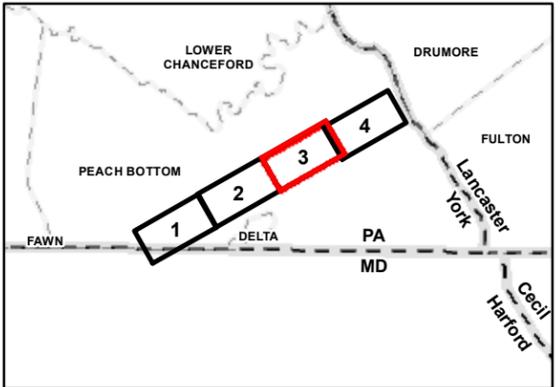
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0 500 1,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**peco**  
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**AECOM**

**Attachment 19  
Aerial Overview Map**

**Brandon Shores Retirement  
Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/29/2024



**Legend**

PROPOSED STRUCTURE	PROPOSED SUBSTATION
EXISTING STRUCTURE (TO REMAIN)	PARCEL BOUNDARY
EXISTING STRUCTURE (TO BE REMOVED)	STATE BOUNDARY
PROPOSED TRANSMISSION LINES	COUNTY BOUNDARY
EXISTING TRANSMISSION LINE	MUNICIPAL BOUNDARY
EXISTING CALPINE LINE (OUT OF SCOPE)	
PECO FEE OWNED PROPERTY	
PECO ROW EASEMENT	
PROPOSED EASEMENT ACQUISITION	

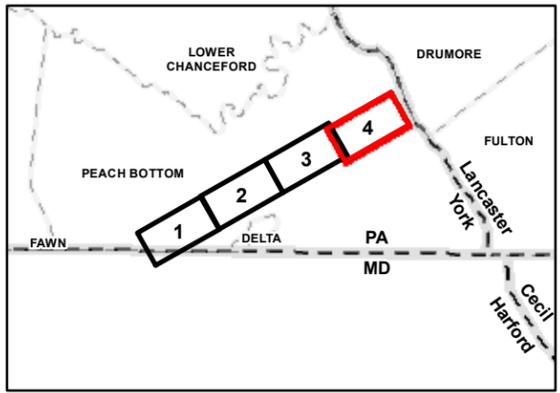
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0 500 1,000  
Feet

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PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



**AN EXELON COMPANY**

**Attachment 19  
Aerial Overview Map**

**Brandon Shores Retirement  
Mitigation Project**  
Peach Bottom Township, York County  
Pennsylvania  
PECO, an Exelon Company

Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/29/2024

**Attachment 20:**  
**Map of Segments of Project**



**Legend**

<p><b>PROPOSED BRANDON SHORES TRANSMISSION LINE</b></p> <ul style="list-style-type: none"> <li>220-08 LINE</li> <li>220-93 LINE</li> <li>5012 LINE</li> <li>5040 LINE</li> <li>5042 LINE</li> </ul>	<ul style="list-style-type: none"> <li>PROPOSED PJM TRANSMISSION LINE</li> <li>EXISTING TRANSMISSION LINE</li> <li>STATE BOUNDARY</li> <li>COUNTY BOUNDARY</li> <li>MUNICIPAL BOUNDARY</li> </ul>
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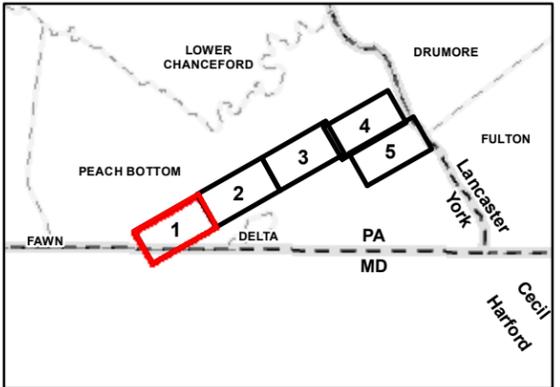
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0 500 1,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



<p>AN EXELON COMPANY</p>	
<p><b>Attachment 20</b> <b>Map of Project Segments</b></p>	
<p><b>Brandon Shores Retirement</b> <b>Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company</p>	
<p>Prepared By: BSF</p>	<p>Checked By: DY/RB</p>
<p>Job: 60727782</p>	<p>Date: 8/28/2024</p>



**Legend**

<b>PROPOSED BRANDON SHORES TRANSMISSION LINE</b>	PROPOSED PJM TRANSMISSION LINE
220-08 LINE	EXISTING TRANSMISSION LINE
220-93 LINE	STATE BOUNDARY
5012 LINE	COUNTY BOUNDARY
5040 LINE	MUNICIPAL BOUNDARY
5042 LINE	

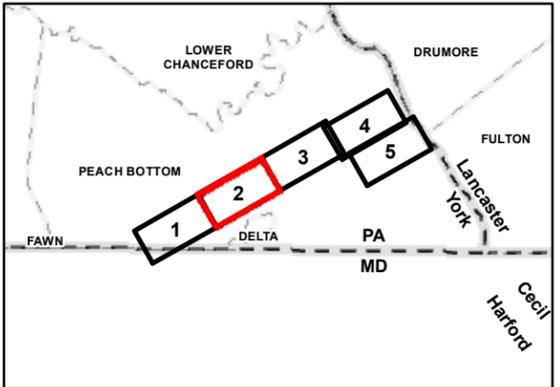
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0 500 1,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



<b>peco</b> AN EXELON COMPANY	
<b>Attachment 20</b> <b>Map of Project Segments</b>	
<b>Brandon Shores Retirement</b> <b>Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company	
Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/28/2024



**Legend**

PROPOSED BRANDON SHORES TRANSMISSION LINE	PROPOSED PJM TRANSMISSION LINE
220-08 LINE	EXISTING TRANSMISSION LINE
220-93 LINE	EXISTING CALPINE LINE (OUT OF SCOPE)
5012 LINE	STATE BOUNDARY
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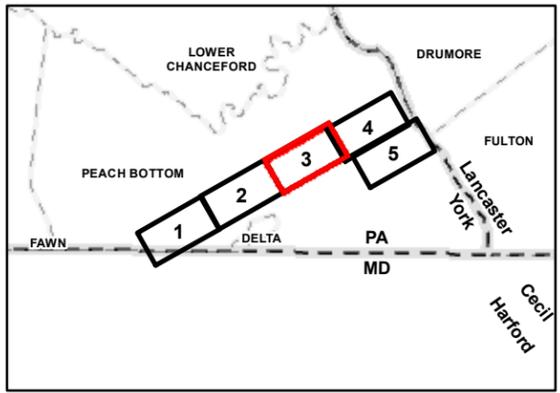
**NOTES:**

3. EXISTING TSM ISSION CENTELINES EE FOV IDED BY PECO/PO EENGINEESUGUST 2, 2024.  
 4. POPOSED TSM ISSION LINES EE FOV IDED BY PECO/PO EENGINEESUGUST 21, 2024.

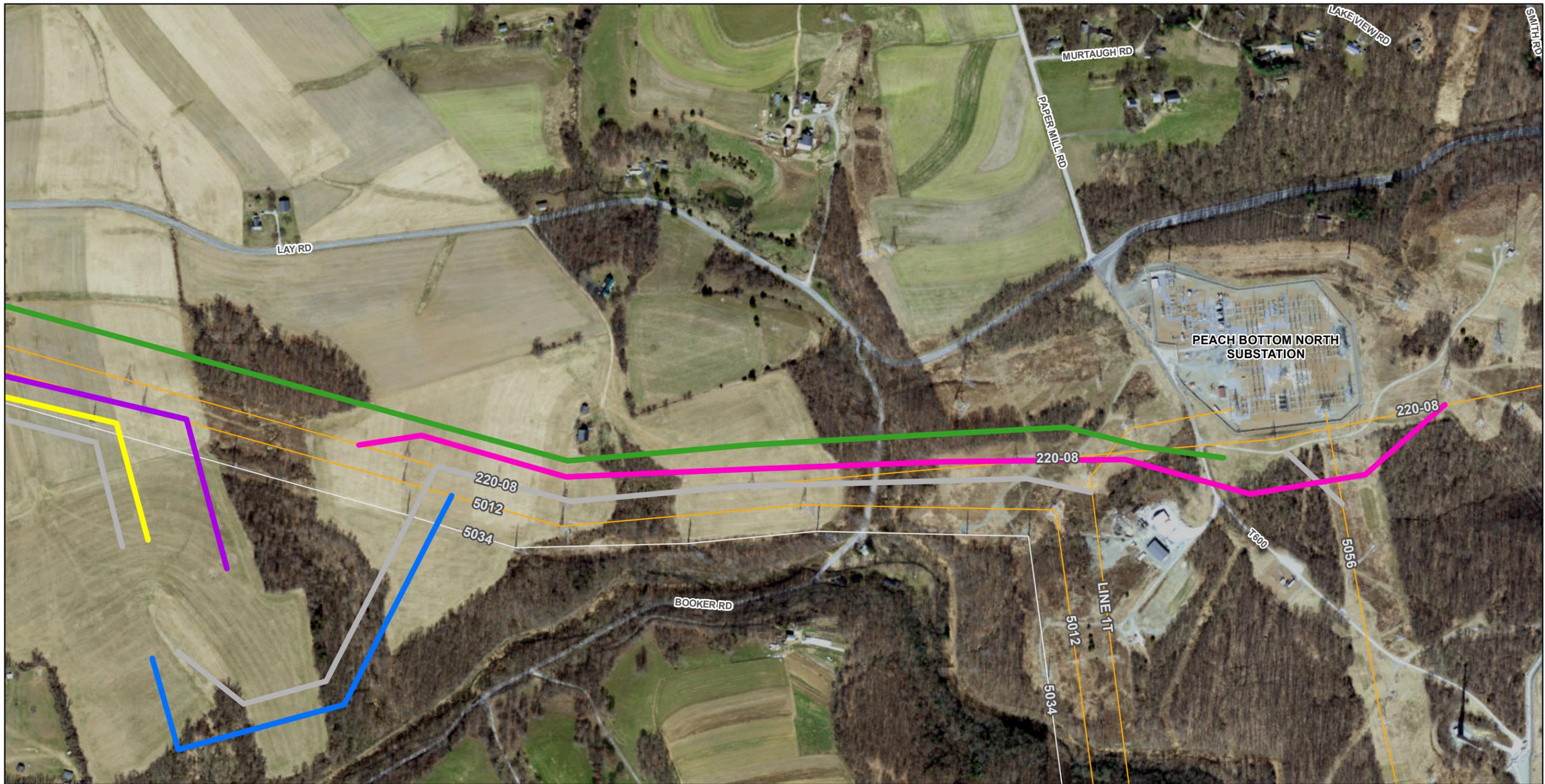
**REFERENCES:**  
 STE, COUNTYND MUNICIRL BOUNDDES (PENNDOT 10/2023); YQK COUNTY 0.5-FOOT OTHOBEY (PEM 2021)

0 500 1,000  
 Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



<b>Attachment 20</b> <b>Map of Project Segments</b>	
<b>Brandon Shores Retirement Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company	
Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/28/2024



**Legend**

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220-08 LINE	EXISTING TRANSMISSION LINE
220-93 LINE	EXISTING CALPINE LINE (OUT OF SCOPE)
5012 LINE	STATE BOUNDARY
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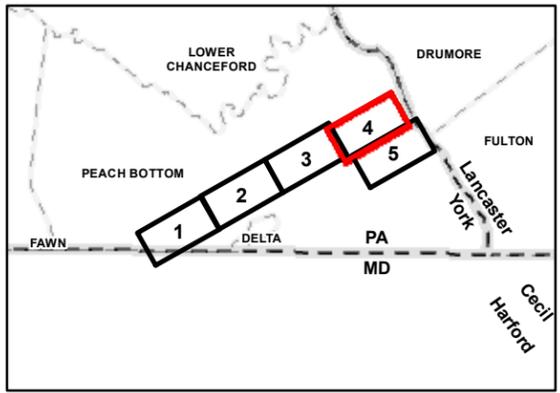
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**REFERENCES:**  
 STATE, COUNTY AND MUNICIPAL BOUNDARIES (PENNDOT 10/2023); YORK COUNTY 0.5-FOOT ORTHOIMAGERY (PEMA 2021)

0 500 1,000  
 Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
 PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



<b>peco</b> AN EXELON COMPANY	
<b>Attachment 20</b> <b>Map of Project Segments</b>	
<b>Brandon Shores Retirement</b> <b>Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company	
Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/28/2024



**Legend**

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220-08 LINE	EXISTING TRANSMISSION LINE
220-93 LINE	EXISTING CALPINE LINE (OUT OF SCOPE)
5012 LINE	STATE BOUNDARY
5040 LINE	COUNTY BOUNDARY
5042 LINE	MUNICIPAL BOUNDARY

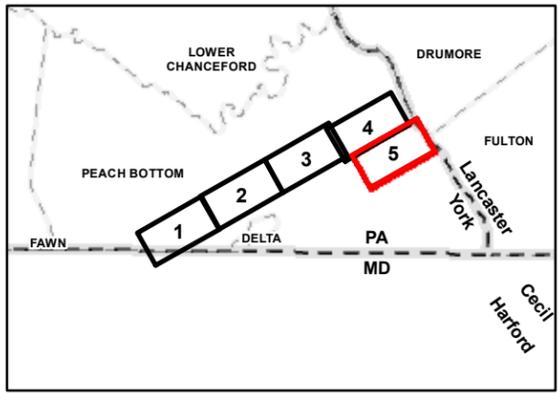
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0 500 1,000  
Feet

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET  
PROJECTION: LAMBERT CONFORMAL CONIC. UNITS: FOOT US



<b>peco</b> AN EXELON COMPANY	
<b>Attachment 20</b> <b>Map of Project Segments</b>	
<b>Brandon Shores Retirement</b> <b>Mitigation Project</b> Peach Bottom Township, York County Pennsylvania PECO, an Exelon Company	
Prepared By: BSF	Checked By: DY/RB
Job: 60727782	Date: 8/28/2024