BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of Transource Pennsylvania, LLC for approval of the Siting and Construction of the 230 kV Transmission Line Associated with the Independence Energy Connection - East and West Projects in portions of York and Franklin Counties, Pennsylvania.	A-2017-2640195 A-2017-2640200
Petition of Transource Pennsylvania, LLC for a finding that a building to shelter control equipment at the Rice Substation in Franklin County, Pennsylvania is reasonably necessary for the convenience or welfare of the public.	P-2018-3001878
Petition of Transource Pennsylvania, LLC for a finding that a building to shelter control equipment at the Furnace Run Substation in York County, Pennsylvania is reasonably necessary for the convenience or welfare of the public.	P-2018-3001883
Application of Transource Pennsylvania, LLC for approval to acquire a certain portion of the lands of various landowners in York and Franklin Counties, Pennsylvania for the siting and construction of the 230 kV Transmission Line associated with the Independence Energy Connection – East and West Projects as necessary or proper for the service, accommodation, convenience or safety of the public.	A-2018-3001881, *et al.*

JOINT AMENDED APPLICATION OF TRANSOURCE PENNSYLVANIA, LLC AND PPL ELECTRIC UTILITIES CORPORATION

TO ADMINISTRATIVE LAW JUDGES ELIZABETH H. BARNES AND ANDREW CALVELLI:

I. INTRODUCTION

Transource Pennsylvania, LLC ("Transource PA") and PPL Electric Utilities Corporation ("PPL Electric") herby jointly file this Amendment to the *Application of Transource Pennsylvania, LLC Filed Pursuant to 52 Pa. Code Chapter 57 Subchapter G, for Approval of the Siting Construction of the 230 kV Transmission Line Associated with the Independence Energy Connection-East Project in Portions of York County, Pennsylvania* which was filed on December 27, 2017, at Docket No. A-2017-2640195 and was consolidated with *Application of Transource Pennsylvania, LLC Filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the 230 kV Transmission Line Associated with the Independence Energy Connection – West Project in Portions of Franklin County, Pennsylvania*, which was also filed on December 27, 2017, at Docket No. A-2017-2640200.

In this Amended Application, Transource PA and PPL Electric request the Pennsylvania Public Utility Commission's ("Commission") authority for siting an alternative route for the East Portion ("Alternative IEC East Portion") of the Independence Energy Connection ("IEC Project"). The alternative route will utilize existing PPL Electric right-of-way and transmission infrastructure in York County to the extent reasonably possible. Various parties in Pennsylvania and in the related proceeding in Maryland[1] supported using the PPL Electric right-of-way and existing infrastructure as an alternative to Transource PA's original configuration. Transource PA has entered settlement agreements with PPL Electric, York County Planning Commission ("YCPC"), and Citizens to Stop Transource York County, Maple Lawn Farms, Barron Shaw and Shaw Orchards (the latter four collectively, "York County Citizens") to file and support the reconfiguration set forth herein.

[1] On December 27, 2017, Transource also filed an Application before the Maryland Public Service Commission ("MD PSC") requesting approval for the portion of the IEC Project located in portions of Harford and Washington Counties, Maryland. The Application was docketed at Case No. 9471.

Transource PA and PPL Electric request the Commission's approval to file this Amendment in accordance with the Commission's regulations at 52 Pa. Code § 57.72 and the terms of the settlement agreements that Transource PA executed with PPL Electric, YCPC, and York County Citizens.

The reconfigurations described in this Amended Application and Attachments pertain to the East Portion of the IEC Project and are contingent upon the both the East Portion of the IEC Project being approved, as amended, and the West Portion of the IEC Project be approved without modification. In the event that the Commission denies the reconfiguration of the East Portion of the IEC Project, Transource PA supports the original configuration and is not withdrawing that proposal.

Transource PA and PPL Electric amend the Siting Application as follows:

II. BACKGROUND

1. On December 27, 2017, Transource PA filed two Applications for the siting of electric transmission lines related to a project known as the IEC Project. The IEC Project consists of two segments—the "East Portion" in portions of York County, Pennsylvania, and the "West Portion" in portions of Franklin County, Pennsylvania. As fully explained in the December 27, 2017 Siting Application and testimony of Transource PA witnesses, the East and West Portions of the IEC Project were proposed to alleviate transmission congestion constraints and provide reliability benefits in Pennsylvania, Maryland, West Virginia, and Virginia.

2. The matter was assigned to Administrative Law Judges Elizabeth H. Barnes and Andrew Calvelli (the "ALJs") to conduct evidentiary hearings and issue a recommended decision.

3. Notice of the Applications appeared in the Pennsylvania Bulletin on January 20, 2018.

4. Various parties have intervened in this proceeding, including but not limited to the Office of Consumer Advocate ("OCA"), Stop Transource Franklin County ("STFC"), York County Citizens, West Penn Power & Mid-Atlantic Interstate Transmission, LLC, PECO Energy Company, PPL Electric, and YCPC. Numerous other individuals and organizations filed Protests and Petitions to Intervene.

5. A Notice of Prehearing Conference was issued on January 4, 2018, scheduling the Initial Prehearing Conference in both dockets for March 13, 2018. On February 28, 2018, the ALJs issued a Prehearing Conference Order directing that the parties submit prehearing conference memoranda by March 8, 2018.

6. The ALJs issued a Protective Order on March 14, 2018. The parties have engaged in extensive discovery throughout the course of this proceeding, some of which has been the subject of various motions filed by the parties and discovery orders issued by the ALJs.

7. On March 28, 2018, the ALJs issued a Procedural Order adopting a litigation schedule and consolidating the Applications.

8. On May 15, 2018, Transource PA filed two Petitions for findings that a building to shelter control equipment at the proposed Rice Substation in Franklin County and a building to shelter control equipment at the proposed Furnace Run Substation in York County are reasonably necessary for the convenience or welfare of the public ("Zoning Petitions").

9. Also on May 15, 2018, Transource PA filed 133 eminent domain applications in connection with both the East and West segments of the IEC Project ("Condemnation

Applications"), some of which were later withdrawn due to progressions in the engineering and design of the IEC Project and subsequent agreements with certain landowners.

10. Public input hearings were conducted in Franklin County on May 22 and 23, 2018, and in York County on May 9 and 14, 2018. Additional public input hearings in Franklin County were held on September 18, 2018. Additional public input hearings in York County were held on September 20, 2018. Multiple site views were also held in both Franklin County and York County.

11. A second prehearing conference was held on July 9, 2018.

12. On September 25, 2018, other parties, expect STFC, submitted their direct testimony. STFC submitted its direct testimony on October 11, 2018.

13. Transource PA submitted its rebuttal testimony on November 27, 2018.

14. Also on November 27, 2018, Transource PA amended the Siting Application and submitted revised aerial mapbooks to reflect a minor proposed route adjustment, which maintained the original 1,000 foot corridor consisting of 500 feet on each side of the centerline.

15. Following the submission of Transource PA's rebuttal testimony, Citizens York County and Maple Lawn Farms, OCA, and STFC filed motions requesting that the procedural schedule be amended. STFC also requested that certain of Transource PA's rebuttal testimony regarding reliability benefits be stricken.

16. Transource PA filed Answers to the OCA's and Citizens York County's Motions on December 13, 2018. Transource PA filed an Answer to STFC's Motion on December 17, 2018.

17. On December 28, 2018, the ALJs issued an Order striking certain portions of Transource PA's rebuttal testimony regarding reliability benefits and amending the procedural schedule.

18. The OCA, Citizens York County, STFC, Barron Shaw, YCPC, and PPL Electric submitted surrebuttal testimony on January 30, 2019.

19. On February 1, 2019, Transource PA filed a Petition for Interlocutory Review and Answer to Material Question requesting that the Commission grant interlocutory review of the ALJs' Order striking Transource PA's testimony regarding reliability benefits.

20. On February 11, 2019, Transource PA filed a Brief in support of its Petition for Interlocutory Review. Also on February 11, 2019, the OCA, STFC, and Citizens York Coutny filed Briefs in opposition to Transource PA's Petition for Interlocutory Review.

21. On February 11, 2019, Transource PA served its rejoinder testimony.

22. On February 14, 2019, the OCA and STFC filed Motions to Strike portions of Transource PA's rejoinder testimony. Citizens York County filed a letter in support of the Motions to Strike.

23. Evidentiary hearings were held on February 21-22, and 25-27, 2019.

24. On March 20, 2019, the Commission issued an Order granting Transource PA's Petition for Interlocutory Review, answering the material questions in the affirmative, and returning the matter to the ALJs for further proceedings consistent with the Commission's Order.

25. On April 2, 2019, the ALJs issued an Order scheduling further evidentiary hearings for June 27-28, 2019.

26. Transource PA submitted supplemental testimony on May 14, 2019 to provide an update regarding Conceptual Alterative 3A.

27. On May 29, 2019, the OCA served supplemental surrebuttal testimony. On June 3, 2019, STFC served supplemental surrebuttal testimony.

28. On June 17, 2019, Transource PA served supplemental rejoinder testimony.

29. On June 18, 2019, Transource PA filed a Motion to Suspend the Procedural Schedule in order to allow the parties additional time to engage in settlement discussions.

30. On June 21, 2019, the ALJs issued an Order granting Transource PA's Motion to Suspend the Procedural Schedule and rescheduling the further evidentiary hearings regarding reliability for August 7 and 8, 2019.

31. On July 26, 2019, counsel for Transource PA informed the ALJs that the parties are continuing to engage in settlement discussions and requested that the further hearing be rescheduled. The ALJs canceled the further hearing scheduled for August 7 and 8, 2019.

32. The parties continued to engage in settlement discussions, which resulted in Transource PA executing settlement agreements with PPL Electric, YCPC, and York County Citizens. The settlement agreements provide that Transource PA will present the Commission with an alternative route for the East Portion of the IEC Project, the "Alternative IEC East Portion."

33. On October 17, 2019, Transource filed the settlement agreements with the Commission. This Amended Application is being filed in accordance with the settlement agreements.

34. As noted above, this Amended Application is jointly filed by Transource PA and PPL Electric.

Transource PA's address is as follows:

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Columbus, OH 43215-2372
Attention: Antonio Smyth

PPL Electric's address is as follows:

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Allentown, PA 18101

Transource PA's attorneys are:

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35. Transource PA and PPL Electric are public utilities as defined in Section 102 of the Public Utility Code, 66 Pa.C.S. § 102.

36. Accompanying this Amended Application are the following Attachments that provide additional detailed information regarding the proposed modifications to the East Portion of the IEC Project:

- Supplemental Attachment 1 — Commission Regulation Cross-Reference Matrix
- Supplemental Attachment 2 — Supplemental Necessity Statement
- Supplemental Attachment 3 — Supplemental Siting Analysis
- Supplemental Attachment 4 — Supplemental Engineering Description
- Supplemental Attachment 5 — List of Owners of Property within the Right-of-Way
- Supplemental Attachment 6 — Agency Requirements
- Supplemental Attachment 7 — List of Governmental Agencies, Municipalities, and Other Public Entities Receiving the Application
- Supplemental Attachment 8 — List of Governmental Agencies, Municipalities, and Other Public Entities Contacted
- Supplemental Attachment 9 — List of Public Locations where the Siting Application can be Viewed by the Public
- Supplemental Attachment 10 — Electric and Magnetic Fields Policy and Practices of Transource Pennsylvania and Transource Maryland
- Supplemental Attachment 11 — Vegetation Management
- Supplemental Attachment 12 — Agency Coordination
- Supplemental Attachment 13 — Public Notice Requirements

37. Also accompanying this Amended Application are the following written direct testimonies further explaining and supporting the Amendment to the Siting Application:

- Brian D. Weber, Managing Director Transmission Business Development at American Electric Power Service Corporation.
- Steven R. Herling, former PJM Vice President of Planning and current Executive Consultant at PJM.
- Timothy J. Horger, PJM's Director of Energy Market Operations.
- Barry A. Baker, Vice-President and Department Manager for the Pennsylvania Impact Assessment & Permitting (IAP) Department at AECOM and AECOM co-Regional Practice lead in the Northeast U.S.
- Douglas J. Grossman, P.E., Transmission Siting Supervisor at PPL Electric.
- Matthew Baranoksi, Support Engineer at PPL Electric.
- Kyle Swartzentruber, Senior Engineer at PPL Electric.
- Austin K. Wesloh, Transmission Right of Way and Real Estate Supervisor at PPL Electric.

III. THIS AMENDED APPLICATION PROPOSES A RECONFIGURATION OF THE EAST PORTION OF THE IEC PROJECT.

38. In this proceeding, and in the ongoing proceeding before the MD PSC, various parties have requested that Transource PA utilize existing PPL Electric infrastructure and rights-of-way in York County to the extent possible to accommodate the IEC Project. *See, e.g.*, OCA St. No. 2, pp. 20-21; YCPC St. No. 1, p. 2; Citizens York County St. No. 1, p. 15; PPL Electric Surr. Testimony, pp. 1-3. This issue was also raised the public input hearings held in York County.

39. In response to these requests and requests by the Maryland Power Plant Research Project ("PPRP"), PJM evaluated several proposed reconfigurations of the East Portion of the IEC Project to determine if they would meet PJM's cost-benefit and reliability planning criteria.

Transource PA witness Herling described PJM's evaluation of the alternative configurations at the evidentiary hearing. *See* Tr. at p. 2296-2298.

40. One of the reconfigurations evaluated by PJM produces a cost/benefit ratio of 1.66 and also addresses the reliability violations that would be resolved by the original configuration of the IEC East Portion of Project 9A. The cost/benefit ratio and overall level of benefits for the reconfiguration are lower than the cost/benefit ratio and level of benefits for the original configuration. However, various parties in both Pennsylvania and Maryland support the reconfiguration because it will rely heavily on utilizing existing transmission infrastructure and right-of-way in both Pennsylvania and Maryland.

41. Given parties' support for the reconfiguration, Transource PA has agreed to propose the reconfigured route as the preferred option in York County. PPL Electric has also agreed to construct and own transmission lines in York County if the Commission approves the reconfigured route and directs Transource PA and PPL Electric to use the reconfigured route instead of the original configuration. As explained below, under the reconfiguration, Transource PA would continue to own the new Furnace Run substation, which will be expanded within the existing footprint to accommodate the reconfiguration. A revised diagram of the Furnace Run Substation is attached as "Appendix A."

IV. DESCRIPTION OF THE PROPOSED AMENDMENT

42. Transource PA and PPL Electric amend the Siting Application so that the preferred route for the East Portion of the IEC Project will be reconfigured as set forth below:

i. PPL Electric will reroute the existing Manor-Graceton 230 kV line from both Manor and Graceton to terminate in Transource PA's Furnace Run Substation, creating a Furnace Run-Manor 230 kV line and a Furnace Run – Graceton #1 230kV line.

ii. PPL Electric will construct a new Furnace Run - Graceton #2 230kV circuit in Pennsylvania by:

1. PPL Electric constructing a new 230kV line from Transource PA's Furnace Run station to the intersection of the current PPL Electric Manor-Graceton 230kV line.

2. Adding a new line, consisting of new arms, conductors and necessary hardware, to the open positons on the existing towers on the current Manor –Graceton 230kV line from the Manor – Graceton 230kV intersection point south to the state line.

3. The conductors for the new Furnace Run-Manor, Furnace Run - Graceton #1 and Furnace Run – Graceton #2 230kV lines will be similar to those used by PPL Electric when it rebuilt the Conastone-Otter Creek and Graceton Manor 230 kV lines.

iii. PPL Electric will reroute the Conastone-Otter Creek 230 kV line from both Otter Creek and Conastone to terminate in Transource PA's Furnace Run Substation, creating a Furnace Run-Otter Creek 230 kV line and a Furnace – Run Conastone #1 230kV circuit.

iv. PPL Electric will construct a new Furnace Run-Conastone #2 230 kV line in Pennsylvania by:

1. PPL Electric constructing a new 230kV line from Transource PA's Furnace Run station to the intersection of the current Otter Creek - Conastone 230kV line.

2. Adding a new line, consisting of new arms, conductors and necessary hardware, to the open positons on the existing towers on the current Otter Creek – Conastone 230kV line from the Otter Creek – Conastone 230kV intersection point south to the Conastone Substation.

3. The conductors for the new Furnace Run – Otter creek, Furnace Run-Conastone #1 and Furnace Run – Conastone #2 230kV lines will be similar to those used by PPL Electric when it rebuilt the Conastone-Otter Creek and Graceton-Manor 230 kV lines.

4. PPL Electric will perform all of the construction of the new Furnace Run-Conastone #2 230 kV circuit located in Pennsylvania, whereas BGE will perform all of the construction of the new Furnace Run-Conastone #2 230 kV circuit located in Maryland.

v. Transource PA will modify the initial Furnace Run station configuration to accommodate the addition of a third 500/230kV transformer and terminate the six 230kV lines in the station.

43. A diagram of the Alternative East Portion of the IEC Project is provided in Supplemental Attachment 4 to the Amended Application.

44. With the exception of the Furnace Run Substation, which will be constructed and owned by Transource PA, PPL Electric will construct, own, and operate the portions of the Alternative East Portion of the IEC Project that are located in Pennsylvania. Transource PA will construct, own, and operate all portions of the West Portion of the IEC Project that are located in Pennsylvania. The proposed West Portion of the IEC Project remains unchanged from the original Application.

45. The reconfigured route will require new transmission towers for approximately four (4) miles in York County. The four (4) mile segment includes a two (2) mile segment west of the proposed Furnace Run Substation to the existing Manor to Graceton corridor and a two (2) mile segment east of the proposed Furnace Run Substation to the existing Otter-Creek to Conastone corridor.

46. PPL Electric currently has existing right-of-way from Furnace Run to both the Mannor to Graceton corridor and the Otter-Creek to Conastone corridor. However, certain of the right-of-way must be expanded to accommodate the new transmission infrastructure on this four (4) mile segment.

47. The additional circuits to be installed within the Manor to Graceton corridor and Otter-Creek to Conastone corridor will be installed on PPL Electric's existing transmission infrastructure and will not require new right-of-way. PPL Electric's existing transmission

infrastructure within both the Manor to Graceton corridor and the Otter-Creek to Conastone corridor currently only has one circuit and can support two circuits on the existing towers.

48. To summarize, the Furnace-Run to Conastone double circuit will be approximately eighteen (18) miles in total length, of which approximately two (2) miles will be constructed in the expanded right-of-way with new transmission towers and sixteen (16) miles will be in the existing ROW on the existing towers. The Furnace Run-Graceton double circuit will be approximately eleven (11) miles in total length, of which approximately two (2) miles will be constructed in the expanded right-of-way with new transmission towers and nine (9) miles will be in the existing right-of-way on existing towers. See Supplemental Attachment 4.

V. ENVIRONMENTAL ANALYSIS OF THE RECONFIGURED ROUTE

49. The environmental impacts on the reconfigured route will be minimal. The four (4) mile segment where new infrastructure will be constructed currently consists of aged infrastructure that is not in service. This aged infrastructure will be removed and replaced with new infrastructure. The remaining circuits will be installed on existing infrastructure that was designed to hold additional circuits. Adding new circuits to these existing towers will have no detrimental environmental effects.

50. PPL Electric conducted a supplemental siting analysis comparing the original route for the IEC East Portion to the Alternative IEC East Portion. The supplemental siting analysis is fully described in Supplemental Attachment 3 and the supplemental testimony of witness Baker. The Alternative IEC East Portion will affect fewer new landowners and parcels and impact less natural resources. The Alternative IEC East Portion crosses fewer streams and will require less tree clearing as compared to the originally proposed route. As such, the Alternative IEC East Portion will result in less overall environmental impacts relative to the

original route for the IEC East Portion. The Alternative IEC East Portion also avoids construction challenges associated with steep slopes in the Muddy Creek area as only a second conductor will be added to the existing towers.

VI. RIGHTS-OF-WAY

51. The reconfiguration uses existing infrastructure to the extent practicable for the East segment of the IEC Project. Thus, the modifications to the East Portion of the IEC Project as described herein will eliminate the need for the eminent domain applications that were filed in conjunction with East Portion of the IEC Project. Transource PA intends to withdraw these eminent domain applications pending final Commission approval of the Sitting Application as modified by this Amended Application. In the event that the Commission would deny the Amended Application and direct Transource PA to rely on the original route, Transource PA would not withdraw the eminent domain applications that are necessary for the route selected by the Commission.

52. No expansion of the existing right-of-way was necessary for the Manor-Graceton corridor and the Otter Creek-Conastone corridor.

53. For the corridors from Manor-Graceton to Furnace Run and from Otter Creek-Conastone to Furnace Run ("Furnace Run Segments"), PPL Electric owns the existing right-of-way, which varies in width from undefined centerline rights to a 300 foot corridor owned by PPL Electric in fee simple. In some areas, PPL Electric also has tree clearing/tree trimming rights in place to prevent encroachments and minimize the potential impacts of danger trees.

54. PPL Electric was required to acquire additional easement rights to define the Furnace Run Segments to 225 feet in width. No condemnation applications are necessary for the

Alternative IEC East Portion because PPL Electric was able to acquire all necessary rights from landowners for the Furnace Run Segments prior to the submission of the Amended Application.

55. There are a total of 123 different landowners for 134 segments on the proposed route. The names and addresses of these landowners are provided in Supplemental Attachment 5. Detailed maps showing the properties traversed by the right-of-way are provided in Supplemental Attachment 3 to this Amended Application.

56. Prior to attempting to contact these landowners, PPL Electric provided packets of information to fully notify landowners of PPL Electric's plans to negotiate to acquire additional right-of-way. This packet of information provided the notices and information required by the Commission's regulations at 52 Pa. Code §§ 57.91 and 69.31.2.

VII. THE RECONFIGURATION OF THE EAST PORTION OF THE IEC PROJECT IS IN THE PUBLIC INTEREST

57. The Alternative IEC East Portion as set forth in this Amendment and the Attachments hereto and as described in the supporting testimony of Transource PA witnesses Weber, Herling, Horger and Baker and PPL Electric witnesses Grossman, Baranoski, Swartzentruber, and Weseloh were the result of discussions between various stakeholders during the course of this proceeding, which ultimately resulted in the settlement agreements between Transource PA and certain parties that were filed with the Commission. The Amendment is in the public interest and is necessary or proper for the service, accommodation, convenience, or safety of the public because it will sufficiently resolve the congestion issues identified by PJM while lessening the potential impact of the East Portion by eliminating the need for several

eminent domain applications and new right-of-way associated with the originally-proposed East Portion.[2]

VIII. NOTICE AND HEARING

58. Transource PA and PPL Electric will provide notice of the Amended Application as required by the Commission's regulations at 52 Pa Code § 57.74.

59. Transource PA and PPL Electric respectfully request that a prehearing conference be held during the week of February 17, 2020.

[2] The IEC Project as modified by the Amended Application sufficiently alleviates congestion costs, although not to as great of extent as the IEC Project as originally proposed.

WHEREFORE, Transource Pennsylvania, LLC and PPL Electric Utilities Corporation amend the Siting Application docketed at Docket No. A-2017-2640195 as explained above and in the attachments hereto and respectfully request that the Commission approve the Siting Application as amended as well as the consolidated Siting Application for the West Portion of the IEC Project at Docket No. A-2017-2640200, the Zoning Petitions associated with the Furnace Run Substation in York County, Docket No. P-2018-3001883, and the Rice Substation in Franklin County, Docket No. P-2018-3001878, and the consolidated Condemnation Applications that are necessary for the proposed routes.

Respectfully submitted,

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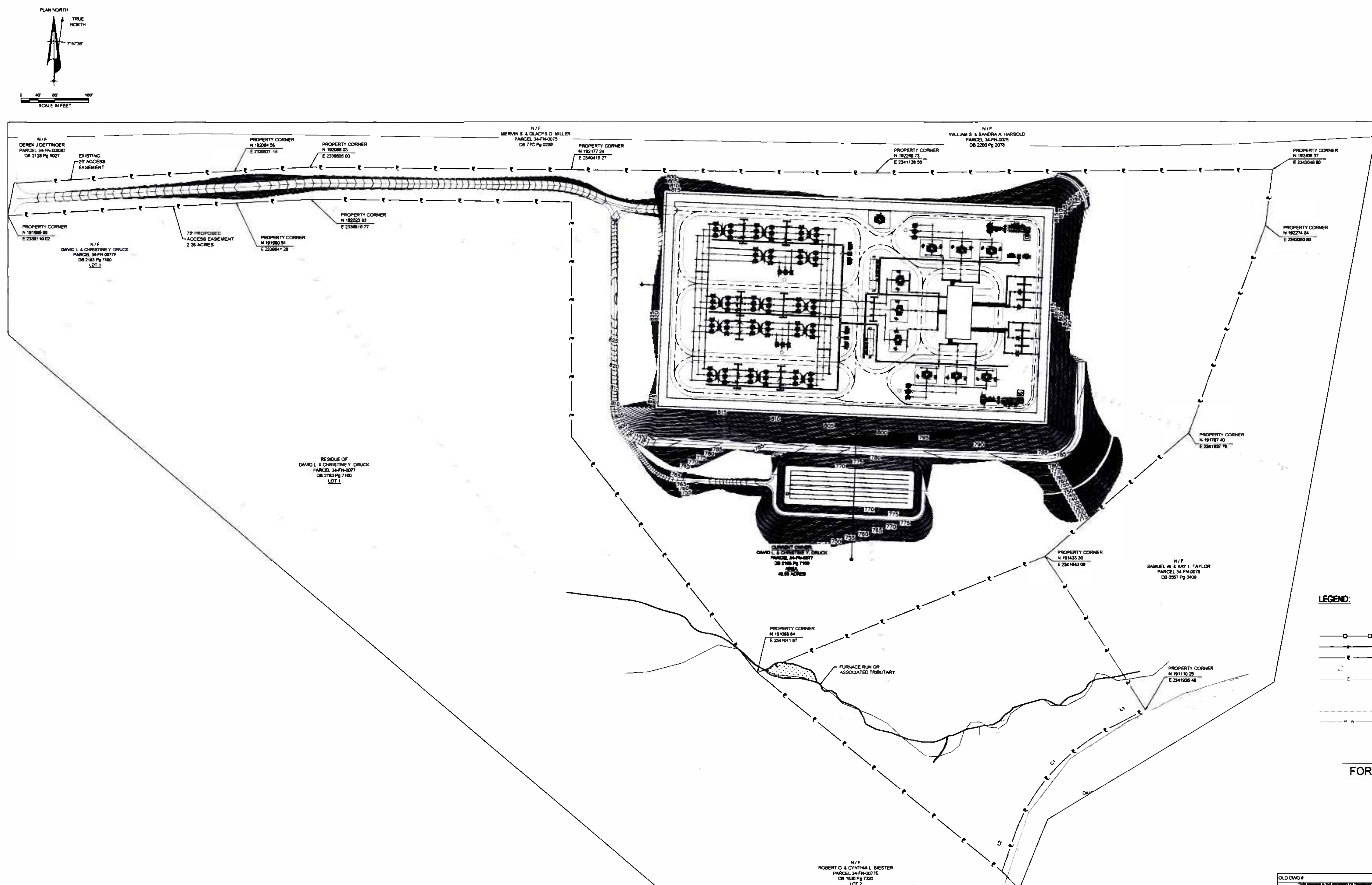
Counsel for PPL Electric Utilities Corporation

Date: January 29, 2020

Appendix "A"

DWG NO SK-03



LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED INTERIOR STATION FENCE
- PROPOSED EXTERIOR SECURITY FENCE
- PROPERTY LINE
- PROPOSED TRANSMISSION STRUCTURE
- PROPOSED TRANSMISSION LINE
- EXISTING TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE
- TOP/TOE OF SLOPE
- PROPOSED RIGHT-OF-WAY
- EXISTING TREE LINE

FOR REVIEW

PLOTTED 01-FEB-2018

NO	DATE	REVISION DESCRIPTION	APPR	DR	ENG	CK	ISSUE#

OLD DWG # | STD DWG #

TRANSOURCE

FURNACE RUN SUBSTATION

YORK COUNTY — PENNSYLVANIA

500/230 KV

SUBSTATION SITE PLAN

SCALE 1:80	DR P KENSLOW	ENG M BLAKE	CH S FERGUSON
	WO# 42683806-02	APPD -	DATE 10/29/19
TRANSOURCE	AEP	DWG NO SK-03	REV B

\\bmcd\dfs\Clients\TND\Transource\92486_Transource-SPA\Design\SUBSTATION\CADD\Working\Rice\Physical

AEP G (30 X 46)

VERIFICATION

I, Brian D. Weber, being the Vice President at Transource Energy, LLC hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect to be able to prove the same at a hearing held in this matter. 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: 1/24/19

VERIFICATION

I, DAVID A. QUIER, being the Director of Asset Management at PPL Electric Utilities Corporation, hereby state that the facts above set forth are true and correct to the best of my knowledge, information and belief and that I expect PPL Electric Utilities Corporation to be able to prove the same at a hearing held in this matter. 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: 1/28/2020

David A. Quier

SUPPLEMENTAL ATTACHMENT 1
PUC REGULATION CROSS-REFERENCE MATRIX

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
57.72	Form and content of application	
57.72(a)	Applications shall be in conformity with Section 1.31 (relating to form of documentary filings generally). Supporting exhibits such as maps, photographs and other engineering materials may be on paper not exceeding 28 inches by 40 inches.	Siting Application
57.72(b)	The application shall be signed by a person having authority with respect thereto and having knowledge of the matters herein set forth and shall be verified under oath.	Siting Application
57.72(c)	An application shall contain:	
57.72(c)(1)	The name of the applicant and the address of its principal business office	Siting Application
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.	Siting Application
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 right-of-way width and the location of the proposed HV line within each city, borough, town and township traversed.	Supplemental Attachment 3
57.72(c)(4)	The names and addresses of known persons, corporations and other entities of record owning property within the proposed right-of-way, together with an indication of HV line rights-of-way acquired by the applicant.	Supplemental Attachment 5
57.72(c)(5)	A general statement of the need for the proposed HV line in meeting identified present and future demands for service, of how the proposed HV line will meet that need and of the engineering justifications for the proposed HV line.	Supplemental Attachment 2
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.	Supplemental Attachment 10

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
57.72(c)(7)	A description of 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 which will be made to minimize the impact of the HV line upon the environmental and upon scenic and historic areas, including but not limited to impacts, where applicable, upon land use, soil and sedimentation, plant and wildlife habitats, terrain, hydrology and landscape.	Supplemental Attachment 3
52.72(c)(8)	A description of the efforts of the applicant to locate and identify archaeologic, geologic, historic, scenic or wilderness areas of significance within 2 miles of the proposed right-of-way and the location and identity of the areas discovered by the applicant.	Supplemental Attachment 3
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.	Supplemental Attachment 3
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 merit and detriments of each route, and a statement of the reasons for selecting the proposed HV line route.	Supplemental Attachment 3
57.72(c)(11)	A list of the local, State and Federal governmental agencies which have requirements which 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 in connection with the siting and construction of the proposed HV line.	Supplemental Attachment 6
57.72(c)(12)	The estimated cost of construction of the proposed HV line, and the projected date for completion.	Supplemental Attachment 2
57.72(c)(13)	The following exhibits:	
57.72(c)(13)(i)	A depiction of the proposed route on aerial photographs and topographic maps of suitable detail.	Supplemental Attachment 3

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
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 clearances at mid-span under normal load and average weather conditions and under predicted extreme load and weather conditions.	Supplemental Attachment 4
57.72(c)(13)(iii)	A simple drawing of a cross section of the proposed right-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.	Supplemental Attachment 4
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.	Supplemental Attachment 2
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.	Siting Application
57.72(c)(15)	Additional information as the Commission may require.	---
57.74(a)	(a) *Filing.* The applicant shall file with the Commission the original and six copies of the application. An affidavit of service showing the identity of those served under subsections (b) and (c) shall accompany the original and the copies of the application filed with the Commission.	Siting Application

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
57.74(b)	(b) *Copies.* At the time of filing, the applicant shall serve a copy of the application by registered or certified mail, return receipt requested, upon the following: (1) The chief executive officer, the governing body and the body charged with the duty of planning land use in each city, borough, town, township and county in which any portion of the HV line is proposed to be located. (2) The president of the public utility, other than the applicant, in whose service territory any portion of the HV line is proposed to be located. The Department of Environmental Resources, Attention: Bureau of Environmental Planning; Post Office Box 2357, 101 S. Second Street, Harrisburg, Pennsylvania, 17120. (NOTE: now Department of Environmental Protection at different Harrisburg office).	Certification of Service
57.74(c)	(c) *Notice.* (1) At the time of filing, the applicant shall serve a notice of filing and a map of suitable detail showing the proposed route of the proposed facility by registered or certified mail, return receipt requested, upon the following: (i) The Secretary of the Department of Transportation, Room 1200 Transportation and Safety Building, Harrisburg, Pennsylvania 17120. (ii) The Chairman of the Historical and Museum Commission, Post Office Box 1026, Harrisburg, Pennsylvania 17120. (iii) Other local, State or Federal agencies designated in § 57.72 (c)(11)(relating to form and content of application). (iv) The persons, corporations, and other entities designated in § 57.72(c)(4), unless they are served with a copy of the application under § 57.75(i) (relating to hearing and notice).	Notice of Filing

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
57.74(c)	(2) The notice of filing shall contain a statement identifying the filing, the date on which the filing was or is to be made, a description of the proposed line, the design voltage, the number of route miles, the right-of-way width and the location of the proposed HV line within each township traversed and a statement that a copy of the application is available for public examination as provided in subsection (d).	Notice of Filing
57.74(d)	(d) *Examination.* On the day of filing of the application, the applicant shall make a copy of the application available for public examination during ordinary business hours at a convenient location within a county in which any part of the proposed HV will be located.	Supplemental Attachment 9
57.74(e)	(e) *Additional notice.* The applicant shall provide an additional notice and shall serve such additional copies of the application without cost as the Commission may require.	---
Chapter 69	Interim guidelines require	
69.3102(a)	(a) Applications for electric transmission siting authority should provide the following information with the initial application for siting approval demonstrating its efforts to fully notify landowners who are either owners of land that will be purchased for the transmission project or will be subject to right of way/easement requirements: (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. (2) Copies of information provided to landowners by the public utility of any publicly disseminated notices advising landowners to contact the Commission or the Office of Consumer Advocate (OCA) in the event of improper land agent practices. (3) Copies of all notices sent under §57.91 (relating to disclosure of eminent domain power of electric utilities).	Supplemental Attachment 13

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
69.3102(b)	(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.	Supplemental Attachment 13
69.3102(c)	(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.	At this time, no informal presentations are scheduled for after the Siting Application is filed.
69.3105(1)	Applications for the siting of electric transmission lines should provide the following information as part of the §57.72(c) (relating to form and content of application) requirements: (1) Transmission applicants should utilize a combination of transmission route evaluation procedures including high-level GIS data, traditional mapping (including United States Geological Survey data and compilation), aerial maps and analysis of physical site specific constraints raised by affected landowners.	Supplemental Attachment 3
69.3105(2)	Applications for the siting of electric transmission lines should provide the following information as part of the §57.72(c) (relating to form and content of application) requirements: (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.	Supplemental Attachment 5 and PPL Electric Statement No. AA-4

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
69.3105(3)	Applications for the siting of electric transmission lines should provide the following information as part of the §57.72(c) (relating to form and content of application) requirements: (3) 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: (i) The environmental, historical, cultural and aesthetic considerations of each route. (ii) The proximity of these alternative routes to residential and nonresidential structures. (iii) The applicant's consideration of relevant existing rights of way. (iv) The comparative construction costs associated with each route.	Supplemental Attachment 3
69.3106	Applications for siting of electric transmission lines should include as part of the filing requirement under §57.72(e)(7) the following information: 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.	Supplemental Attachment 6

Administrative Code Section or Statute*	PUC Regulation Requirement	Location
69.3107(a)	(a) *Interim guidelines for the use of herbicides and pesticides.* Applicants for transmission line siting authority should provide a detailed vegetation management plan that includes the following components: (1) A general description of the utility's vegetation management plan. (2) Factors that dictate when each method, including aerial spraying, is utilized. (3) Vegetation management practices near aquatic and other sensitive locations. (4) Notice procedures to affected landowners regarding vegetation management practices. (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.	Supplemental Attachment 11
69.3107(b)	(b) *Interim guidelines for Electromagnetic Field (EMF) impacts.* 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.	Supplemental Attachment 10

*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.

SUPPLEMENTAL ATTACHMENT 2- NECESSITY STATEMENT

1.0 INTRODUCTION

PPL Electric Utilities Corporation ("PPL Electric") seeks approval from the Pennsylvania Public Utility Commission ("Commission" or "PA PUC") for the siting and construction of the Alternative IEC East Portion of the Independence Energy Connection Project ("IEC Project") in York County, Pennsylvania. The proposed Alternative IEC East Portion is part of the IEC Project approved by PJM Interconnection, L.L.C. ("PJM") to alleviate transmission congestion constraints in Pennsylvania, Maryland, West Virginia, and Virginia.

The original IEC Project approved by PJM is detailed in Transource Pennsylvania LLC's ("Transource PA") Application for approval of the IEC Project, filed with the PA PUC in December 2017 at Docket Nos. A-2017-2640195 and A-2017-2640200 ("December 2017 Siting Application"). The IEC Project consists of two components: the IEC East Portion and the IEC West Portion. The IEC West Portion of the IEC Project as described in the December 2017 Siting Application remains unchanged. During the course of the application proceedings in Maryland and Pennsylvania, several alternatives using existing infrastructure for the East Portion of the IEC Project were presented by parties for evaluation and consideration. One of the alternatives passed PJM's reliability and market efficiency tests with the addition of a third transformer at the Furnace Run Substation. Transource PA and other parties, including PPL Electric, entered into Settlement Agreements which would allow both the PA PUC and Maryland Public Service Commission ("MD PSC") to consider this alternative to the originally proposed IEC East Portion of the IEC Project. This alternative, referred to herein as the "Alternative IEC East Portion," utilizes an open circuit on two existing transmission lines in York County, PA and expands an existing right-of-way ("ROW") to accommodate the transmission lines going from Furnace Run to the existing transmission towers.

Under the Amended Application, Transource PA will be responsible for the construction, ownership, maintenance, and operation of the Furnace Run Substation and the IEC West Portion of the IEC Project. PPL Electric will be responsible for the construction of the Alternative IEC East Portion of the IEC Project in Pennsylvania, pending approval by the PA PUC. Baltimore Gas and Electric (BGE) will be responsible for the construction of the Alternative IEC East Portion of the IEC Project located in Maryland, subject to approval by the MD PSC.

The costs of the IEC West Portion of the Project remain unchanged since the original application. The estimated cost for the Alternative IEC East Portion is $195 million, with $125 million for the Furnace Run Substation and the remaining $70 million for the transmission line work in Pennsylvania and Maryland. Subject to the PA PUC's and MD PSC's approvals, construction of the IEC Project (inclusive of the Alternative IEC East Portion) is scheduled to begin as soon as practicable to meet the in-service date of February 2022 for the Alternative IEC East Portion and May 2021 for the IEC West Portion.

2.0 PROJECT NEED

The December 2017 Siting Application explains why the IEC Project is needed for market efficiency. *See* December 2017 Siting Application, Attachment 2, pages 2-5. PJM has reviewed the IEC Project, including the Alternative IEC East Portion, and has concluded that the IEC Project with the Alternative IEC East Portion continues to resolve the congestion issues that were identified in the December 2017 Siting Application.

Although the primary benefits from the IEC Project relate to market efficiency and the reduction of congestion costs, the IEC Project will also provide reliability benefits. During the re-evaluation of the IEC Project in September 2018, PJM identified five n-1 single contingency reliability criteria violations that would occur in 2023 if the IEC Project was not placed in service. Specifically, PJM identified that during the 2023 study year, there would be overloads on the following major transmission facilities: the Three Mile Island 500/230 kV Transformer, the Peach Bottom-Conastone 500 kV Line, the Hunterstown-Lincoln 115 kV Line, the Lincoln Tap-Lincoln 115 kV Line and the Lincoln Straban 115 kV Line. The IEC Project will resolve all of these significant reliability violations. However, if the IEC Project were not constructed, PJM would be required to seek other solutions to these reliability criteria violations. NERC and PJM planning criteria require that PJM develop solutions to all identified reliability criteria violations. Overloading electric transmission equipment can cause the equipment to heat beyond its limits and fail.

The IEC Project (regardless of whether the original IEC East Portion or the Alternative IEC East Portion is selected) will provide additional and alternative paths for electricity in the event of

outages on other Pennsylvania transmission facilities. The IEC Project will also allow the interconnection of future reliability, generation, and load projects in the area.

The IEC Project has undergone five (5) re-evaluations since it was awarded. Each re-evaluation has demonstrated that the IEC Project continues to pass the 1.25 benefit to cost ratio. PJM conducted the most recent reevaluation in November 2019, which demonstrated that the IEC Project with the Alternative IEC East Portion passed the benefit to cost ratio threshold with an overall 1.60 benefit to cost ratio. Furthermore, the IEC Project still resolves the emerging reliability violations seen in the year 2023, which is further described in the PJM Whitepaper November 2018.[1]

3.0 PROPOSED SOLUTION

The IEC West Portion of the IEC Project remains unchanged from the December 2017 Siting Application.

As noted above, the Alternative IEC East Portion is a revised route based upon a compromise and settlements of all of the active York County parties in this proceeding. The Alternative IEC East Portion of the IEC Project consists of cutting in the existing 230 kV circuits from Otter-Creek to Conastone and Manor to Graceton to the new Furnace Run substation and adding 230 kV circuits from Furnace Run to Conastone and Furnace Run to Graceton utilizing PPL Electric's existing towers and circuits to the extent possible. The Alterative East Portion also adds a 500 kV to 230 kV transformer and associated equipment at the Furnace Run substation. A detailed engineering description of the Alternative East Portion of the IEC Project is provided in Supplemental Attachment 4 to the Amended Application.

The PJM Board approved the IEC Project inclusive of the Alternative IEC East Portion in December 2019 contingent upon the approvals of the PA PUC and MD PSC.

[1] https://www.pjm.com/-/media/committees-groups/committees/teac/20181108/20181108-transource-white-paper.ashx

ALTERNATIVE IEC EAST PORTION COMPARISON

Furnace Run 230 kV Transmission Line Project SUPPLEMENTAL SITING STUDY

Prepared for:
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JANUARY 2020

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ACRONYMS

BG&E	Baltimore Gas and Electric
CWF	Coldwater Fisheries
EV	Exceptional Value
FEMA	Federal Emergency Management Agency
GIS	Geographic information system
HQ	High Quality
HQ-CWF	High Quality-Cold Water Fishery
IEC Project	Independence Energy Connection Project
kV	Kilovolt
MDPSC	Maryland Public Service Commission
NERC	North American Electric Reliability Corporation
NHD	National Hydrography Data set
NLCD	National Land Cover Database
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Services
NWI	National Wetlands Inventory
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PAPUC	Pennsylvania Public Utility Commission
PEM	Palustrine Emergent
PFBC	Pennsylvania Fish and Boat Commission
PFO	Palustrine Forested
PGC	Pennsylvania Game Commission
PHMC	Pennsylvania Historic and Museum Commission
PJM	PJM Interconnection, LLC
PPL Electric	PPL Electric Utilities Corporation
PSS	Palustrine Scrub Shrub
ROW	Right-of-way
TNC	The Nature Conservancy
T&E	Threatened and endangered (species)

Transource	Transource Energy
TSF	Trout Stocked Fishery
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WWF	Warm Water Fisheries
YCPC	York County Planning Commission

1.0 PROJECT OVERVIEW

PJM Interconnection, LLC (PJM), the regional transmission operator solicited proposals in 2014 to solve an electrical congestion issue on the grid. Numerous transmission providers proposed solutions to solve the problem, and PJM evaluated each proposal to determine the best solution. In March 2016, PJM selected Transource Energy's (Transource) proposal as the best solution to solve the problem. Transource's proposal, the Independence Energy Connection Project (IEC Project), consists of two 230 kilovolt (kV) transmission lines, two new 500/230 kV substations, and several incumbent upgrades. The Rice-Ringgold 230 kV transmission line (IEC West Project) begins in Franklin County, Pennsylvania at the new Rice Substation and terminates at the existing Ringgold Substation in Washington County, Maryland **(Figure 1)**. The Furnace Run-Conastone 230 kV transmission line (IEC East Project) begins at the new Furnace Run Substation in York County, Pennsylvania and terminates at the existing Conastone Substation in Harford County, Maryland.

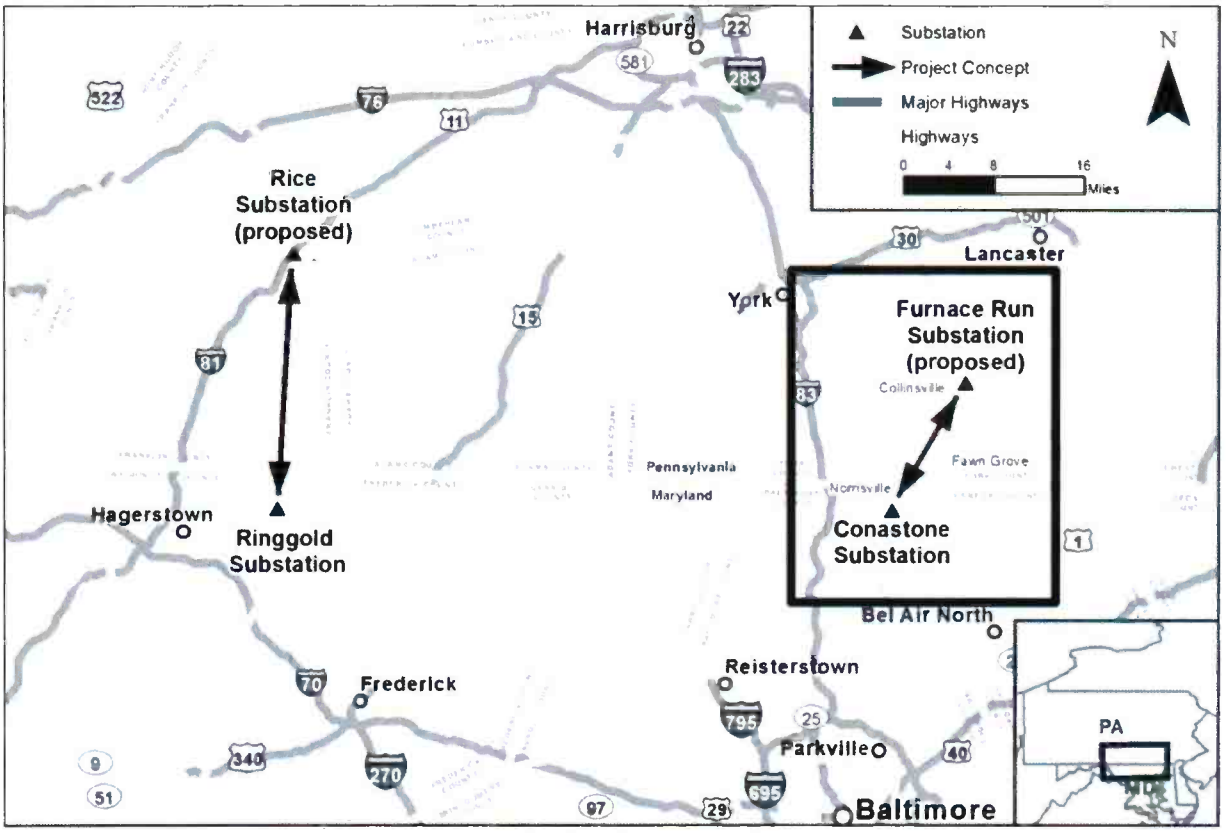


Figure 1: Project Location Map

Applications for approval to site these two transmission lines were submitted in December 2018 to the Pennsylvania Public Utility Commission (PAPUC) and the Maryland Public Service Commission (MDPSC) for their review and approval. During the application review process, several route alternatives were put forth by stakeholders which use various combinations of existing infrastructure for the IEC East Portion of the IEC Project. Transource and PJM determined that one of these configurations, with the addition of a third transformer at the Furnace Run Substation, passed the required reliability tests and market efficiency tests. A Settlement Agreement was reached with various parties to amend the Application to include the new Alternative IEC East Portion for consideration by the Pennsylvania and Maryland Commissions. This Supplemental Siting Study provides a summary comparative review of the original IEC East Proposed Route identified in Transource's Application (Docket A-2017-2640195) and the Alternative IEC East Portion identified by Transource and PJM, which is further described in the Settlement Agreement between Transource and PPL Electric Utilities Corporation (PPL Electric) which was filed with the PA PUC on October 17, 2019. The IEC West Project remains unchanged from the original Application.

1.1 Alternative IEC East Portion

Per the December 2017 Application for approval of the IEC East Project, Transource had identified a greenfield alignment (IEC East Proposed Route) that would extend for 15.8 miles (approximately 12.7 miles in Pennsylvania and approximately 3.1 miles in Maryland) between the proposed Furnace Run Substation and the Conastone Substation. This alignment would travel in a relatively direct southwesterly direction across predominantly agricultural and rural residential lands and would involve the need for acquiring new right-of-way (ROW) easements for all of the parcels crossed. The alignment would consist of a double-circuit system that would allow for the flow of electricity between Furnace Run and Conastone.

The Alternative IEC East Portion will utilize PPL Electric transmission lines in Pennsylvania and Baltimore Gas and Electric (BG&E) transmission lines in Maryland. The Alternative IEC East Portion involves adding a second circuit to the PPL Electric portion of two existing transmission lines, specifically the Otter Creek-Conastone and Manor-Graceton 230 kV lines that currently consist of only one circuit on their structures. PPL Electric previously secured approval to add a second circuit to each of these transmission lines within their existing ROWS as part of the PAPUC Letter of Notification (LON) process used in 2011. The recently rebuilt PPL Electric structures have additional capacity to install a second circuit on each which was noted in the 2011 LON's for each line. Both lines extend south into Maryland where the incumbent utility, BG&E, will add a second circuit to their structures and terminate them into the existing Conastone and Graceton Substations. A full description of the Alternative IEC East Portion was filed with the Settlement Agreements on October 17, 2019.

Both of the double-circuit transmission lines (Otter Creek- Conastone and Graceton - Manor) will tie into the new Furnace Run Substation, which is located on the same parcel as discussed in the previous Siting Study and Application by Transource. The Furnace Run Substation is located between the two existing transmission lines and immediately adjacent to an existing PPL Electric ROW corridor which currently contains a de-energized 69 kV transmission line (proposed Furnace Run 230 kV ROW). This ROW extends approximately 2 miles east and 2 miles west out of the Furnace Run Substation. Electrical connection between the existing PPL Electric 230 kV lines and the Furnace Run Substation would require construction of three new 230 kV circuits within the existing 69 kV ROW that would be supported by parallel monopole structures (one double-circuit structure and one single-circuit structure (**Figure 2**). Construction of these structures would require updated ROW easements to widen the ROW to 225 feet and removal of the de-energized 69 kV transmission line. Overall, the Alternative IEC East Portion would extend for 24 miles in Pennsylvania with only 4 miles requiring an expansion of an existing ROW and new structures. Both potential alternative routes are illustrated in **Figure 3**.

The focus of this supplemental siting study is to compare the original Proposed Route discussed in the Transource application for the Pennsylvania portion of the IEC East Project to the Alternative IEC East Portion which uses existing PPL Electric ROWs. Specifically, PPL Electric is seeking approval from the PAPUC to add a second circuit to the Otter Creek-Conastone and Manor-Graceton lines and for the modifications required along the 4-mile ROW corridor (Furnace Run 230 kV Corridor) that will involve ROW widening and installation of new structures.

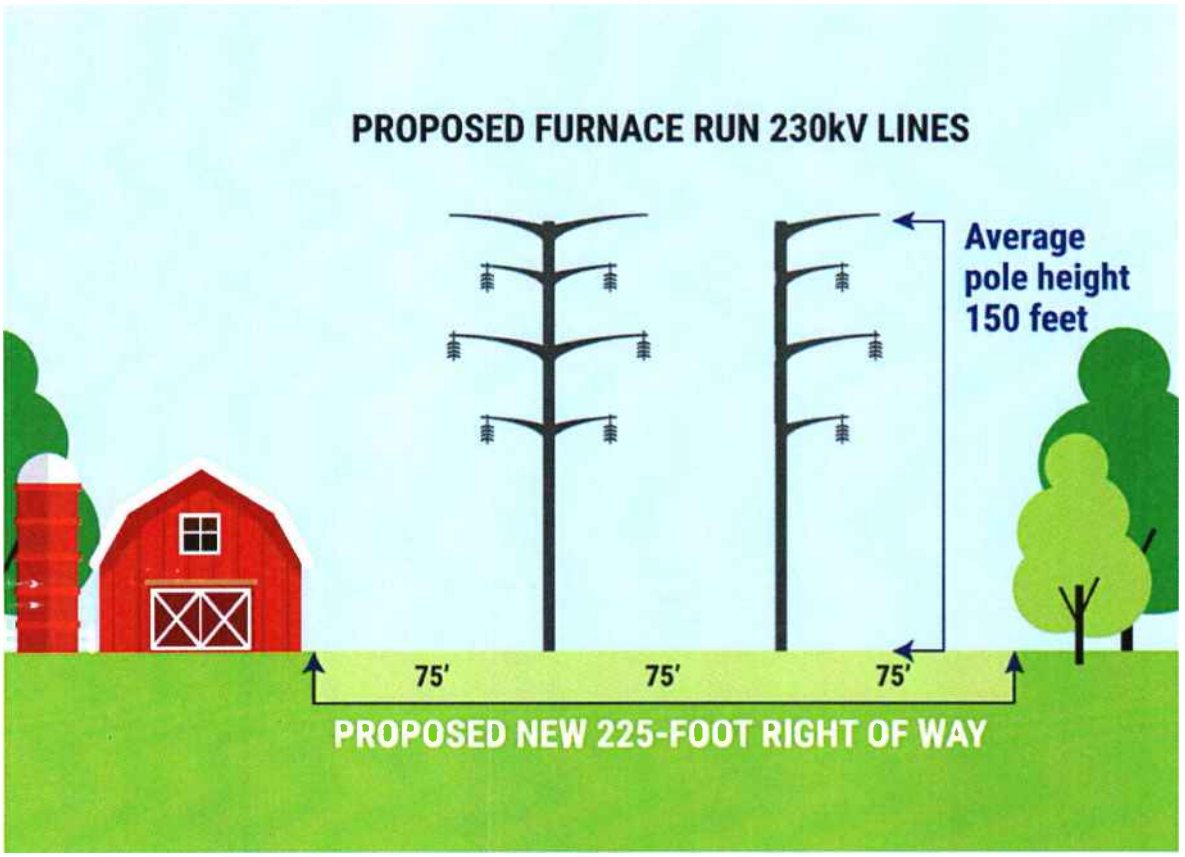
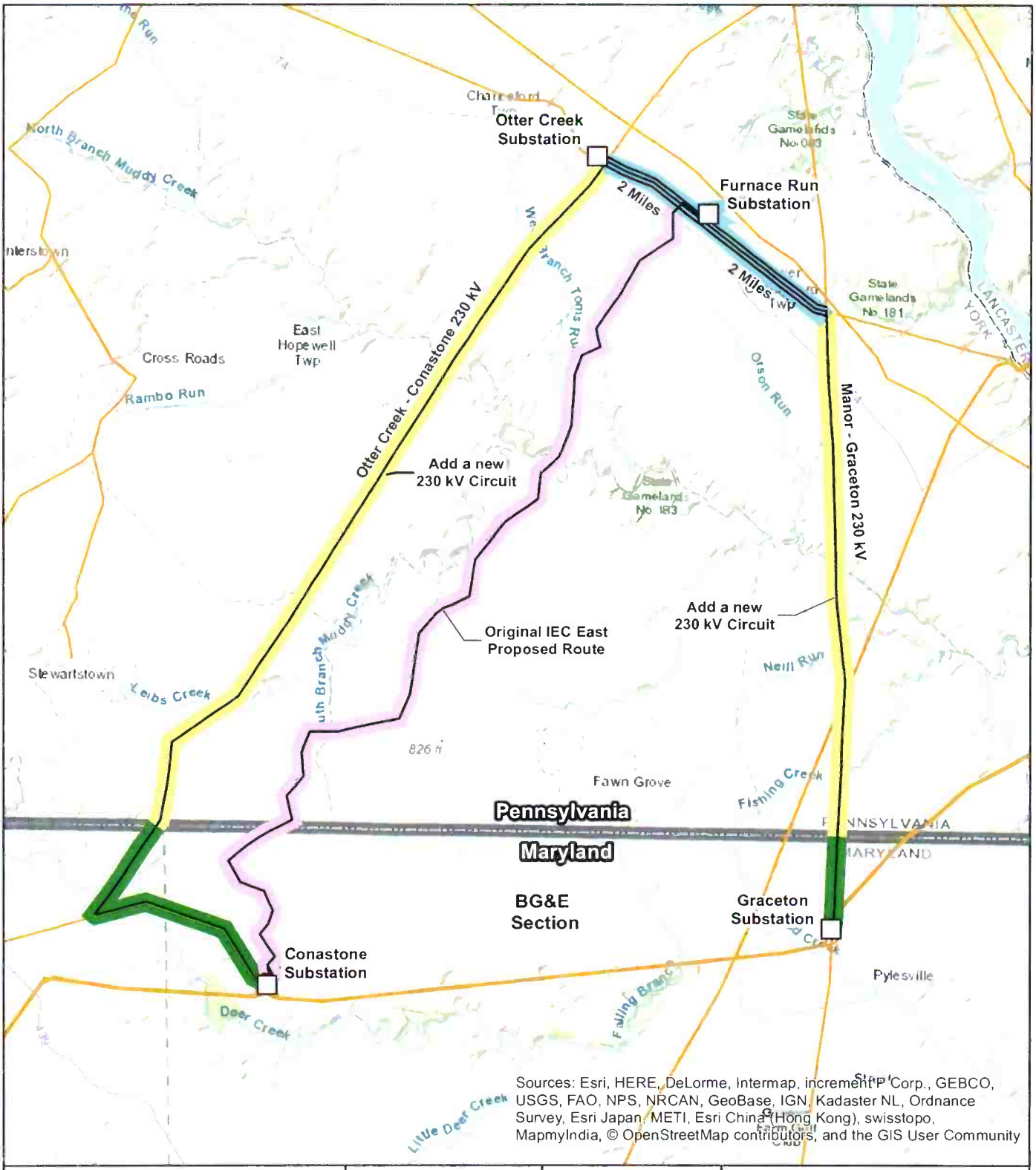


Figure 2: Furnace Run 230 kV Monopole Structures



Substation
Original IEC East Proposed Route
Alternative IEC East Portion
Existing PPL Electric Lines
New Furnace Run 230 kV Corridor
BG&E Maryland Portion
Existing Transmission Lines

Data Sources: PPL (2019), ESRI (2011), NLCD (2011)

Coordinate System: UTM Zone 18N NAD 83

January 24, 2020

Pennsylvania

Maryland

Figure 3
Alignment of the Original IEC East Proposed Route and the Alternative IEC East Portion

ppl
PPL Electric Utilities

Furnace Run 230 kV Transmission Line

0 1 2
Miles

2.0 ALTERNATIVE IEC EAST PORTION COMPARISON

2.1 Project Study Area

The boundary of the Project Study Area is determined by the geographic extent of the existing PPL Electric transmission line network, which is located entirely within the study area reviewed for the IEC East Project. As such, information on the environmental and social aspects of the study area presented below is a condensed version of the data provided in the original IEC East Siting Study, filed December 2017. These environmental setting items are presented to provide a means to comparatively evaluate the two alternative routes being reviewed.

2.2 Comparative Metrics

The following sections provide a quantitative and qualitative analysis of the two alternative routes in terms of their possible impacts to the environmental and social landscape as well as a review of potential engineering considerations. Information used in this analysis was collected from GIS data sources, public and regulatory input, supporting documents, field review, PPL Electric survey, and the collective knowledge and experience of the Siting Team. The list of quantitative factors reviewed is provided in **Table 1**.

Factors evaluated for this supplemental review are a subset of the items reviewed for the originally-proposed IEC East Project. Specific information on the totality of the factors reviewed in the original IEC East Project Application are referenced throughout this supplemental review process.

The results of the comparative analysis completed for each of the factors listed in **Table 1** are documented within the respective section of the siting study.

Table 1: Quantitative Siting Factors
Environmental Factors
Number of National Hydrography Data set (NHD) stream and waterbody crossings within the ROW: a count of the number of surface water features crossed, such as lakes, ponds, streams, rivers, springs and wells.
Acres of National Wetland Inventory (NWI) wetland crossings within the ROW: The type and acreage of wetlands crossed by the routes.
Acres of 100-year floodplain within the ROW: Acres of 100-year floodplain within the ROW.
Miles of public lands crossed by the route: Miles of federal, state and local lands crossed by the ROW.
Threatened, endangered, rare or sensitive species occurrence within the Project vicinity: Known occurrences; locations of potential habitat based on land use.

Table 1: Quantitative Siting Factors
Forest clearing within the ROW: Acres of forest within the ROW.
Human/Built Factors
Number of parcels crossed by the ROW: Count of the number of parcels crossed by the ROW.
Number of residences within 250 feet of the route centerline: Count of the number of residences within the ROW and within 250 feet of potential routes.
Acres of conservation easements crossed: Private conservation easements crossed by the routes.
Acres of county agricultural easement land crossed: Protected land crossed by the Project that is devoted to agricultural production.
Institutional uses (schools, places of worship and cemeteries) within 1000 feet (schools and places of worship) or 250 feet (cemeteries and hospitals) of the route centerline: Locations of cemeteries, churches, hospitals, parks, and schools.
Engineering Factors
Route length: Length of route in miles.
Number of angled structures: Anticipated number of angled structures over 30 degrees based on preliminary design.
Number of road crossings: Count of federal, state and local roadway crossings.
Number of pipeline crossings: Number of known pipelines crossed by the transmission ROW.
Number of railroads crossings: Number of railroads crossed by the transmission ROW.
Number of transmission line crossings: Number of high voltage (69 kV or greater) transmission lines crossed by the ROW.
Distance of steep slopes crossed: Miles of slope greater than 20 percent crossed by the routes.

2.3 Environmental Factors

The focus of this section is on the possible effect of these two alternative routes on natural resource features including wetlands, streams, T&E species, and conservation and recreation lands. Potential impacts discussed in this section are based on publicly available maps and data, as well as consultation with federal and state agencies. A quantitative comparison of the natural resource considerations for the two alternative routes is presented at the end of this section in **Table 2**. The resources discussed in this section are illustrated in **Figure 4**.

2.3.1 Water Resources

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

Both of the alternative routes would span portions of Muddy Creek because the watershed of this stream bisects the Project Study Area from west to east. The original IEC East Proposed Route would span this feature at a location that would require vegetation clearing on the upper slopes of the steep valley that borders the stream. Due to their alignments, the Otter Creek-Conastone and Manor-Graceton lines each cross this water feature at different locations. Vegetation at these sites was cleared when the transmission lines were initially constructed, and only minor clearing to re-establish access roads may be required for the second circuit.

East of the village of Muddy Creek Forks, which is located at the confluence of the South Branch and North Branch Muddy Creek, Muddy Creek is classified by PADEP as a TSF and the North Branch is classified as a CWF. Both of these stream classifications involve relatively limited permitting requirements due to their average water and habitat quality. The South Branch, and a main tributary, Leibs Creek, are classified as HQ due to their above average water quality and are thereby eligible for special protection. Both of these HQ streams are also considered Wild Trout Waters by the PFBC, which provides additional protective measures. The Otter Creek-Conastone and the original IEC East Proposed Route are located in these HQ watersheds. The Manor-Graceton line crosses Muddy Creek further to the east where it is classified as TSF. Other streams crossed by the Manor-Graceton line include Neill Run and Fishing Creek which have a PADEP classification of CWF and are also considered Wild Trout Waters.

The new Furnace Run 230 kV Corridor extends in a relatively west to east alignment across a high point in the watershed thereby spanning smaller headwater streams. Specific streams in this area include Furnace Run and Orson Run which are classified by PADEP as CWF and have additional Wild Trout Water protection from PFBC. Vegetation clearing around these streams would be required to accommodate the expanded 225-foot ROW.

As a relatively direct alignment to the Conastone Substation, the original IEC East Proposed Route would cross the least number of streams (11) as this option extends along high points in the various watersheds. All of these crossings would involve new clearing of riparian areas around these features. Many of these crossings would involve special protection streams that may trigger additional permitting requirements.

The Alternative IEC East Portion would cumulatively comprise more stream crossings (27) but most of these stream crossings would only involve the addition of new conductor on existing transmission structures. The new Furnace Run 230 kV Corridor section of the Alternative IEC East Portion would encounter four (4) special protection streams that will involve some degree of clearing and potential permitting.

Impacts to wetlands by the two alternative routes are limited due to the few wetland resources in the Project Study Area. For the original IEC East Proposed Route, the transmission line alignment can be engineered to span over wetland areas thus having limited effect on PEM or PSS wetlands. A small area of PFO wetlands (0.7 acre) however, would be affected by the original IEC East Proposed Route due to the need to remove the forest canopy for the new 130-foot-wide ROW. Engineering would strive to design the alignment so that no permanent structures or other sources of fill are placed in the wetland, but the use of timber matting for temporary access road crossings during construction may be required in certain situations.

Similar temporary wetland impacts are anticipated for the Alternative IEC East Portion due to the need to access all of the structures to install new arms required to support the second circuit lines. Impacts may be relatively minimized by the existence of access road that were used to rebuild these lines within the past several years. Although the available data indicates the presence of PFO wetlands (1.2 acres) along the existing PPL Electric alignments, these areas are focused around stream crossings that have already been cleared and will not require any new impacts for the addition of the second circuits. Analysis of available data indicates that a small area of PFO wetlands (0.7 acre) may be impacted at the stream crossing areas along the new Furnace Run 230 kV Corridor section of the Alternative IEC East Portion.

Floodplains in the Project Study Area are also relatively limited due to the generally steep narrow valleys of the Muddy Creek watersheds, which confines the widths of the floodplains. Placement of a transmission line structure within a floodplain area would need to be approved by the state regulatory agencies as changes to the hydrology of floodwaters may affect properties downstream. The area adjacent to a stream corridor is also considered by the state regulatory agencies as a riparian buffer to the stream that provides water quality protection and habitat area, thus clearing the trees in a floodplain area may also be considered an impact due the loss of these functions. As with wetlands, the alignment of the original IEC East Proposed Route can typically be engineered to span floodplain areas, with the potential impact being constrained to the clearing trees. The two existing PPL Electric corridors span more floodplain areas relative to the original IEC East Proposed Route, but these areas will not be affected by the addition of the second circuit. No floodplain impacts are anticipated for the new Furnace Run 230 kV Corridor, which would span small stream that do not have defined floodplains.

2.3.2 Wildlife Habitat and Sensitive Species

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

As illustrated in **Figure 4**, avoiding potential sensitive species habitat around Muddy Creek is not feasible by either the original proposed route or the Alternative IEC East Portion. Crossing through any of the identified natural areas does not dictate that an impact will occur, however the potential of encountering sensitive species or their habitat may be higher in these areas. Along the original IEC East Proposed Route there is more undisturbed wildlife habitat and sensitive species areas and therefore has a higher potential for generating an impact relative to the Alternative IEC East Portion, which is already disturbed by the existing infrastructure. Specific alignments though identified natural areas indicates that the original IEC East Proposed Route would extend through less area (76.4 acres) relative to the Alternative IEC East Portion (136 acres), but the Alternative IEC East Portion route is located within an existing ROW corridor that is already cleared of most vegetation and has been recently evaluated for sensitive species when the alignments were rebuilt. Based on available data, the proposed Furnace Run 230 kV Corridor section has a low probability of affecting wildlife and sensitive species habitat.

All required federal and state agency consultations would be completed for either option to determine final species habitat locations and requirements for specific surveys. Coordination will ensure whether areas can be avoided, or where appropriate, timing restrictions may be applied to construction activities to avoid impact during breeding or roosting seasons.

2.3.3 Forest Resources

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

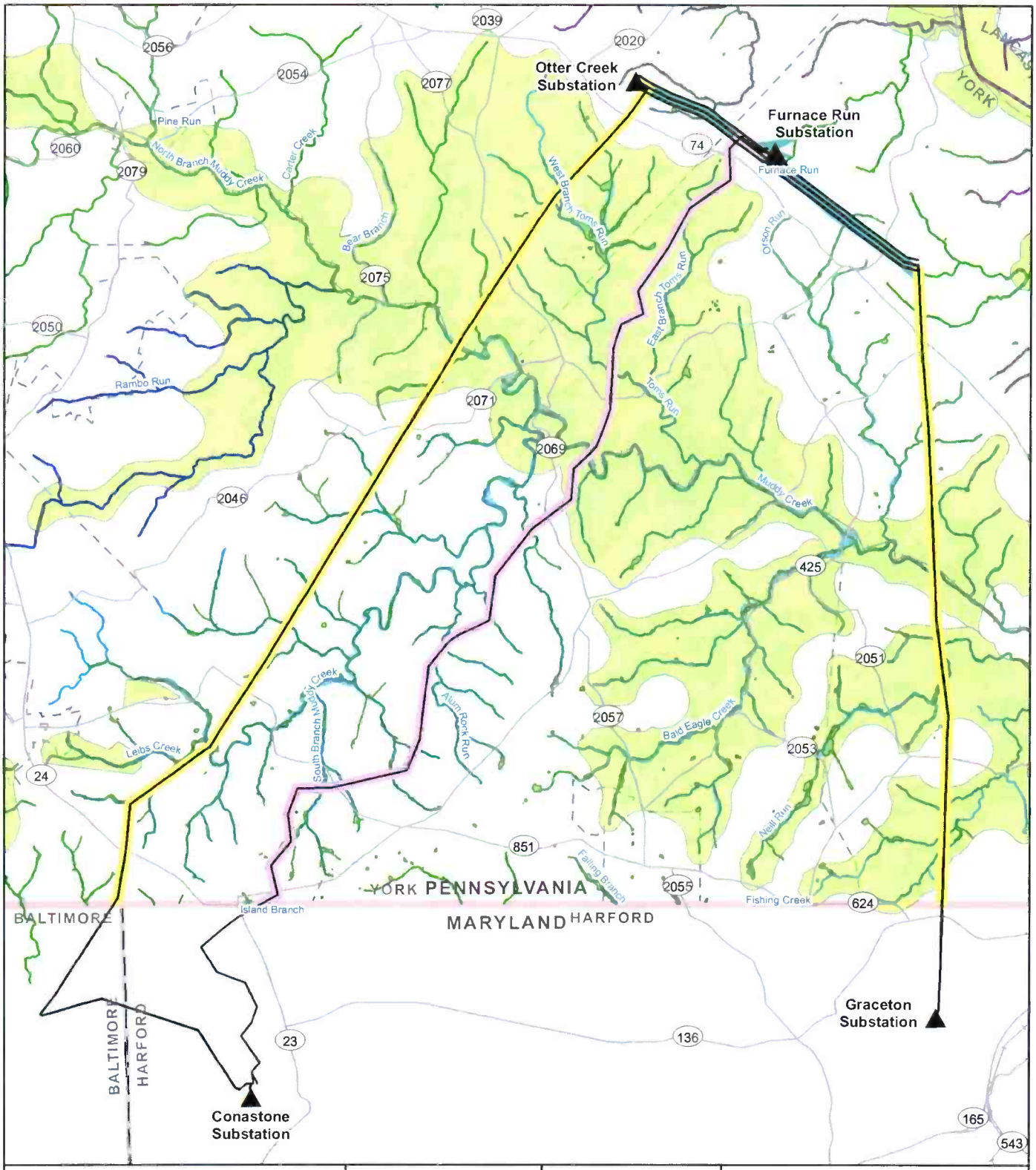
Forest clearing concerns from an environmental perspective focus on fragmentation, which reduces the viability of a forest ecosystem through the possible introduction of invasive plant species and changes in the wildlife community dynamics. Trees are also specifically tied to the habitat requirements of specific sensitive bat species, which use these features for roosting at night during the summer. Clearing trees may have a direct impact on potential bat habitat, thus the less tree clearing required the less possibility of creating an impact to the bat populations.

Overall, the most tree clearing will be required on the original IEC East Proposed Route (51.7 acres), which will extend along a new ROW corridor through several areas of forest cover. Tree

clearing will not be required for the proposed addition of a second circuit on the two existing PPL Electric transmission lines. Forest clearing for the proposed Furnace Run 230 kV Corridor (19.3 acres) will be required but is considerably less than the original IEC East Proposed Route requirement.

Table 2: Environmental Factors Evaluation Criteria			
Factors	**Unit**	**Original IEC East Proposed Route**	**Alternative IEC East Portion (Furnace Run Corridor)[1]**
Length	miles	**12.7**	**23.7 (3.9)**
Total streams crossed	count	**11**	**27 (4)**
High/Exceptional/Special Protection streams crossed	count	**8**	**7 (0)**
Forested wetlands in the ROW (NWI)	acres	**0.7**	**1.9 (0.7)**
PEM/PSS wetlands in the ROW (NWI)	acres	**0.1**	**3 (0)**
FEMA-designated floodplain crossed by ROW	acres	**4.1**	**7.3 (0)**
Special natural areas crossed by the ROW	acres	**76.4**	**136**
Tree clearing required in the ROW (digitized based on aerial photography)	acres	**51.7**	**19.3**

[1] The total count for the entire Alternative IEC East Portion is the first number in the column. The number in the parenthetical represents the 4-mile Furnace Run 230 kV Corridor.



Substation
Original IEC East Proposed Route
Alternative IEC East Portion
Existing PPL Electric Lines
New Furnace Run 230 kV Corridor
Ch. 93 Designated Use
Exceptional Value
High Quality-CWF
Trout Stocking
Warm Water Fishes
Cold Water Fishes
100-Year Floodplain
NWI Wetland
Natural Heritage Areas
Road
Forest Cover

Data Sources: PPL (2019), ESRI (2011), PADEP (2017), USFWS (2009), FEMA (2016), NLCD Forest Cover (2011)

Coordinate System:
UTM Zone 18N
NAD 83

January 24, 2020

Pennsylvania

Maryland

Figure 4
Natural Resources

ppl
PPL Electric Utilities

Furnace Run 230 kV Transmission Line

0 0.5 1 1.5 2
Miles

2.4 Human/Built Factors

The focus of this section is on the potential effect of the two alternative routes on the social landscape within the Project Study Area including proximity of the potential routes to residential development, institutional uses (e.g., schools, places of worship, cemeteries, and hospitals), and potential effect on specific land uses within the area. A comparison of the human/built considerations is presented at the end of this section in **Table 3**. Land use within the Project Study Area is shown in **Figure 5** and social resources are illustrated in **Figure 6**.

2.4.1 Agricultural Resources

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

Agricultural lands are a dominant component of the landscape in the Project Study Area and a considerable portion of these lands are protected from development through agricultural easements placed on them through county, state, and federal agencies. Removal of the development rights of these lands was encouraged to maintain the viability of the farms by eliminating outside pressures to sell land for residential or commercial development. The state easements used by York County for the agricultural preservation allow for utilities. Although federal easements also allow for utilities, they do require additional coordination with the Natural Resources Conservation Services (NRCS) division of the U.S. Department of Agriculture (USDA). In most cases, the agricultural easement language does not restrict the ability of an electric transmission line to cross these lands because placement of the structures on a preserved property is not considered development as it does not remove the ability of the landowner to use the land under the transmission lines for agricultural purposes. Means of minimizing impacts to farming operations include paralleling the edge of fields or through placement of structures at farm road locations, where possible.

Development of the original IEC East Proposed Route was conducted with the intent to minimize the impact of the alignment on the land uses encountered across the landscape. As a result of seeking to minimize impacts on land use, the route traverses in an indirect fashion along parcel boundaries and field edges with the net result of making the line longer and crossing more individual properties compared to a potential straight-line alignment. The original IEC East Proposed Route would cross several parcels that are protected by state agricultural conservation easements but does not cross any that are protected by federal easements. Due to the relative ease of securing linear ROW in the past decades, the two existing PPL Electric alignments extend in a very direct fashion across similar agricultural lands and ultimately affecting less agricultural lands and individual properties. Farming operations along these corridors have continued

relatively undisturbed by these alignments for many years. The new Furnace Run 230 kV Corridor ROW is another relatively direct alignment that will cross several agricultural parcels, some that are protected by state agricultural conservation easements and two that are protected by federal easements. Coordination with NRCS regarding modification of the existing PPL Electric ROW easement on these parcels is being completed for this allowable utility use. Placement of the new structures is anticipated to have some effect on the current land use, but coordination with the property owner and engineering flexibility will help minimize these effects.

Review of the data indicates the original IEC East Proposed Route will cross less pasture (17.6 acres) and crop land (121.9 acres) relative to the Alternative IEC East Portion (59.2 acres and 270.9 acres respectively). Similarly, the original IEC East Proposed Route will cross fewer lands preserved by agricultural easements (66.2 acres) relative to the Alternative IEC East Portion. Although the Alternative IEC East Portion involves crossing more agricultural and preserved lands, the potential effect of the proposed activities on current land usage will likely be less than those anticipated by the original IEC East Proposed Route since most of the infrastructure is already in place.

Several orchards and tree farms are located throughout the Project Study Area. Typically, orchards and tree farms can still grow within the transmission line ROW and the structures can be engineered to meet appropriate clearances. Trees at these businesses are typically restricted to around 15 feet. For the original IEC East Proposed Route, the siting process identified an alignment across one tree farm that would reduce the potential loss of trees and minimize the effect on operations by the structure placement. The Alternative IEC East Portion would not have any impact on orchards or tree farms.

2.4.2 Recreation and Conservation Lands

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

None of the potential routes will have an impact on any local parks or trail systems.

2.4.3 Developed Land Use

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

Developed commercial land is focused along SR 74, which bisects the northern part of the Project Study Area near the Furnace Run Substation. The area includes several scattered villages such as New Park and Gatchellville and aside from the dense residential community of Susquehanna Trails, most of the residential development is sporadic across the rest of the landscape. Large areas are dominated by agricultural fields with few farm houses.

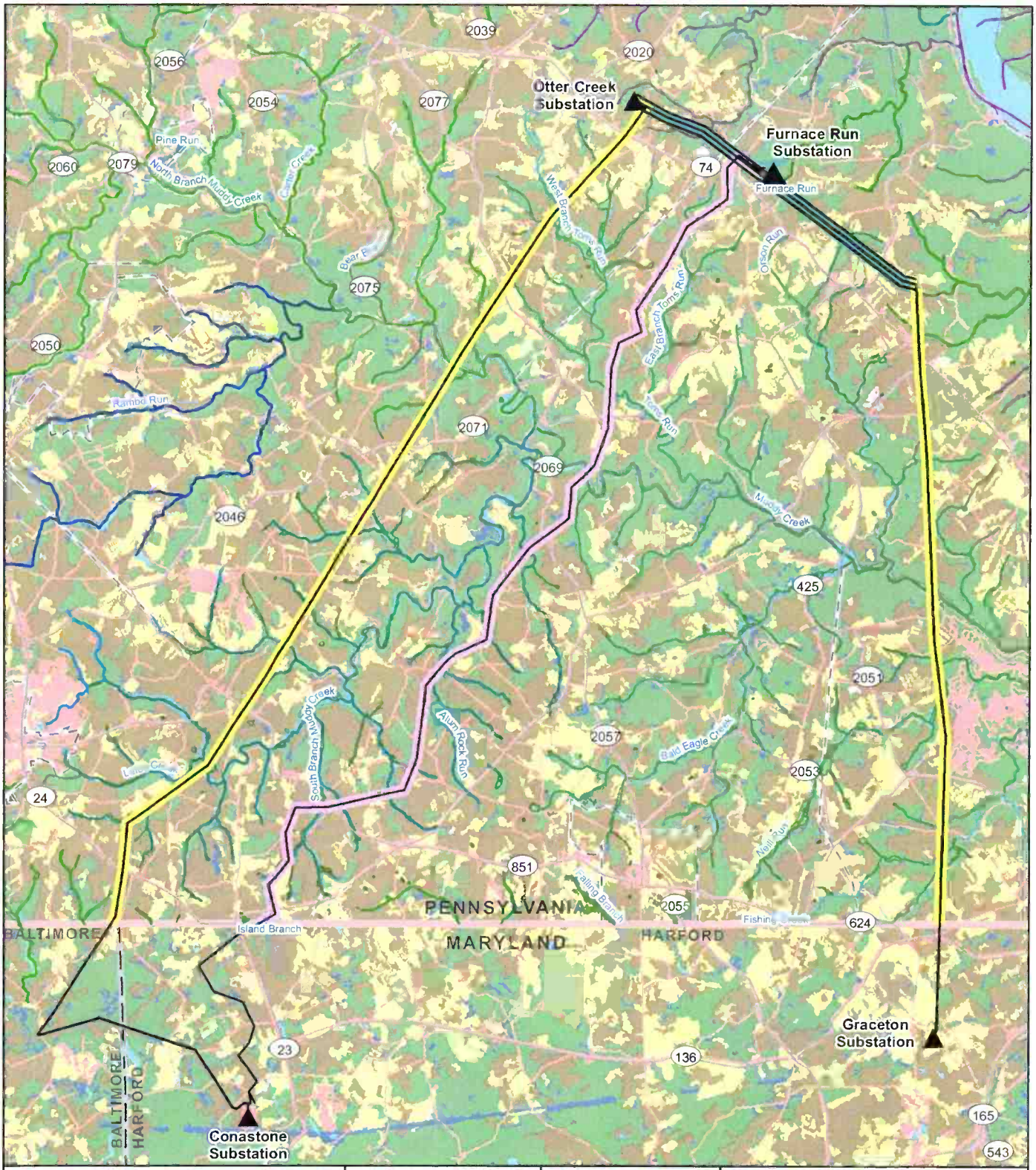
The number of parcels crossed is less for the original IEC East Proposed Route (53) relative to the Alternative IEC East Portion (115). New ROW easement agreements would be needed for all of the parcels crossed by the original IEC East Proposed Route whereas the Alternative IEC East Portion has existing ROW agreements with all of the parcels crossed. Modifications to these easements will however be required for 20 of the parcels crossed by the new Furnace Run 230 kV Corridor ROW due to the need for a wider ROW; two of the parcels crossed are owned in fee by PPL Electric.

The number of unique landowners is similarly lower for the original IEC East Proposed Route (38) relative to the Alternative IEC East Portion (88) but as noted above, all of the landowners along the Alternative IEC East Portion have existing ROW agreements on their parcels, which will make coordination for the addition of the second circuit and discussion about ROW widening for the new Furnace Run 230 kV Corridor less complex. In January 2020, all of the landowners along the along the new Furnace Run 230 kV Corridor agreed to the modified ROW easements on their properties.

The number of residences within 250 feet of these alternative routes is also considerably less for the original IEC East Proposed Route (2) relative to the Alternative IEC East Portion (67). Avoidance of existing residential homes was a priority during development of the original IEC East Proposed Route, which used the extensive open agricultural lands in the project area to bypass residential areas where possible. Although the Alternative IEC East Portion has the most residences within close proximity, many of these homes were built after the PPL Electric alignments were developed and most will not be affected by the addition of the second circuit. Some of the 14 residences along the new Furnace Run 230 kV Corridor are part of the group of residences that were built after the construction of the original 69 kV corridor. Unlike the residences along the Otter Creek-Conastone and Manor-Graceton 230 kV lines, the residences along this section will be affected by the construction of new parallel 230 kV structures.

In regard to other social institutions in the Project Study Area, both the original IEC East Proposed Route and the Alternative IEC East Portion are located within 1,000 feet of a church or place of worship. None of the potential routes would be located near a hospital, airport, or local park.

Table 3: Human/Built Evaluation Criteria			
Factors	**Unit**	**Original IEC East Proposed Route**	**Alternative IEC East Portion (Furnace Run Corridor)**
General			
Length	miles	**12.7**	**23.7 (3.9)**
Number of Parcels Crossed	count	**53**	**115 (22)**
Landowners within ROW	count	**38**	**88 (19)**
Residential			
Residences/single-family dwellings within 250 feet of centerline	count	**2**	**67 (14)**
Agricultural			
Pasture/rangeland crossed in ROW (based on NLCD data)	acres	**17.6**	**59.2 (11.9)**
Cropland crossed in ROW (based on NLCD data)	acres	**121.9**	**270.9 (62.5)**
Tree farms/orchards crossed in ROW	acres	**5.0**	**0**
Agricultural easements crossed in ROW	acres	**66.2**	**157.2 (46.4)**
Community/Recreational Facilities			
Schools within 1,000 feet of centerline	count	**0**	**0**
Designated places of worship within 1,000 feet of centerline	count	**1**	**1**
Cemeteries within 250 feet of centerline	count	**0**	**0**
Hospitals, and assisted living facilities within 250 feet of centerline	count	**0**	**0**
Parks and recreation areas crossed by the ROW	count	**0**	**0**
Protected Land			
Federal/state land crossed by ROW	acres	**0**	**0**
Local public lands crossed by ROW	acres	**0**	**0**



Substation

Original IEC East Proposed Route

Alternative IEC East Portion

Existing PPL Electric Lines

New Furnace Run 230 kV Corridor

Land Cover

Water/Wetlands

Developed

Barren Land

Forest

Shrub/Scrub

Grasslands/ Herbaceous

Pasture/Hay

Cultivated Crops

Road

Data Sources: PPL (2019), ESRI (2011), NLCD (2011)

Coordinate System:
UTM Zone 18N
NAD 83

January 24, 2020

Pennsylvania

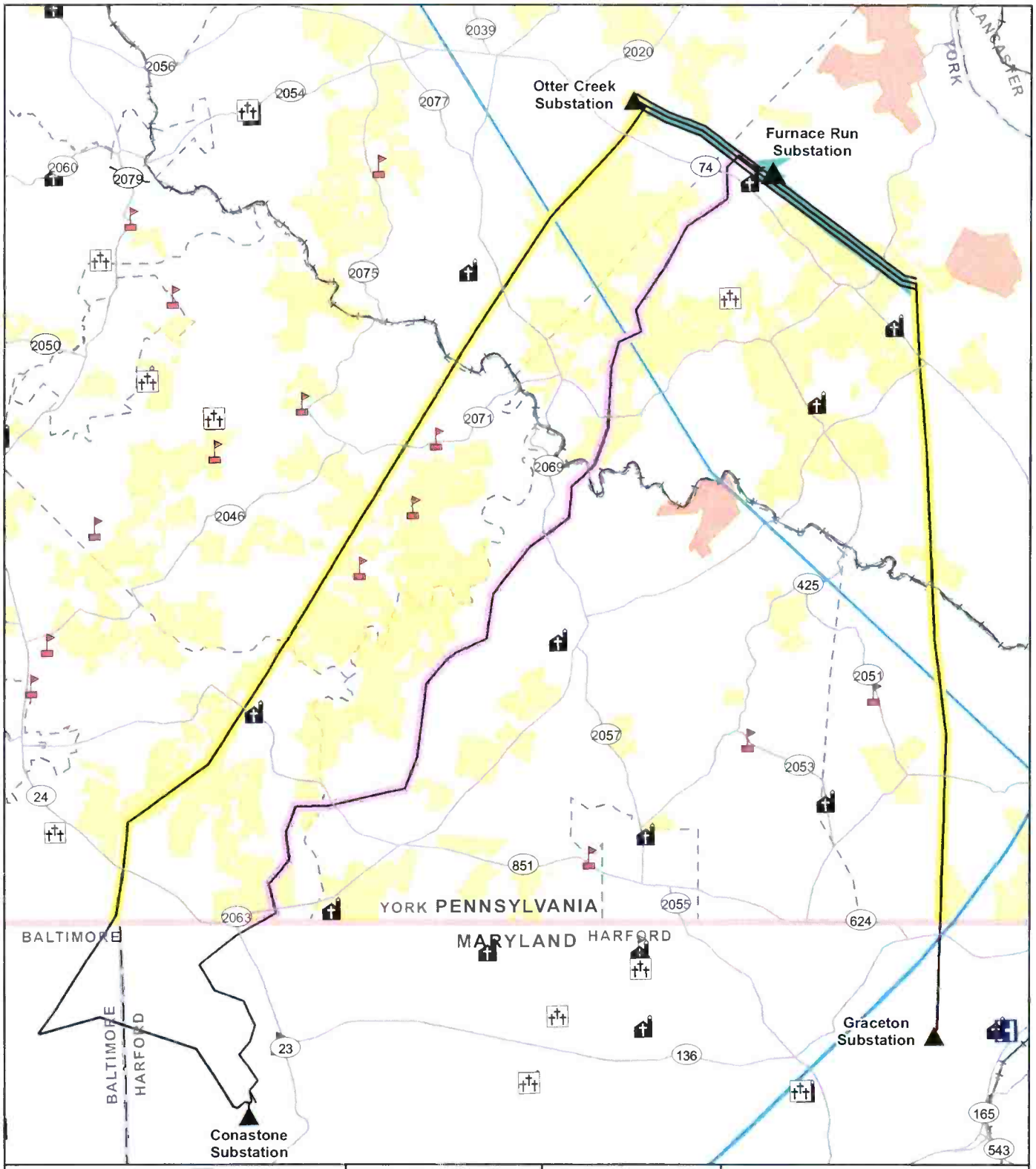
Maryland

Figure 5
Land Use

ppl
PPL Electric Utilities

Furnace Run 230 kV Transmission Line

0 0.5 1 1.5 2
Miles



Substation
Original IEC East Proposed Route
Alternative IEC East Portion
Existing PPL Electric Lines
New Furnace Run 230 kV Corridor
Cemetery
Place of Worship
Hospital
School
Pipelines
Agricultural Easements
State Game Lands
Road
Railroads

Data Sources: PPL (2019), ESRI (2011), York County (2019), NLCD Forest Cover (2011)

Coordinate System: UTM Zone 18N NAD 83

January 24, 2020

Pennsylvania

Maryland

Figure 6
Social Resources

ppl
PPL Electric Utilities

Furnace Run 230 kV Transmission Line

0 0.5 1 1.5 2
Miles

2.5 Engineering Considerations

The focus of this section is on the potential engineering considerations that may be encountered by the two alternatives within the Project Study Area including roadway and railroad crossings, steep topography, heavy angles, and proximity to existing infrastructure facilities. A comparison of the engineering considerations for the alternatives is presented in **Table 4**.

2.5.1 Right-of-Way Considerations

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

Review of **Table 4** indicates that each of the alternative routes will need to span one railroad which is located in the valley of Muddy Creek. The railroad will be spanned within the same span as the Muddy Creek crossing and is not anticipated to be a challenge from the engineering perspective.

The original IEC East Proposed Route will also cross one pipeline, which is already crossed at two locations by the existing PPL Electric lines. Crossing this pipeline is not anticipated to be an engineering challenge for either of the alternative routes.

In terms of angle structures that may be required for each of the potential routes, the original IEC East Proposed Route would involve the most (10) relative to the Alternative IEC East Portion (3). Many of the sharp turns on the original IEC East Proposed Route are required to follow specific property lines or to avoid other constraint areas such as additional stream crossings or dense forested areas. The sharp angles associated with the Alternative IEC East Portion will be required at the intersection of the new Furnace Run 230 kV Corridor with the two existing PPL Electric alignments.

2.5.2 Topography and Geology

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged

Alternative IEC East Portion Comparison

As noted above, each of the alternative routes would span Muddy Creek, which is the primary topographical challenge in the project area. The Alternative IEC East Portion already spans this feature at two locations whereas the original IEC East Proposed Route would need to be constructed at the proposed crossing location, which will be the chief construction challenge of that alignment.

Evaluation of the steep sloped areas crossed along the various routes notes that Alternative IEC East Portion would encounter the most sloped areas (4.8 miles), mostly due to the multiple stream crossings involved with this alignment. The original IEC East Proposed Route would encounter the least steep sloped areas (1.5 miles) as a result of crossing fewer streams.

2.5.3 Access Roads

Refer to the IEC East Project Siting Study submitted with Transource's December 27, 2017 Application. The original Siting Study remains unchanged.

Alternative IEC East Portion Comparison

The original IEC East Proposed Route would require the development of a new access road network to reach the proposed structure locations along the proposed alignment. Many of these access roads can be developed from nearby local roads to extend along the new ROW corridor, but due to the variable terrain, some access roads will need to cross adjacent lands to connect to a roadway. Obtaining rights to use these off-ROW access areas will provide additional challenges to the development process. For the Alternative IEC East Portion, many of the access roads needed to reach the existing structures to add the second circuit had been used in the recent past when the PPL Electric lines were rebuilt. Several new access roads will need to be identified to reach the new structure locations needed for the new Furnace Run 230 kV Corridor.

Table 4: Engineering Evaluation Criteria			
Factors	**Unit**	**IEC East Proposed Route**	**Alternative IEC East Portion (Furnace Run Corridor)**
Length	miles	**12.7**	**23.7 (3.9)**
Transportation Resources			
State highways crossed	count	**5**	**8 (1)**
Local roads and streets crossed	count	**20**	**37 (6)**
Railroads crossed	count	**1**	**2 (0)**
Utility Resources			
Oil and gas pipelines crossed	count	**1**	**2 (0)**
Existing Transmission Lines Crossed	count	**1**	**1 (0)**
Engineering and Construction Considerations			
Steep slopes crossed by ROW (>20%), percent of total length	miles	**1.5**	**4.8 (0.8)**
Heavy angles, greater than 30%	count	**10**	**3 (2)**

3.0 PUBLIC OUTREACH

PPL Electric and Transource conducted a public open house to share the Alternative IEC East Portion with the general public and the property owners that are crossed by or live in close proximity to the existing Otter Creek-Conastone, Manor-Graceton, and abandoned 69 kV ROW alignments. The open house was held between 6-8 p.m. on January 14, 2020 at the Chanceford Township Building in Brogue, Pennsylvania.

Information provided during the open house included the description of the 4-miles of widened ROW necessary to update the 69 kV ROW to accommodate the two new parallel 230 kV steel monopole structures. Detail was also provided regarding the changes required to the two existing transmission line systems for the addition of the new second circuit and overall the type of construction activities that would be used to complete both components. PPL Electric representatives also provided landowners along the 69 kV ROW information on the easement acquisition process and details on the types of surveys that would be conducted along the new ROW that are needed from a technical and permitting perspective.

The public and property owners were notified about the time and location of the open house meetings through the following means:

1. Letters to property owners within 500 feet of PPL Electric transmission line corridors and
2. Newspaper notification placed in the York Daily Record and York Dispatch.

The open house was set up in an open format where the public could attend at any time during the hours listed above. Each attendee was greeted by a PPL Electric representative and provided an overview of the various boards that described the purpose and need of the IEC Project, engineering considerations, the right-of-way process, and the permitting process. Representatives from PPL Electric and Transource were available with large format maps to review individual properties and take comments.

A total of 21 people attended the open house.

4.0 IDENTIFICATION OF THE PROPOSED ROUTE

The goal in selecting a suitable route for the Project is to minimize impacts on land use and natural and cultural resources while avoiding circuitous routes, extreme costs, and non-standard design requirements. Also, the desire of the parties to use existing infrastructure where practicable has driven the consideration of an alternative route for the Project. However, in practice, with any route it is not usually possible to minimize all potential impacts. There are often inherent tradeoffs in potential impacts to every siting decision. For example, in heavily forested study areas, the route that avoids the most developed areas will likely have the greatest amount of forest clearing, while the route that has the least impact on vegetation and wildlife habitats often impacts more residences or farm lands. Thus, an underlying goal of a siting study is to reach a reasonable balance between minimizing potential impacts on one resource versus increasing the potential impacts on another.

Both the original IEC East Proposed Route and the Alternative IEC East Portion for the IEC Project provide viable options for meeting the Project need. The following section summarizes the rationale for selection of the Proposed Route, and thus, the route that the Siting Team considered to best minimize the overall impacts of the Project. The rationale presented is derived from the knowledge and experience of the Siting Team, comments from the public and regulatory agencies, and the comparative analysis of potential impacts presented in Section 3. Based on the data reviewed in this supplemental siting study, the Alternative IEC East Portion was determined to be the Proposed Route.

4.1 Proposed Route Summary

The Alternative IEC East Portion has an approximate length of 24 miles in Pennsylvania and is 11 miles longer than the original IEC East Proposed Route within Pennsylvania. Being a longer alignment in totality, due to the use of two existing transmission line systems that ultimately provides electrical connection between the Furnace Run and Conastone Substations, it will cross more parcels (115) and impact more landowners (88) compared to the original IEC East Proposed Route. The key difference is that the Alternative IEC East Portion route involves parcels and landowners that currently have ROW agreements in place for the easements that cross these lands. The four-mile Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion is the only portion that will result in the widening of an existing ROW that contains 22 parcel crossings and 19 landowners, which is less than the original IEC East Proposed Route. The Proposed Route has more residences within 250 feet (67) for the entire route, with the Furnace Run 230 kV Transmission Line corridor portion having 14, compared to the original IEC East Proposed Route with a total of two (2) residences within 250 feet. An aerial map of the Furnace Run 230 kV Transmission Line Corridor illustrating the parcels crossed is provided in **Appendix A** and **Appendix B** shows the sensitive resources located within 2-miles of the route.

The Alternative IEC East Portion will cross more agricultural lands, and farming operations, but will do so with existing infrastructure already part of the existing landscape and will only add 46.4 acres of new potential impact for the new Furnace Run 230 kV Corridor compared to 66.2 acres for the original IEC East Proposed Route.

Environmentally, although the Alternative IEC East Portion would span the most streams (27), only a few (4) are present along the new Furnace Run 230 kV Corridor that will result in minimal impact on riparian areas. As noted previously, streams and floodplains will be crossed at right angles and spanned with structures typically placed outside these regulated areas. Since several of the streams crossed will be HQ-designated waterways, the construction of this alignment will involve additional stormwater permitting requirements focused on the preservation of the water quality level. In terms of wetlands, this alignment would cumulatively cross the least wetland area relative to the other alternatives. Similar to streams and floodplains, wetland areas will be spanned to further minimize potential impact.

The Alternative IEC East Portion has the least amount of tree clearing and reduces the forest fragmentation effects and potential impacts to T&E species that use forest habitats such as T&E bat species. In terms of other potential T&E habitat areas this route would span over one large natural area in Pennsylvania linked to the existing ROW and infrastructure. This same habitat area is spanned by the original IEC East Proposed Route, with little option for avoidance.

From an engineering perspective, the Alternative IEC East Portion has fewer heavy angles (3), already spans Muddy Creek in defined ROW areas, and will avoid the construction challenges associated with steep slopes in these areas. The alignment will also not be within 1-mile of an airport or be located near any quarries.

Conclusion

Based on a qualitative and quantitative review of information obtained from GIS data, existing easements, field reconnaissance, agency consultation and public outreach for the Project, the Siting Team recommends the Alternative IEC East Portion as the Proposed Route for the IEC East Project.

In addition to the advantages listed above, the Alternative IEC East Portion was selected as this alignment minimizes impacts to land uses identified during the public input and Application process and addresses the PAPUC preference for utilizing existing ROW and infrastructure. While the Alternative IEC East Portion provides the longest overall distance, it has the shortest section of ROW widening, which in turn lessens the amount of forest clearing, streams crossed, and number of residences within 250 feet. Collectively, the Siting Team believes that the Proposed

Route meets the need of the Project while balancing the interests of the parties pursuant to the settlements.

4.2 Proposed Route Impacts and Mitigation

The following is a discussion of the anticipated Project impacts and potential permit and mitigation requirements for the Alternative IEC East Portion selected for eastern portion of the IEC Project and specifically the Furnace Run-Conastone 230 kV Project.

PPL Electric has worked diligently with relevant property owners to secure the necessary ROW easements along the new Furnace Run 230 kV Corridor to accommodate the expansion of the existing ROW. By utilizing an existing transmission line ROW, it will minimize impacts on existing land uses, as well as sensitive natural resources such as wetlands and streams. Where potential impacts are unavoidable due to the additional ROW widening, mitigating factors will be employed.

As part of the permitting process, any required waterway, wetland, or floodplain encroachment permits will be obtained from PADEP and the USACE prior to construction and PPL Electric will comply with all special conditions placed on the permits. In addition, to address water quality standards within watersheds along the Project corridor, PPL Electric will comply with the regulations of the National Pollutant Discharge Elimination System (NPDES) permit program, obtain the required soil erosion and sedimentation control permits, and follow the specified conditions required for the permit.

4.2.1 Land Use

Siting analyses for the Alternative IEC East Portion was conducted with acknowledgement of existing and proposed land uses. Some impact on existing and future land use may occur, including clearing of forest areas and reducing potential areas for residential or commercial development. Establishment of a widened ROW easement also precludes certain uses such as constructing structures or installing swimming pools within the easement area. PPL Electric is working with property owners to minimize the impact on existing and future land uses.

The Alternative IEC East Portion will also be designed to minimize conflicts with the existing transportation network located along the route. The necessary state Highway Occupancy Permits, or equivalent county or local type permits will be acquired by PPL Electric for those respective roadway crossings and all other state road access points prior to construction. The permit processes typically include review of the plans to assure that the transmission structure locations and development are in compliance with current safety regulations regarding height and sight clearances. This permit process may also be used to coordinate the actual crossing of

the roadway with the conductor wires, which often requires the temporary closure of the roadway.

4.2.2 Natural Features

Vegetation clearing and maintenance is required to abide by the federal guidelines mandated by NERC to ensure the safe and reliable operation of the line on the Alternative IEC East Portion. PPL Electric's vegetation management practices will allow for the re-generation of compatible species of low growing shrubs and grasses where practicable. Herbicides used on the ROW will be EPA-approved and will be applied selectively in accordance with all label instructions. Different herbicides will be used based on the environmental conditions with specific attention to not negatively affect streams and wetlands areas. Application of these herbicides near sensitive resources would be conducted by hand-held spraying; no aerial spraying will be used along the alignment. Determination of the mitigation requirements for forest impacts, as well as for impacts to the other natural resources, will be part of the permit review process.

Wetlands along the new Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion will be delineated using PADEP and USACE approved methodologies based on the "*Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*" (USACE 2010). Once the wetlands have been delineated, an engineering review will be conducted to minimize the potential impact to these resources through strategic structure placement that will be oriented to span the wetlands where possible. Impacts to wetlands will be further minimized by identifying access road networks that do not need to cross these features. All required permits for these unavoidable wetland impacts will be obtained from the PADEP and the USACE prior to construction. Mitigation in the form of wetland creation, enhancement, or conservation may be required for these wetland impacts.

Streams along the new Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion will also be delineated using PADEP and USACE approved methodologies. Long-term impacts to these watercourses are expected to be minimal, as they will be spanned by the proposed transmission line, with most crossings oriented to span the feature at a 90° angle to minimize impacts to the adjacent riparian area. Some mitigation efforts may be required as a result of the reduction in riparian buffer along these features. Due to the water quality level in these watersheds, an Individual NPDES permit will be required to mitigate any potential short-term impacts of erosion and sedimentation during construction. As part of the Individual NPDES process, additional and more sophisticated Best Management Practices (BMPs) may be required during construction to maintain the high-water quality standards in the watersheds and obtain the NPDES permit.

FEMA and state-identified floodplains are found adjacent to watercourses and identify the areas that routinely flood during heavy rain events. Encroachment within a floodplain area is discouraged by the regulatory agencies due to the potential of the structure to increase the flooding hazard in the local area. Where practicable, transmission structures will be constructed outside the floodplain areas. Due to the wide valleys associated with many of the waterways along the Proposed Route, many of the floodplains and floodways will be relatively narrow and can be spanned by the transmission line. For those locations where the floodplains are not avoidable, additional analysis of the proposed structures may be required by PADEP to confirm the activity will not create flooding conditions in the local area. No structures will be located in the floodway of any stream.

4.2.3 Threatened and Endangered Species

During the siting process threatened and endangered species and habitat data were collected from those federal and state agencies that handle this information to understand the location of sensitive resources. Effort has already been made at this initial step to site the proposed route knowing where such resources are located. Coordination with state and federal agencies regarding potential threatened and endangered species will be initiated prior to commencing field surveys to ensure any necessary habitat or species specific survey are completed during the appropriate time of year. PPL Electric is committed to obtain all necessary permits and approvals from the applicable jurisdictional agencies and comply with any conditions or requirements imposed on such permits.

4.2.4 Cultural Resources

During the siting process cultural resources data were collected from PHMC to understand the location of sensitive resources. Effort has already been made at this initial step to understand where such resources are located, and working to avoid NRHP listed sites, and where possible avoiding eligible resources. Cultural resource coordination with the PHMC will be conducted and PPL Electric will further coordinate with the PHMC to determine an area of potential effect (APE) and complete the necessary surveys. PPL Electric is committed to working with the PHMC to complete any required studies and address any potential impacts and required mitigation activities.

4.2.5 Community Features and Conserved Lands

Community features, which include schools, daycare centers, churches, and cemeteries, were identified and effectively avoided by the Alternative IEC East Portion that consists of existing ROW and infrastructure. As such, none of these features will be affected by the Alternative IEC East Portion alignment.

Conserved lands involve areas preserved as private or public open space. No private or public open space areas are located along the Alternative IEC East Portion alignment.

4.2.6 Anticipated Agency Requirements and Permits

In summation of the items reviewed above, several specific threatened and endangered species studies, wetland/stream studies, and archaeological surveys will need to be conducted along the new Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion to provide information on possible avoidance and impact areas. That portion of the Alternative IEC East Portion consisting of existing infrastructure is already permitted for an additional circuit. In addition, existing access is already in place within the ROW and activities to install the new arms and wires will not result in new wetland and or stream impacts and therefore would not require new permits.

PPL Electric is committed to obtain all necessary permits and approvals from the applicable jurisdictional agencies and comply with any conditions or requirements imposed on such permits.

4.2.7 Review of County Comprehensive Plans and Municipal Level Zoning

Public utility features, such as transmission lines are generally exempt from local municipal authority. To further the Commonwealth's goal of making agency actions consistent with sound land use planning by considering the impact of its decision upon local comprehensive plans and zoning ordinances, the PAPUC adopted a policy on January 11, 2001 that requires the public utility to review comprehensive land use plans and local zoning ordinances to evaluate the impact of proposed projects on these items (See 52 Pa. Code 69.1101, 31 Pa. Bull. 951 [Feb. 17, 2001]). In adherence to PAPUC regulations, PPL Electric evaluated the proposed new Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion alignment in terms of consistency with the zoning ordinances of the townships that will be crossed and the comprehensive plans of York County (**Table 5**).

The York County Planning Commission (YCPC) was established in 1959 by the York County Board of Commissioners. The primary purpose for founding the Commission was to create a comprehensive plan to guide further growth and development in the County, as well as protect its important natural resources. The *York County Comprehensive Plan* (Plan) was adopted in 1992, but portions of the report have been updated as recently as 2011. It reflects York County's vision for the future and provides the basis for all other land use regulations, such as zoning ordinances and subdivision and land development ordinances. York County has experienced dramatic change over the past few decades that resulted in "sprawl, congestion, overburdened community facilities, and loss of important resources"; the plan aims to direct future growth in a way that will continue to make York County a desirable place to live (YCPC 2011).

The Plan is not intended to regulate and has no official authority, but all planning efforts at the municipal level are meant to be guided by the goals, objectives, and policies outlined within.

The Plan listed the following three (3) goals:

1. To protect and preserve important natural resources,
2. To direct growth and development to appropriate locations, and
3. To facilitate coordinated planning at all levels of the government (YCPC 2011).

The Plan summarizes the existing resources in York County for which it has been designed to both manage and protect, while simultaneously promoting future growth and development. York County recognizes that in order to plan development and ensure protection of natural resources and natural areas, the public and developers must know the location and importance of these environmental features. The inventory of existing features within the County, including community facilities, is the basis upon which the Plan was developed.

The Plan is built on the idea of encouraging growth and development, while at the same time discouraging expansive or premature land development activity. York County seeks to conserve and enhance scenic historic and cultural resource areas and identified preservation areas (including agricultural lands, natural resources, parks, and recreation lands) while simultaneously promoting growth and economic development. The Plan contains specific Resource Reports that detail preservation efforts for each of these resources as they relate to development efforts.

The Plan also contains a specific *Land Use Plan* that reflects a desire to channel and contain development within appropriate growth areas, which are areas capable of providing a range of necessary services and infrastructure. York County lends itself to a "naturally-defined" land use plan where physical limitations have, to a large extent, directed and determined the existing land use patterns (YCPC 2011). Similarly, municipal zoning ordinances were based principally on physical limitations and portray a relatively cohesive and logical pattern of land use. The construction of the Project would result in a Utility Corridor, which York County sees as a potential public benefit, potentially resulting in the development of public recreation areas.

Since its adoption in 1992, the Plan has been well received throughout the County at the Municipal level. The Plan supports an improved working partnership between the County government and associated municipalities through the "Municipal Consulting Program" which promotes county/municipal plan consistency. As a result of this initiative, many of the townships within the County have developed or updated municipal zoning ordinances to incorporate the essence of the Plan, which is, "concentrating development within growth areas, coupled with [the] identification and protection of important open space and agricultural resources" (YCPC

2011). As of 2011, all of the municipalities that will be crossed by the new Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion, including Chanceford and Lower Chanceford townships currently default to the County-wide Comprehensive Planning efforts.

Township Zoning

Local zoning ordinances have been adopted in both of the two (2) townships that will be crossed by the new Furnace Run 230 kV Corridor portion of the Alternative IEC East Portion in York County. 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. Ordinances for Chanceford Township define the allowances and restrictions associated with the various zoning districts and specifically identify "Public Utility" which include utilities such as water, gas, and electric, to be special exemptions from local regulations, as long as the required actions are approved by the PAPUC. Lower Chanceford Township do not specifically address public utilities in their zoning ordinance documents.

Table5: Summary of Zoning and Comprehensive Plans within the Project Study Area

COUNTY/TOWNSHIP	ZONING	COMPREHENSIVE PLAN
York County		York County Comprehensive Plan (2011)
Lower Chanceford Township	Zoning Map (2016) and Ordinances	No Comprehensive Plan
Chanceford Township	Zoning Map (2006) and Ordinances	No Comprehensive Plan

5.0 REFERENCES

2006 Chanceford Township Planning Commission. Chanceford Township Zoning Ordinance. https://www.chancefordtwp.com/ordinances/Zoning_Ordinances.pdf.

2019. Federal Emergency Management Administration (FEMA). FEMA's National Flood Hazard Layer (Official). http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30.

2016. Lower Chanceford Township Planning Commission. Lower Chanceford Zoning Ordinance. Not available online and purchased hardcopy from Township.

2019. National Wilderness Preservation System. Map of the National Wilderness Preservation System. http://www.wilderness.net/map.cfm.

2019a. PADCNR. State Forest District Index. http://www.dcnr.state.pa.us/forestry/stateforests/.

2019b. PADCNR. State Parks. http://www.dcnr.pa.gov/StateParks/FindAPark/Pages/default.aspx.

2019. Pennsylvania Department of Environmental Protection (PADEP). Chapter 93 *Water Quality Standards*. http://www.pacode.com/secure/data/025/chapter93/chap93toc.html.

2019a. Pennsylvania Fish and Boat Commission (PFBC). Approved Trout Streams (stocked). http://pfbc.pa.gov/fishpub/summaryad/troutregs_sc.htm.

2019b. PFBC. Class A Wild Trout Waters. http://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Documents/classa.pdf.

2019c. PFBC. Pennsylvania Wilderness Trout Streams. http://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Documents/PAwildernessTroutStreams.pdf

2019d. PFBC. Pennsylvania Wild Trout Waters (Natural Reproduction). http://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Documents/trout_repro.pdf.

2019a. PGC. Sportsman Recreation Map State Game Lands No. 083 York County. https://www.pgc.pa.gov/HuntTrap/StateGameLands/Documents/SGL%20Maps/SGL_083.pdf.

2019b. PGC. Sportsman Recreation Map State Game Lands No. 181 York County. http://gohuntpa.org/SGL/SGL_181.pdf.

2019c. PGC. Sportsman Recreation Map State Game Lands No. 327 York County. http://www.pgc.pa.gov/HuntTrap/StateGameLands/Documents/SGL%20Maps/SGL_327.pdf.

2004. The Nature Conservancy (TNC). *A Natural Areas Inventory of York County, Pennsylvania*, 2004. Middletown, PA.

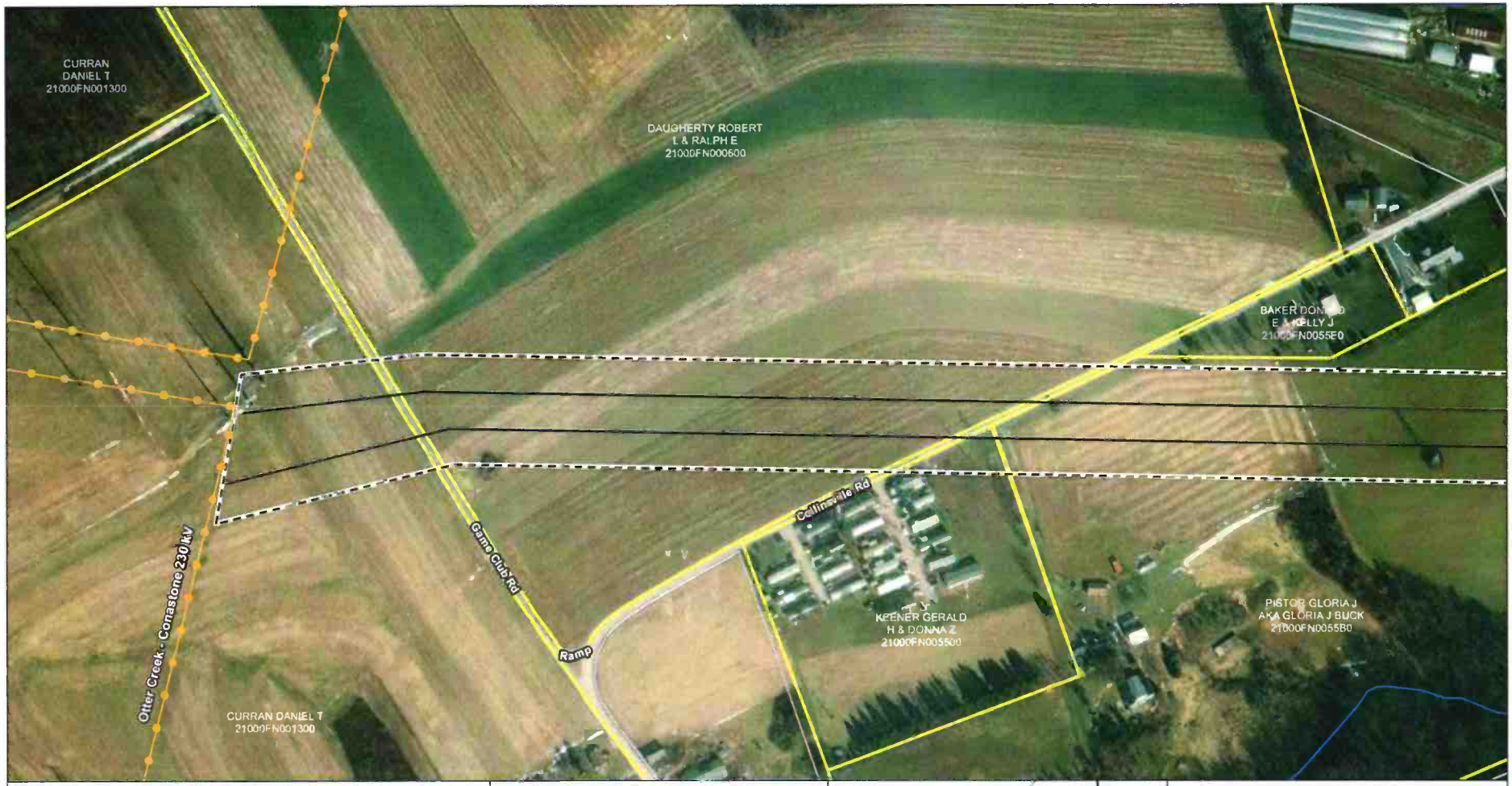
2010. U.S. Army Corps of Engineers. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0*, ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

2019. United States Fish and Wildlife Service. (USFWS) National Wetlands Inventory – Wetlands Mapper. https://www.arcgis.com/home/item.html?id=8adef46d09304946a2f112a232de19b1.

2016. YCPC. York County Comprehensive Plan. https://www.yorkcountygov.com/_fileUploads/files/2035COMPPLAN_2016_07_26.pdf.

2011. YCPC. York County Growth Management Plan. http://www.ycpc.org/Long_Range_Docs/Comp_Plan/Growth_Mgmt_Complete.pdf.

Appendix A: Aerial Mapbook



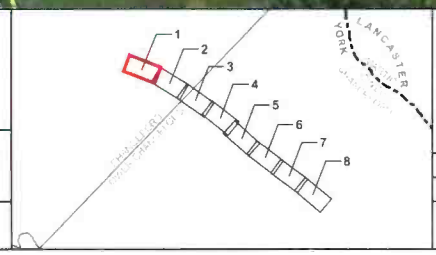
Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator, Units: Meter



Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 1

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

ppl

Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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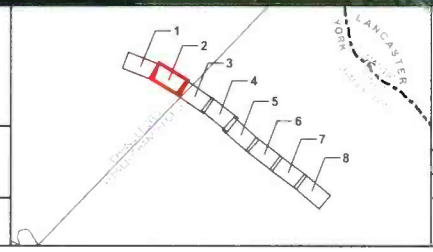
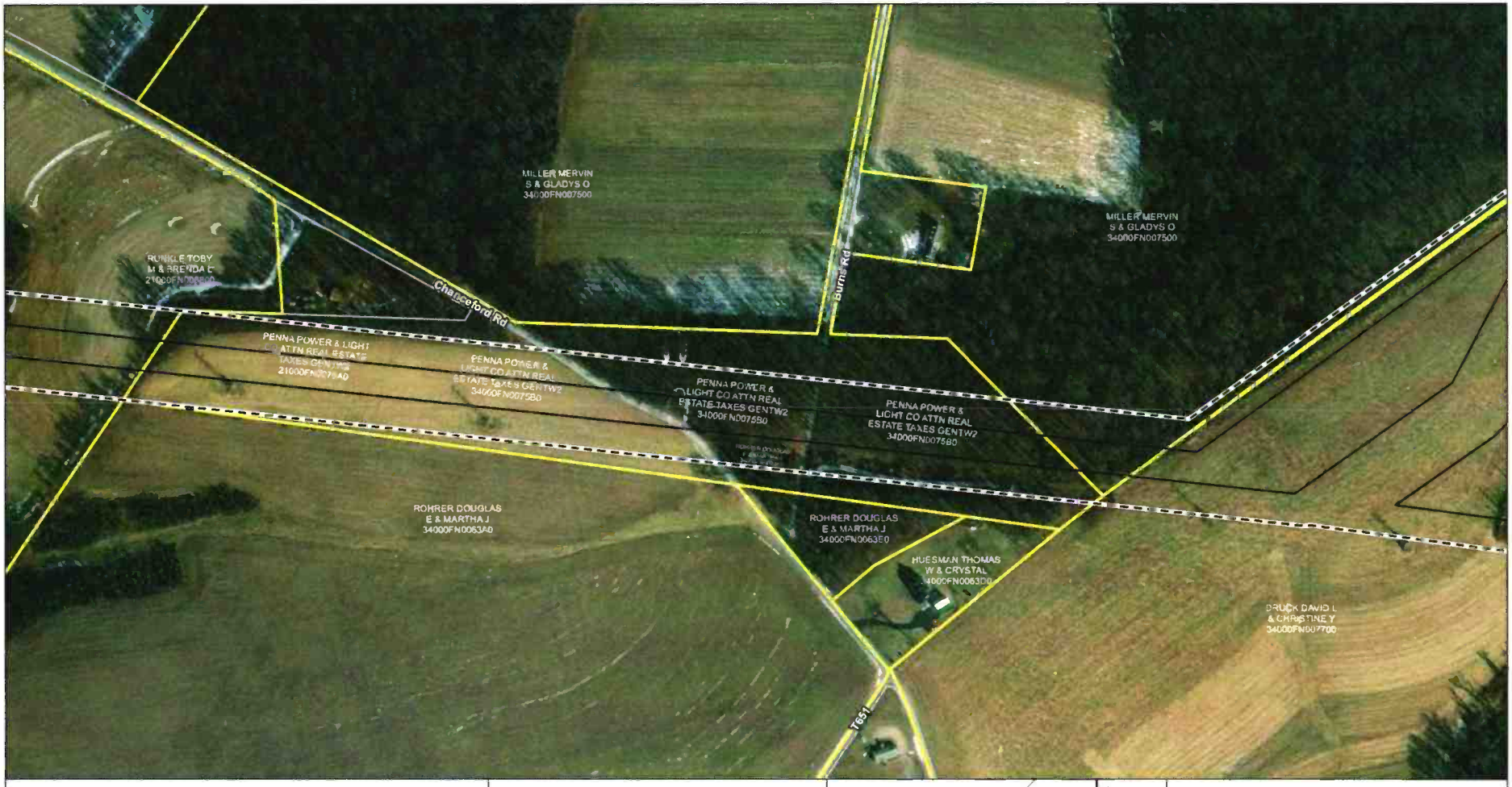
Projection: Transverse Mercator, Units: Meter



Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 2

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020



Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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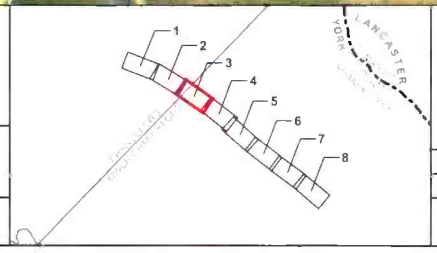
Projection: Transverse Mercator; Units: Meter



Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 3

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

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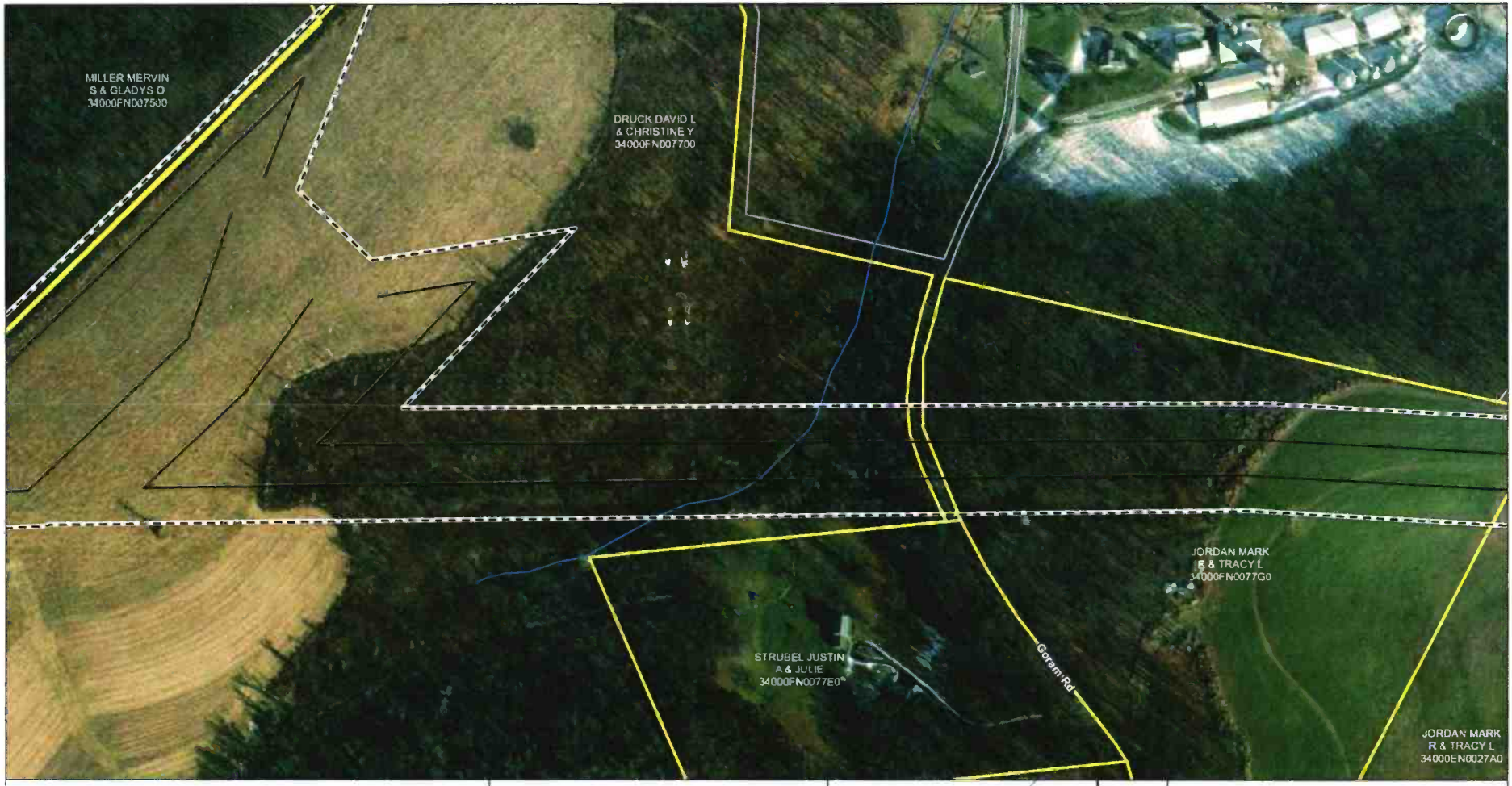

Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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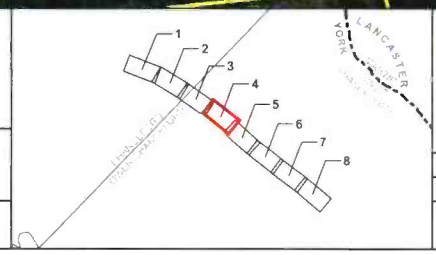

Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 4

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

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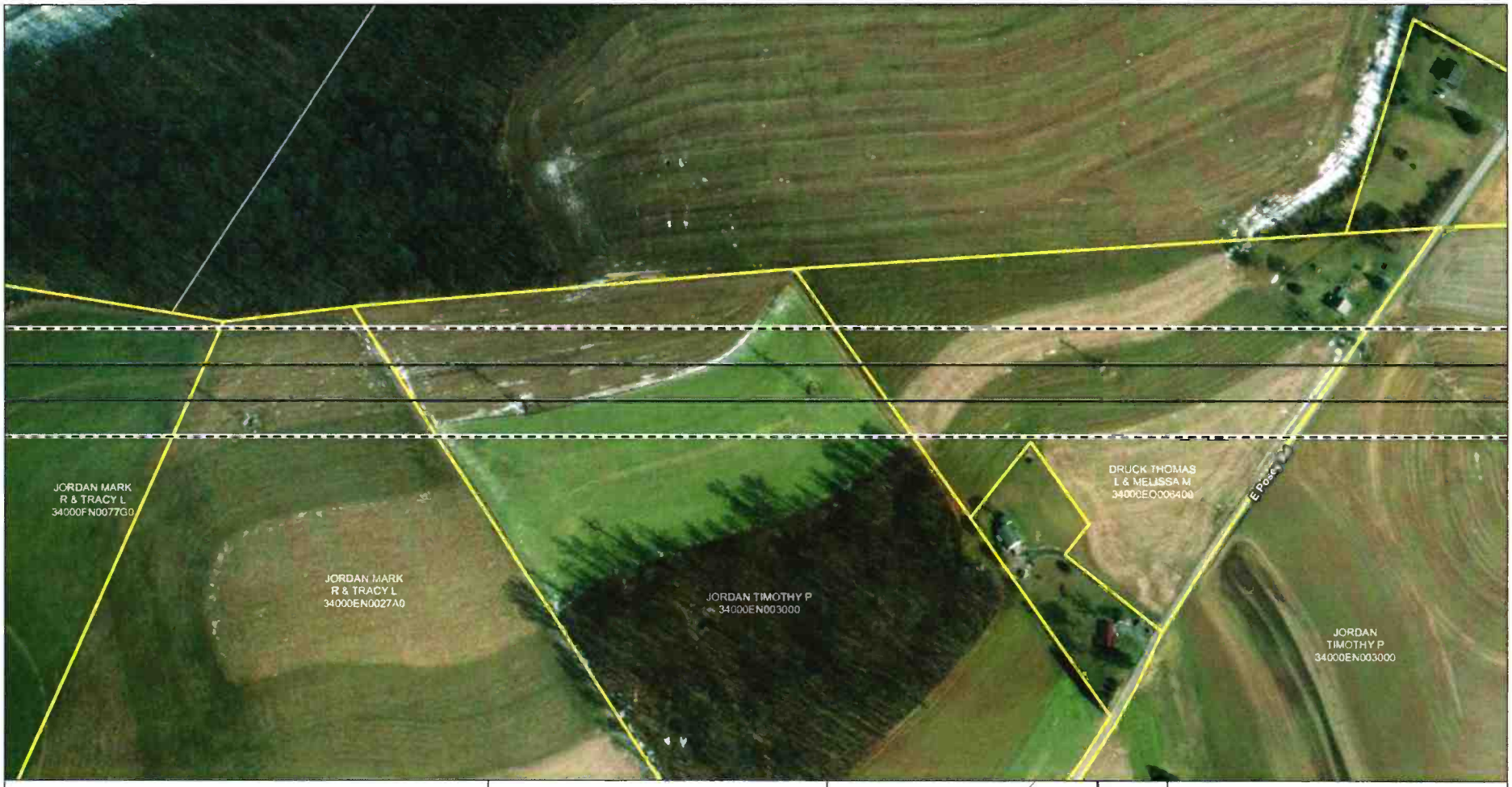

Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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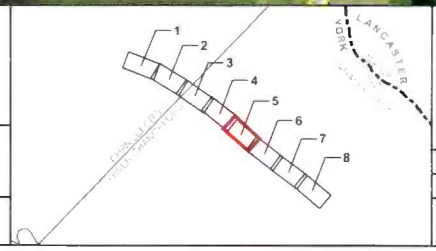

Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 5

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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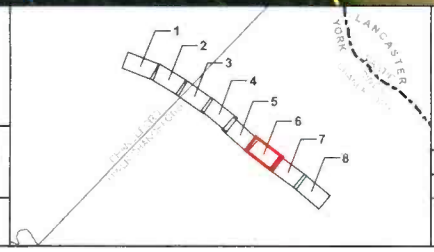
Projection: Transverse Mercator, Units: Meter



Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 6

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

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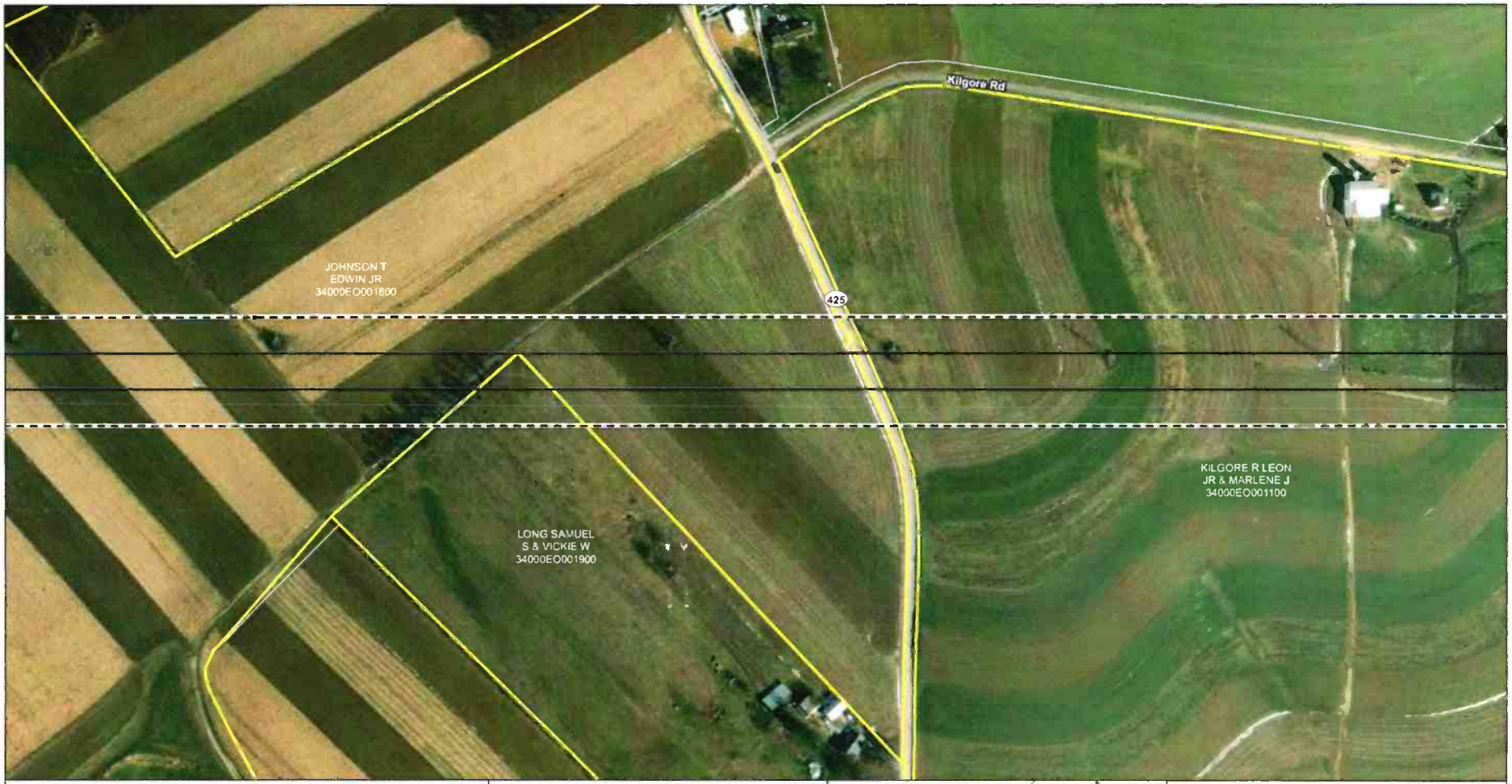

Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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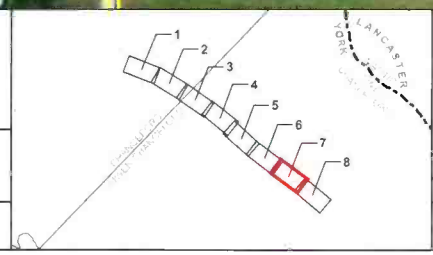
Projection: Transverse Mercator; Units: Meter



Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 7

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

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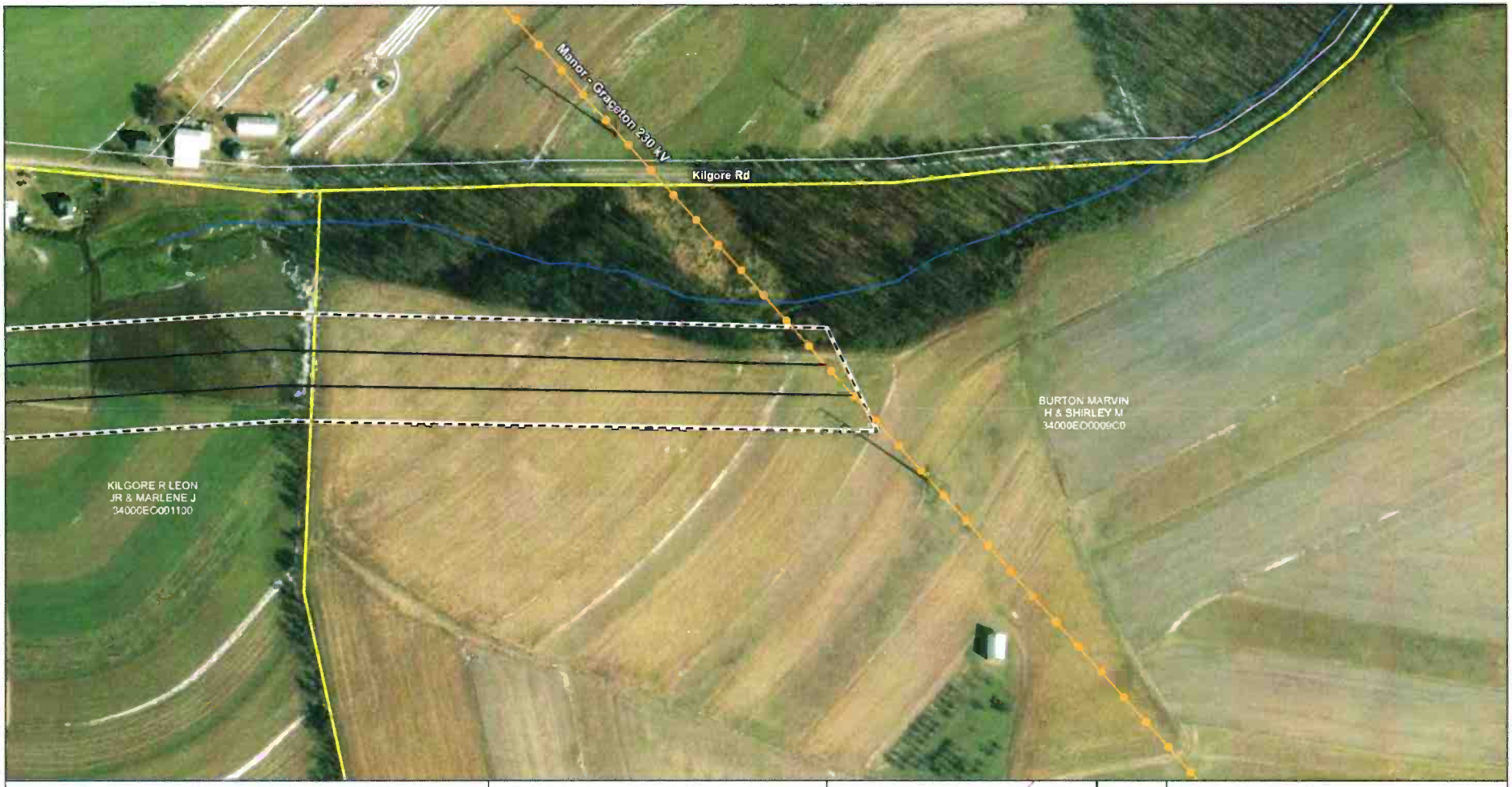

Legend

- Proposed Furnace Run 230 kV Transmission Line
- Proposed 225' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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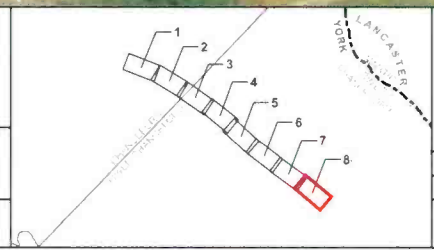
Projection: Transverse Mercator; Units: Meter



Furnace Run 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 8

Prepared By: NAB	Checked By: HB
Job: Furnace Run	Date: January 24, 2020

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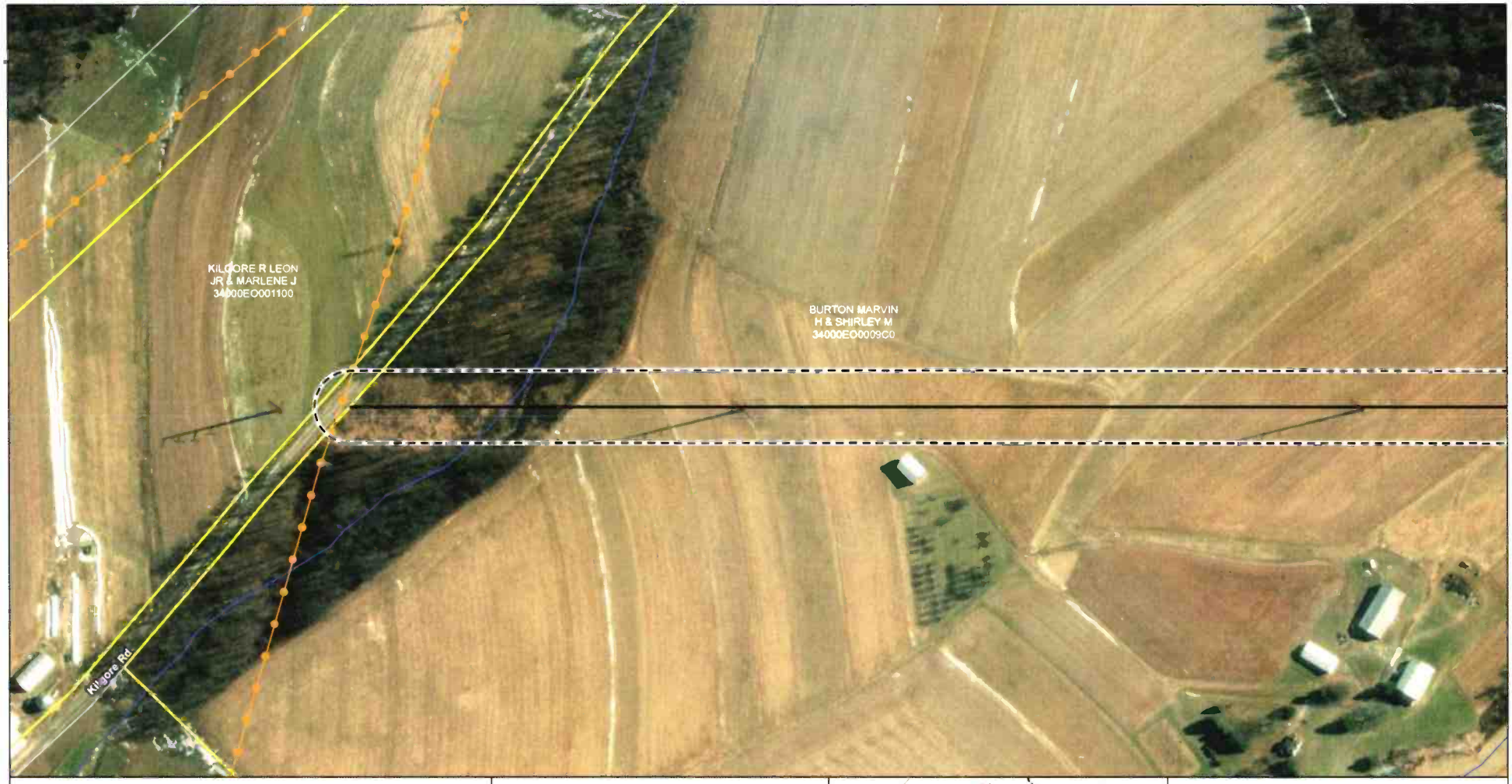

Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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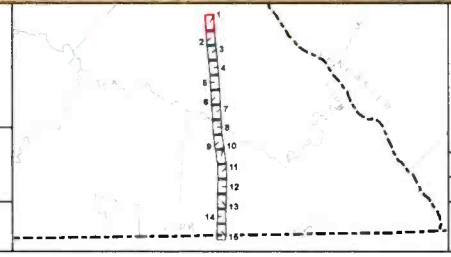
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 1

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

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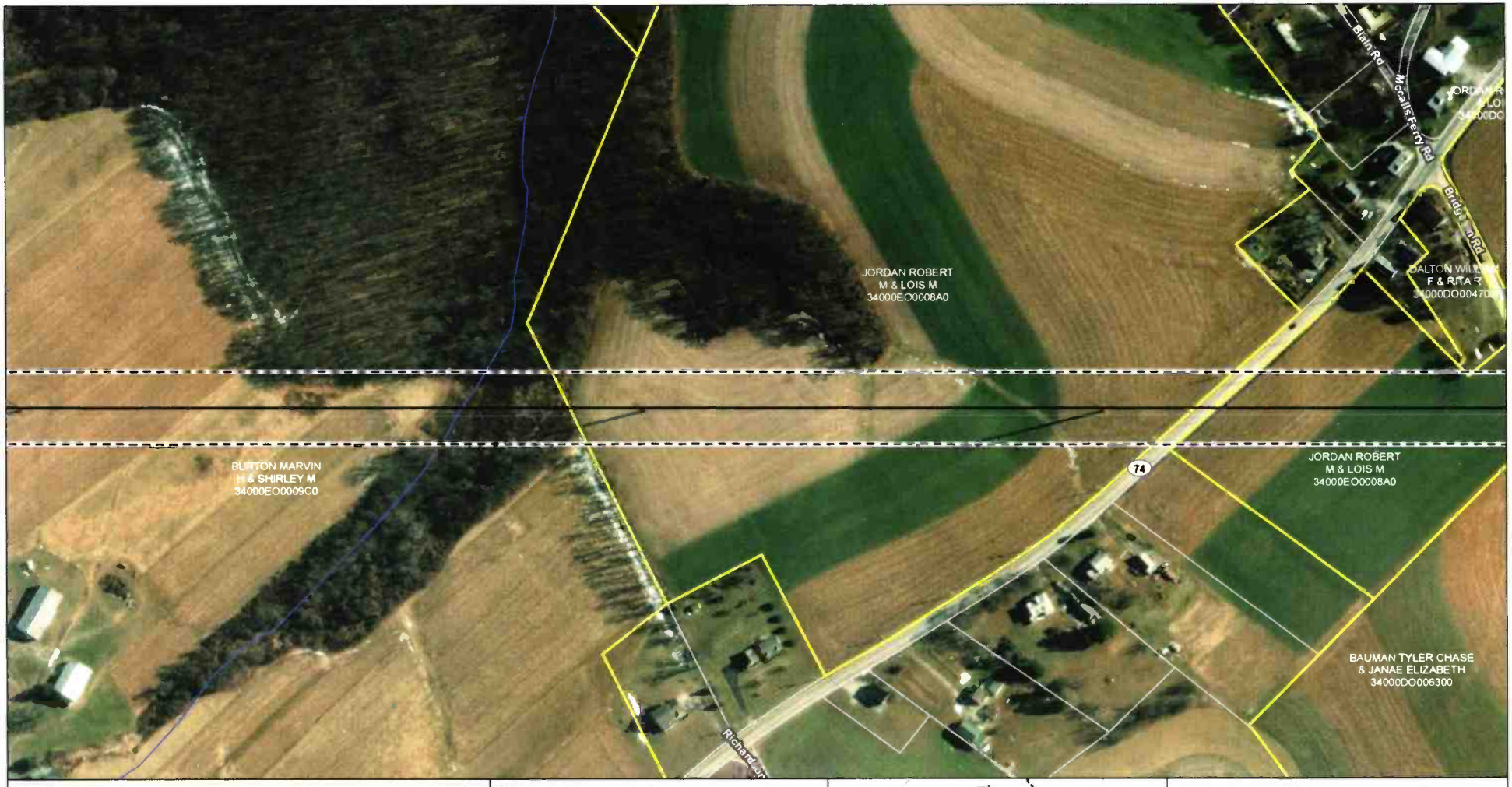

Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
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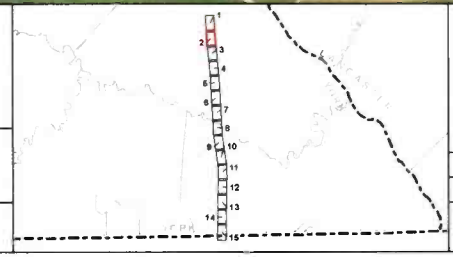
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 2

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

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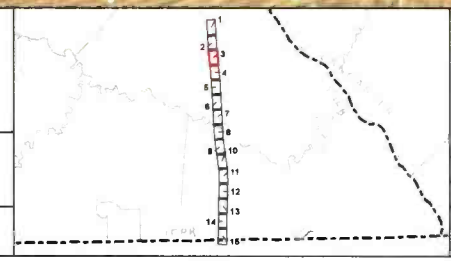
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

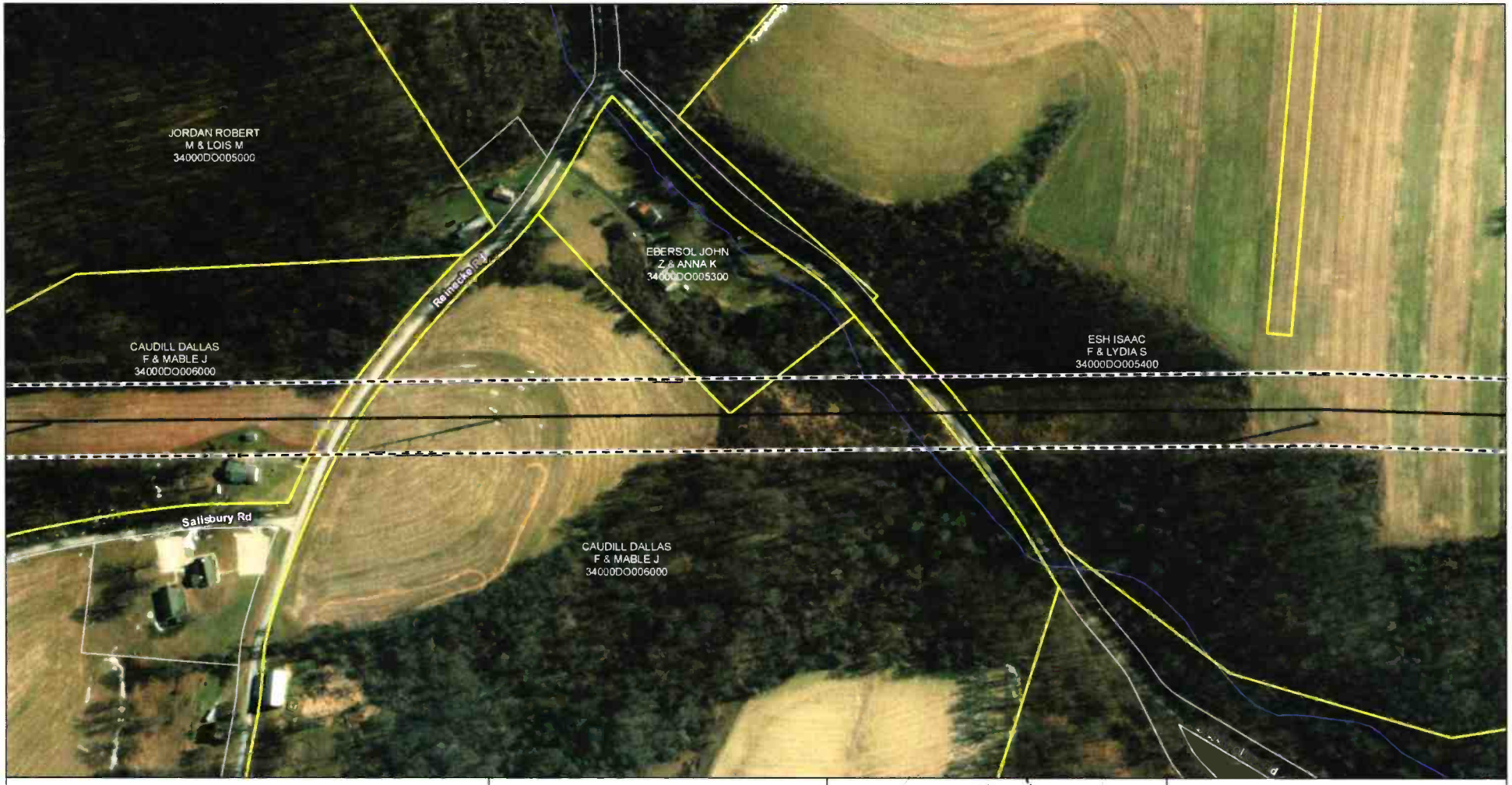
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 3

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter

Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 4

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

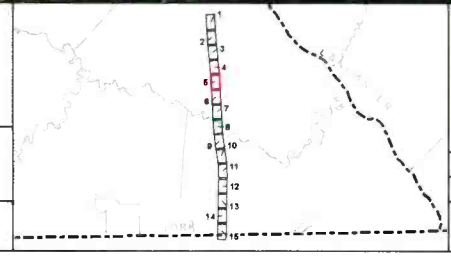
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 5

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

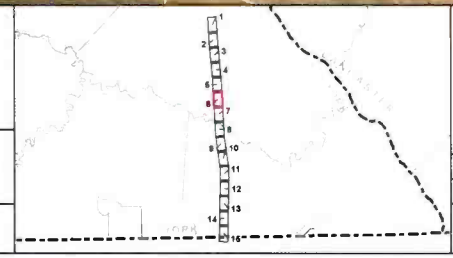
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 6

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

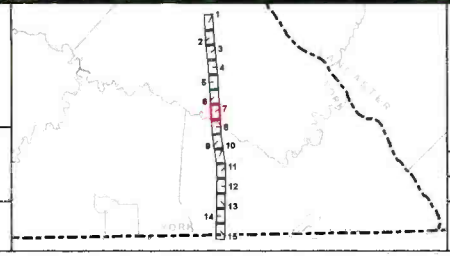
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 7

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator, Units: Meter

Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 8

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter

Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 9

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

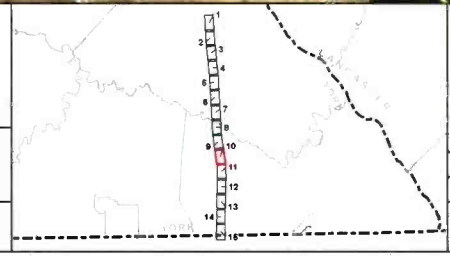
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

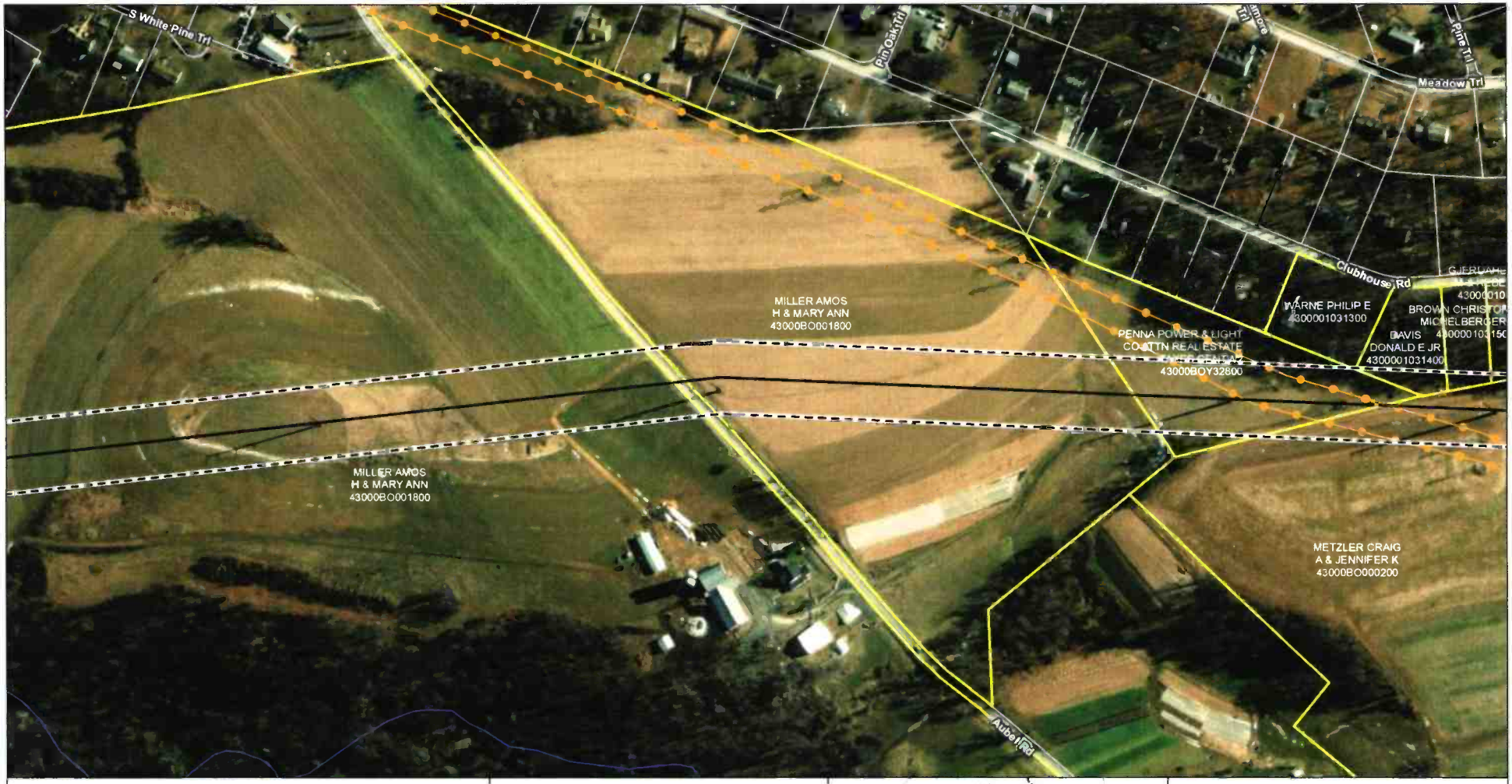
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 10

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

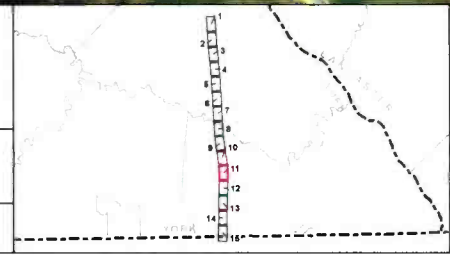
REFERENCES:

Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:

NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project

Aerial Mapbook

Map Extent 11

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter

Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 12

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

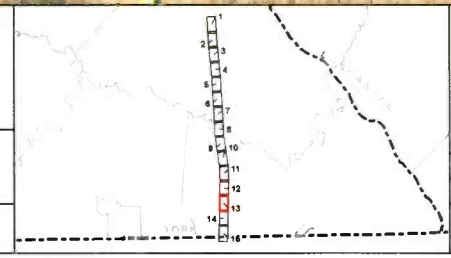
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

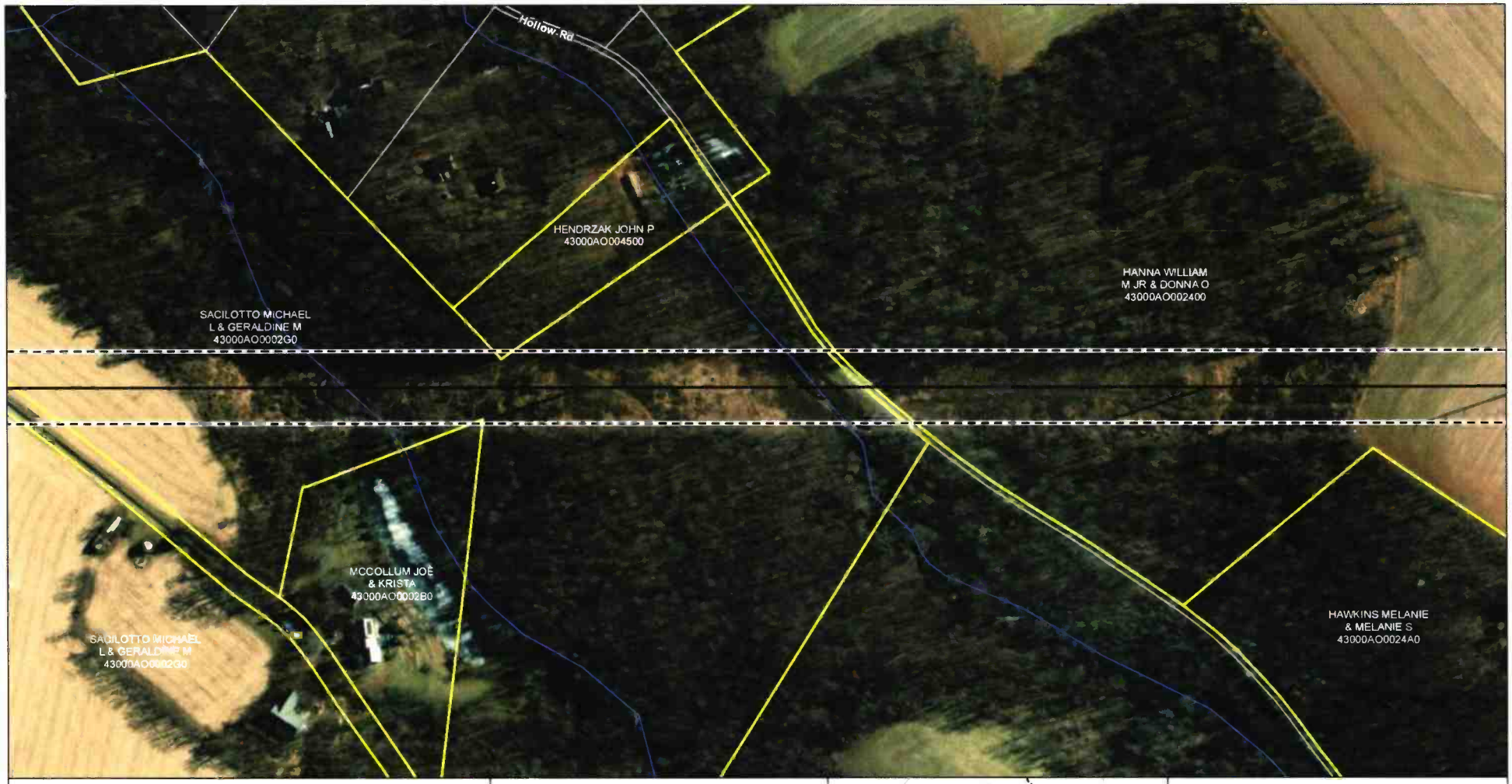
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 13

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



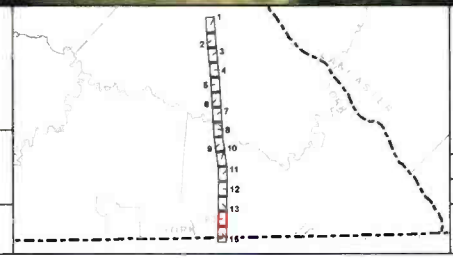
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

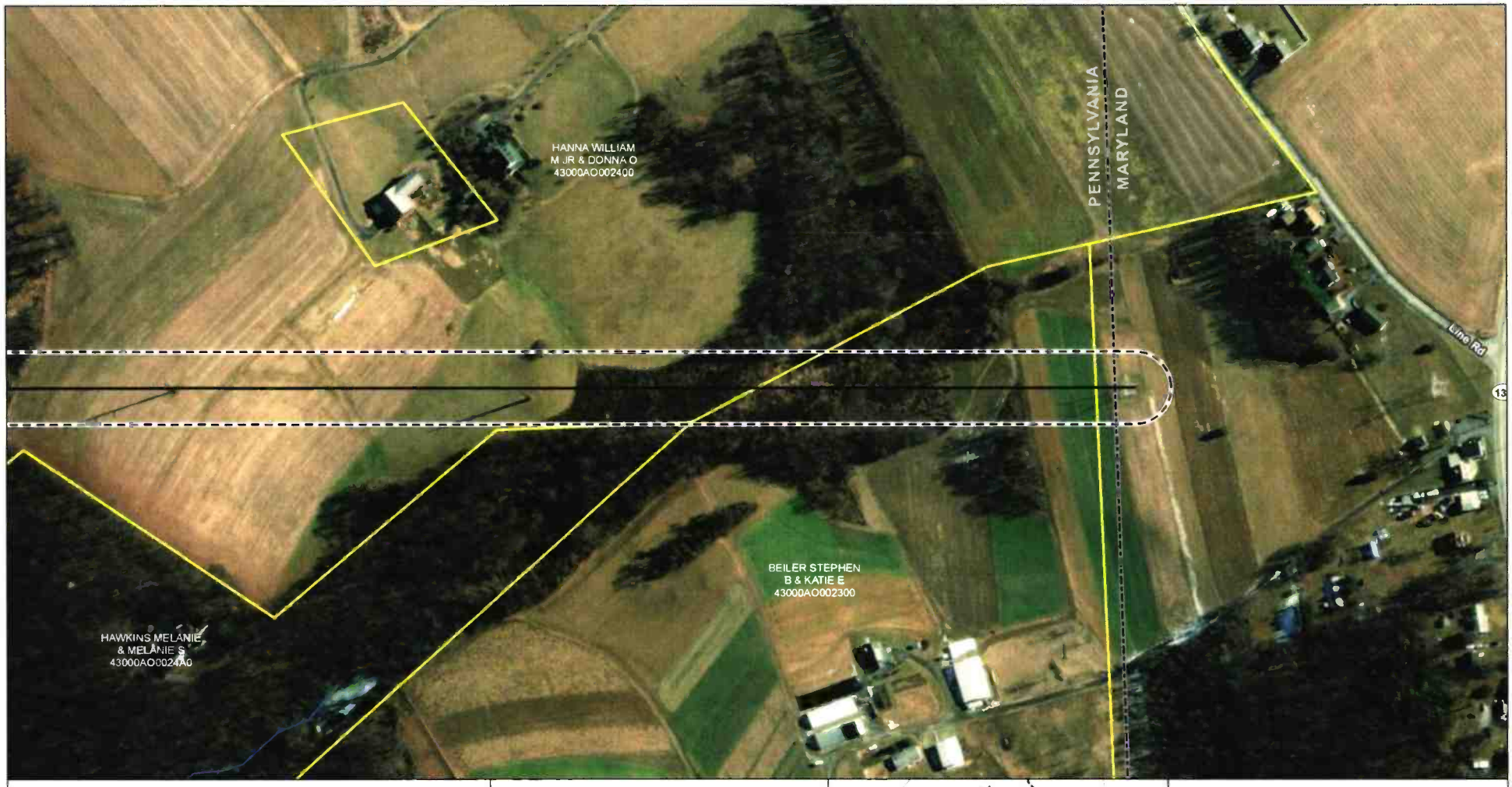
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 14

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



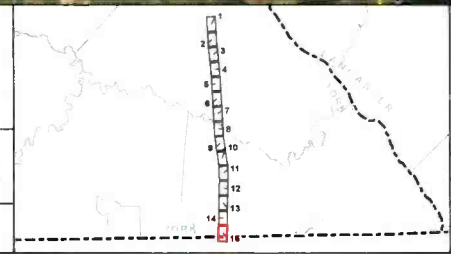
Legend

- Existing Manor - Graceton 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Manor - Graceton 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 15

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

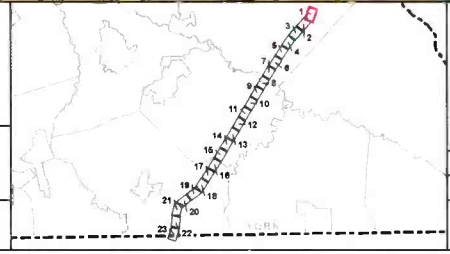
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 1

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

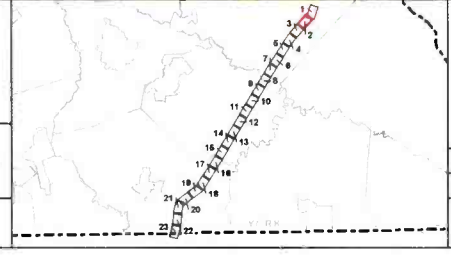
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

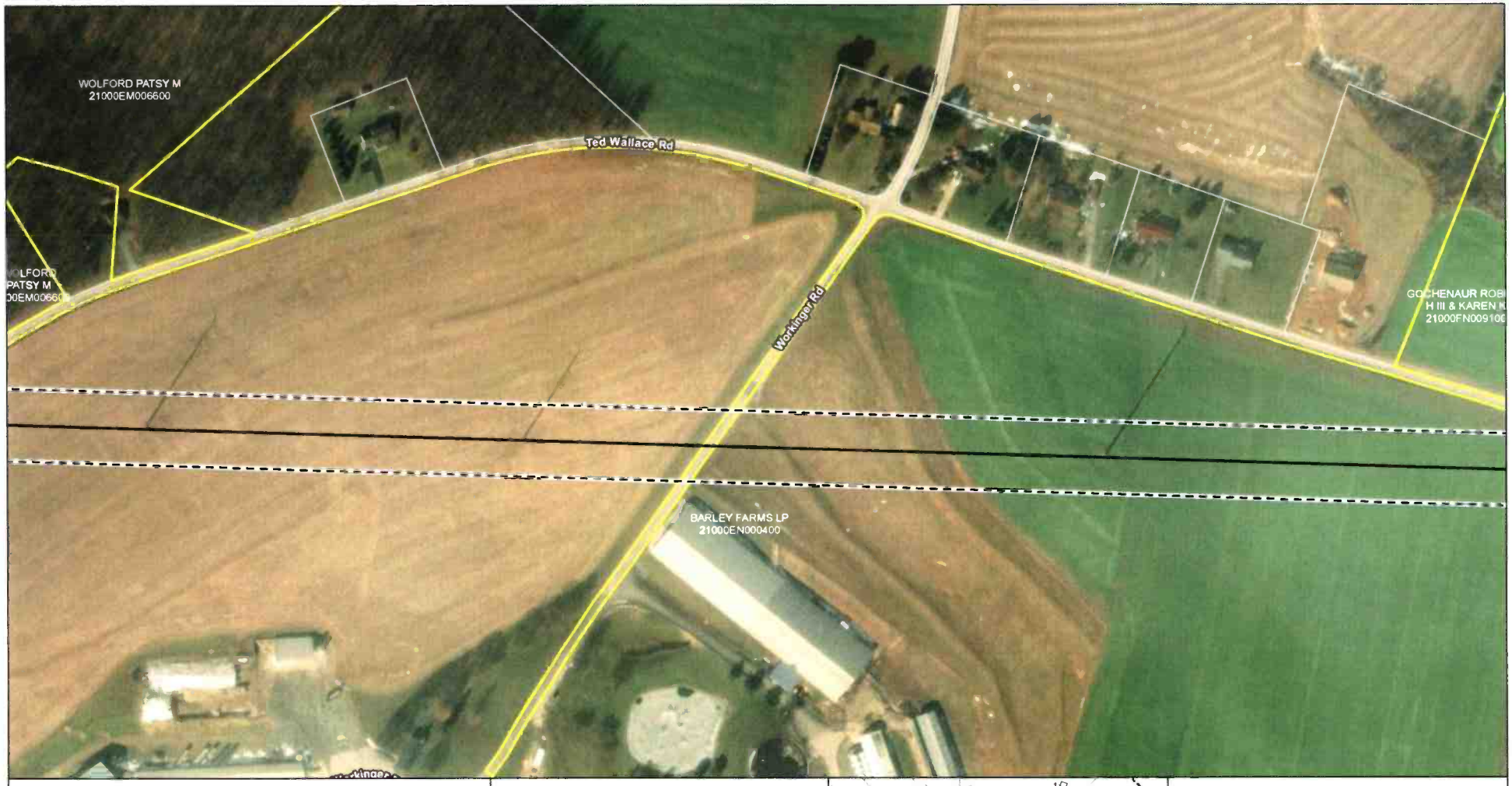
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 2

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

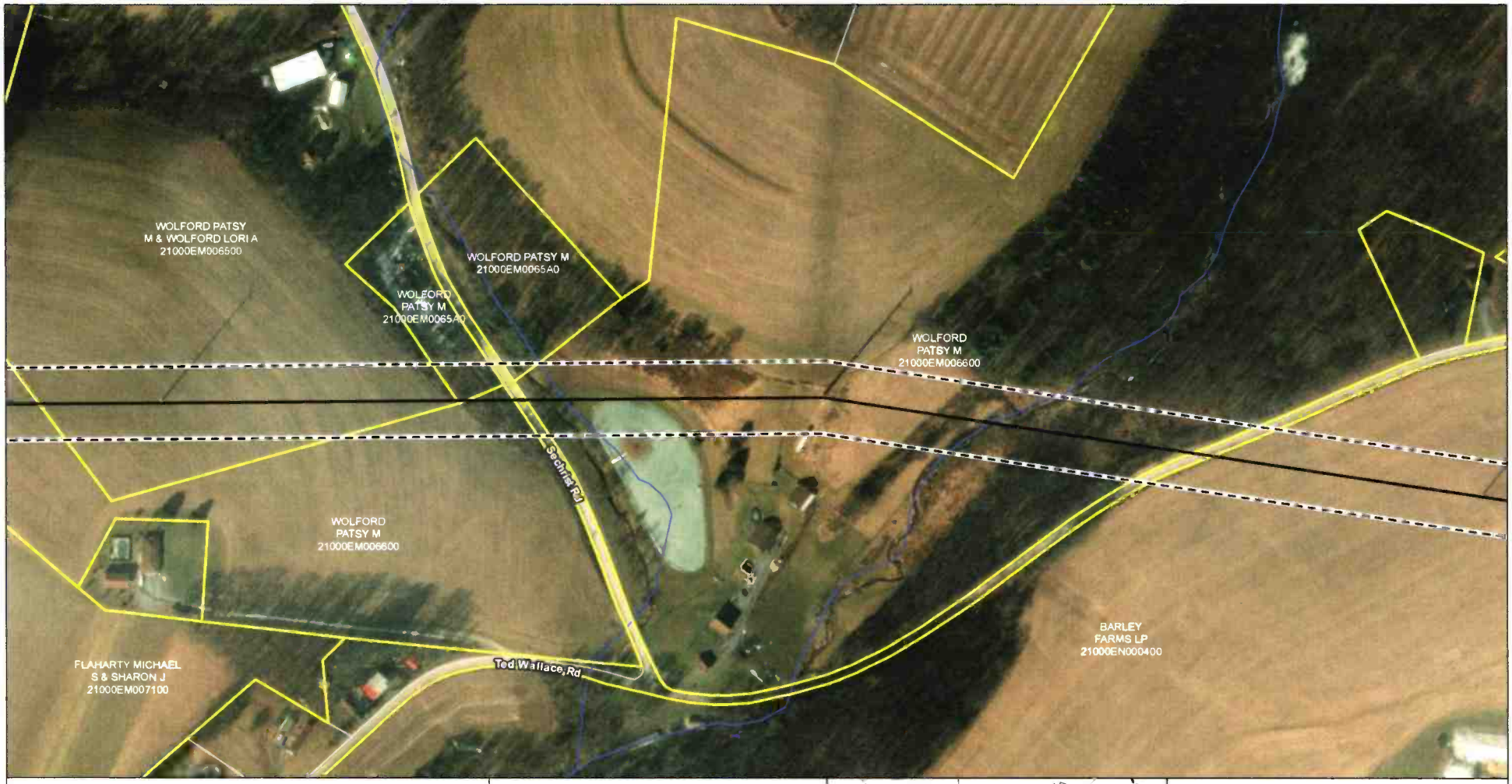
0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter

Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 3

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

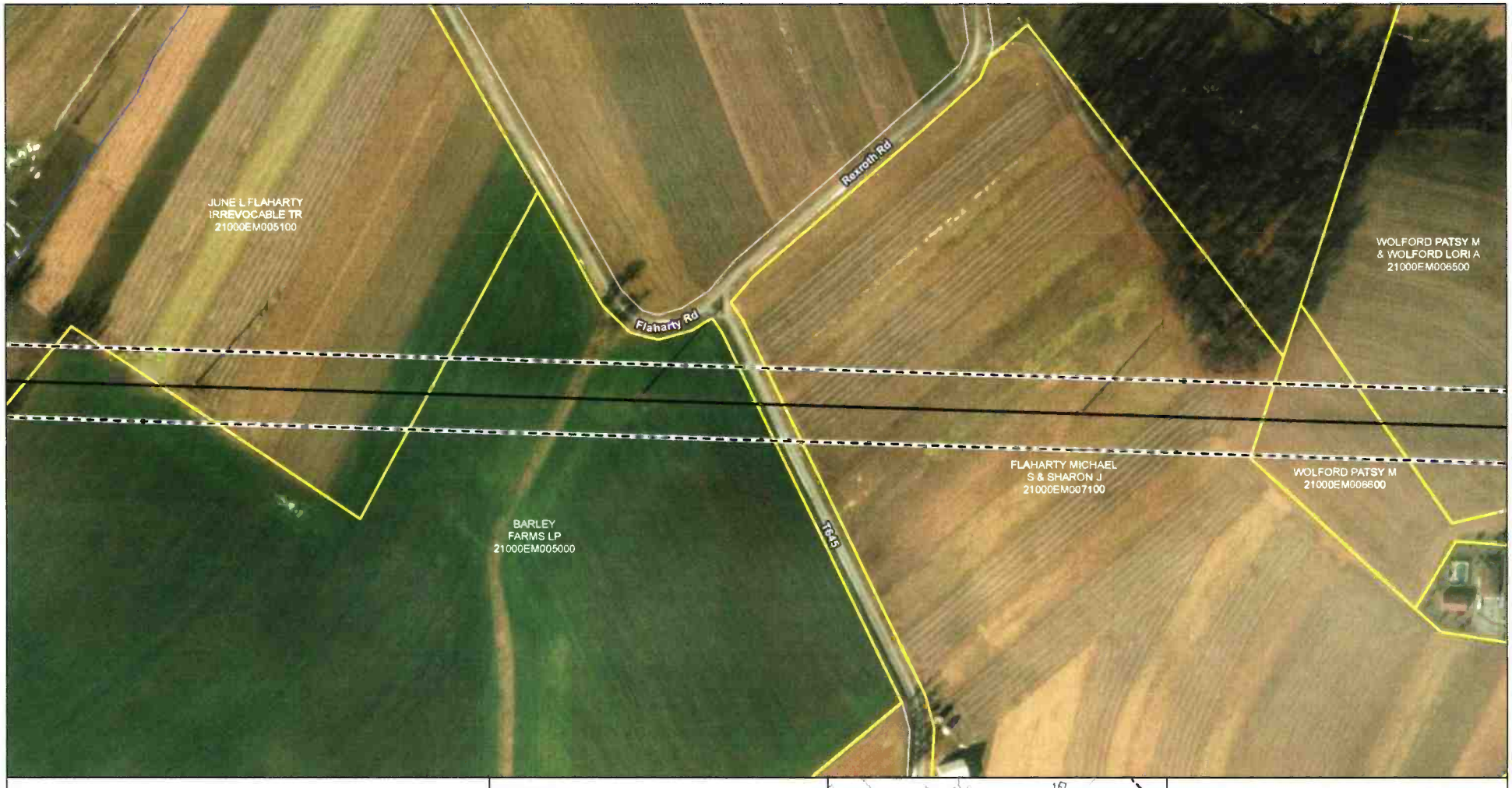
0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter

Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 4

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

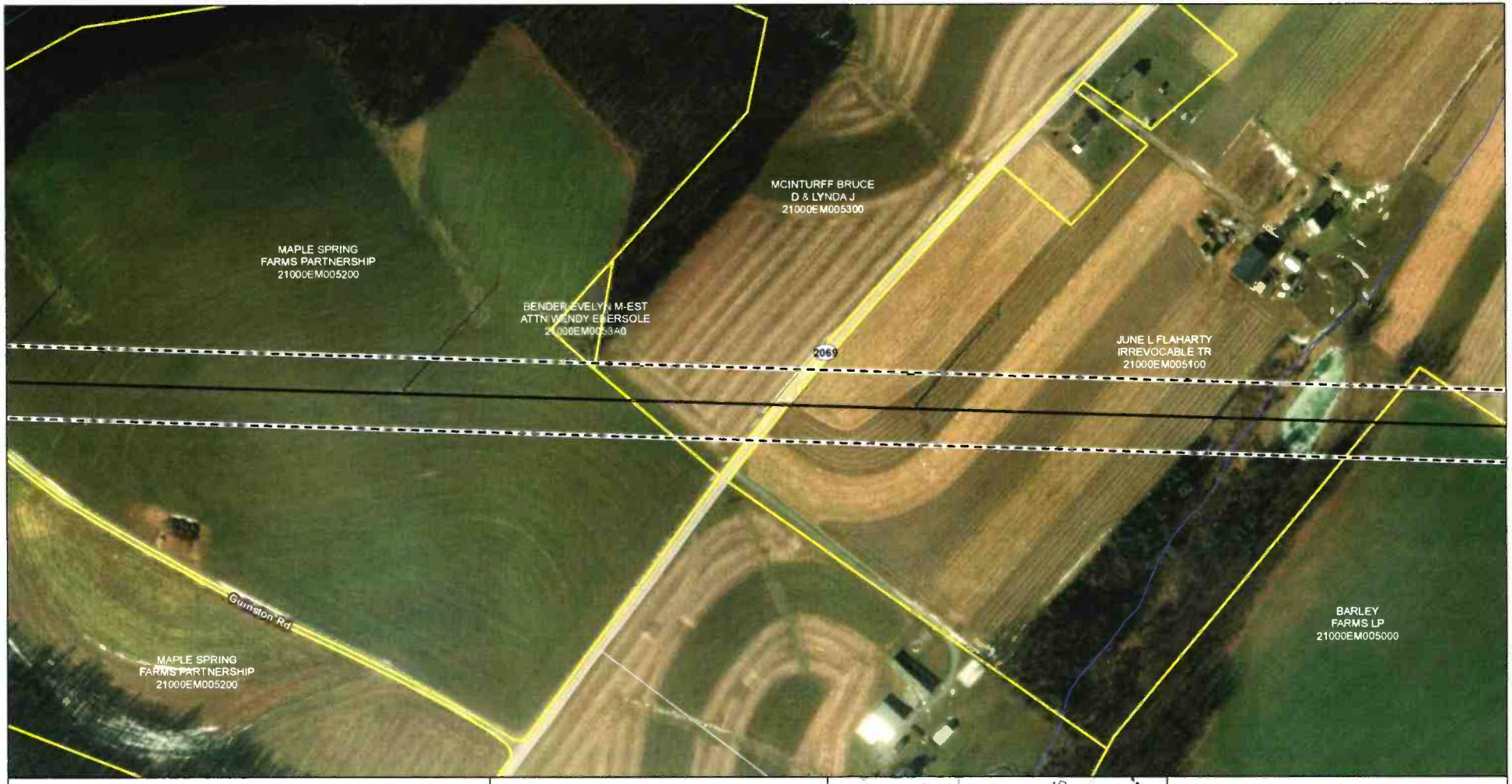
0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter

Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 5

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



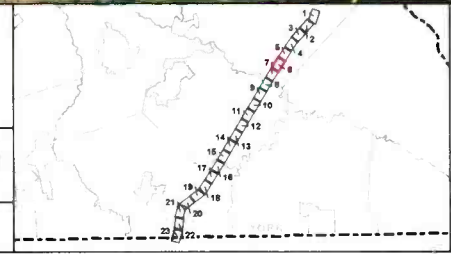
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator, Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 6

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

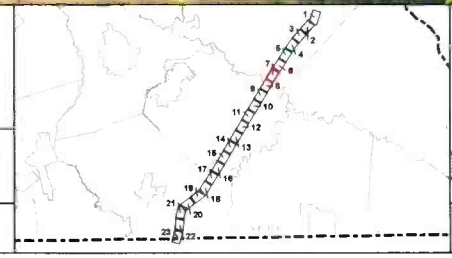
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

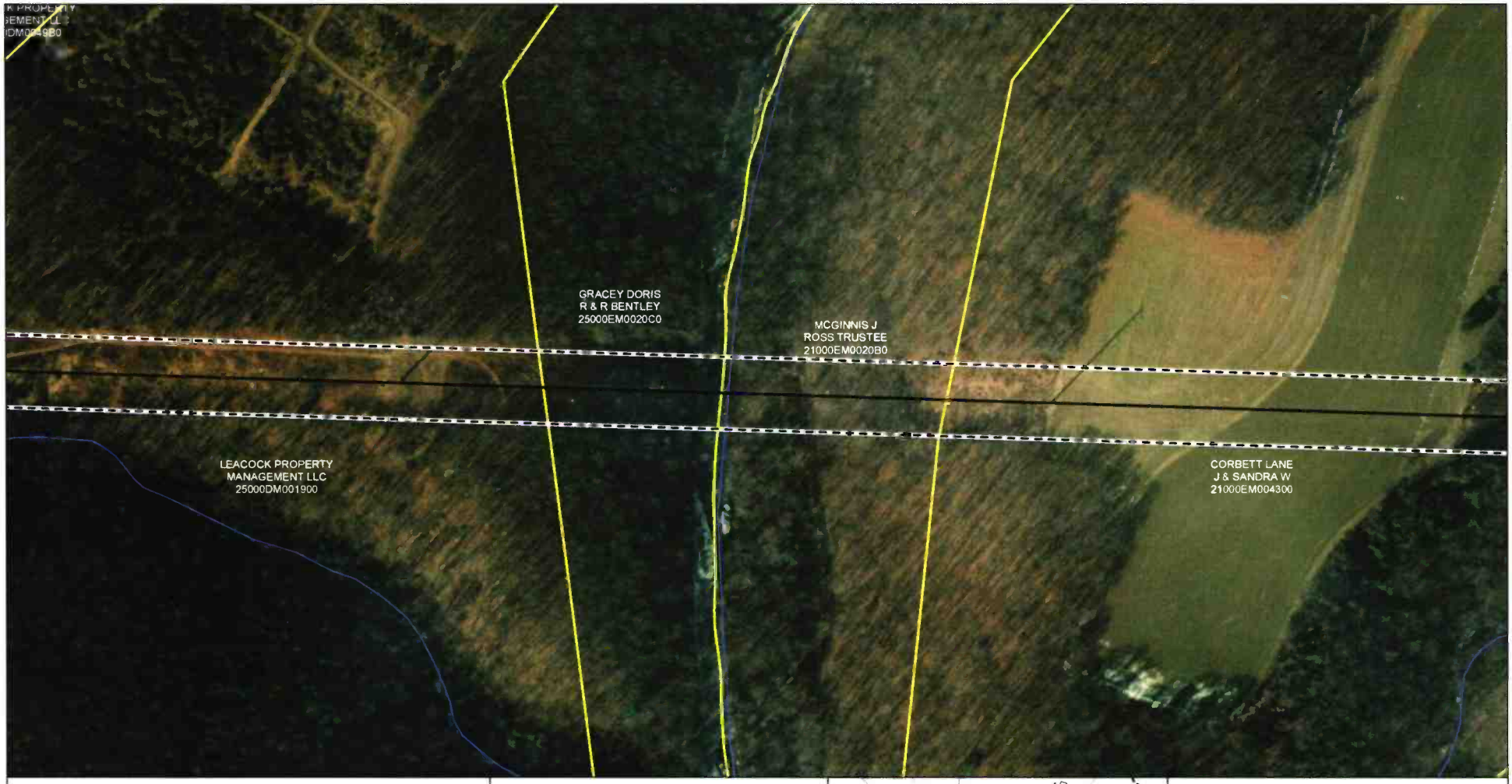
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 7

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



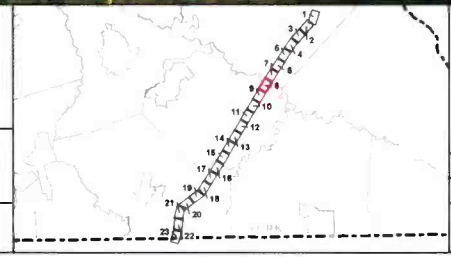
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 8

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

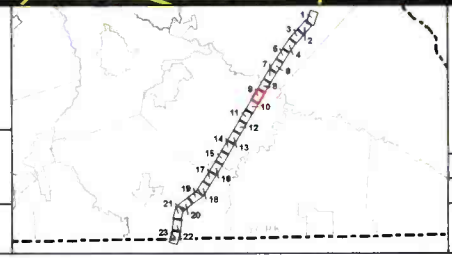
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 9

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

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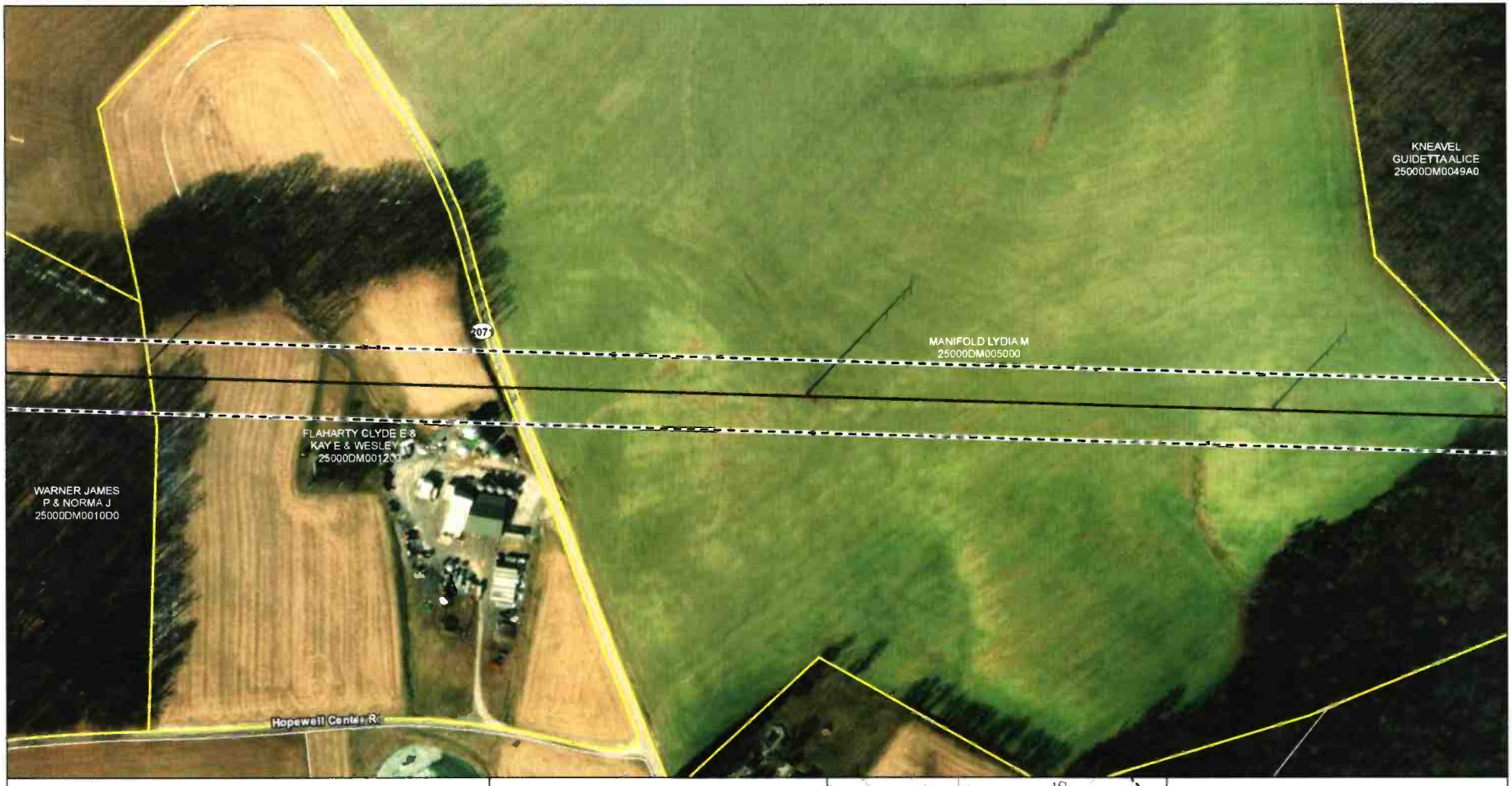


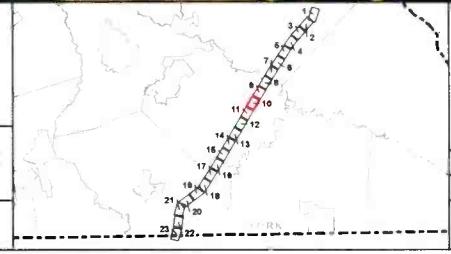
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

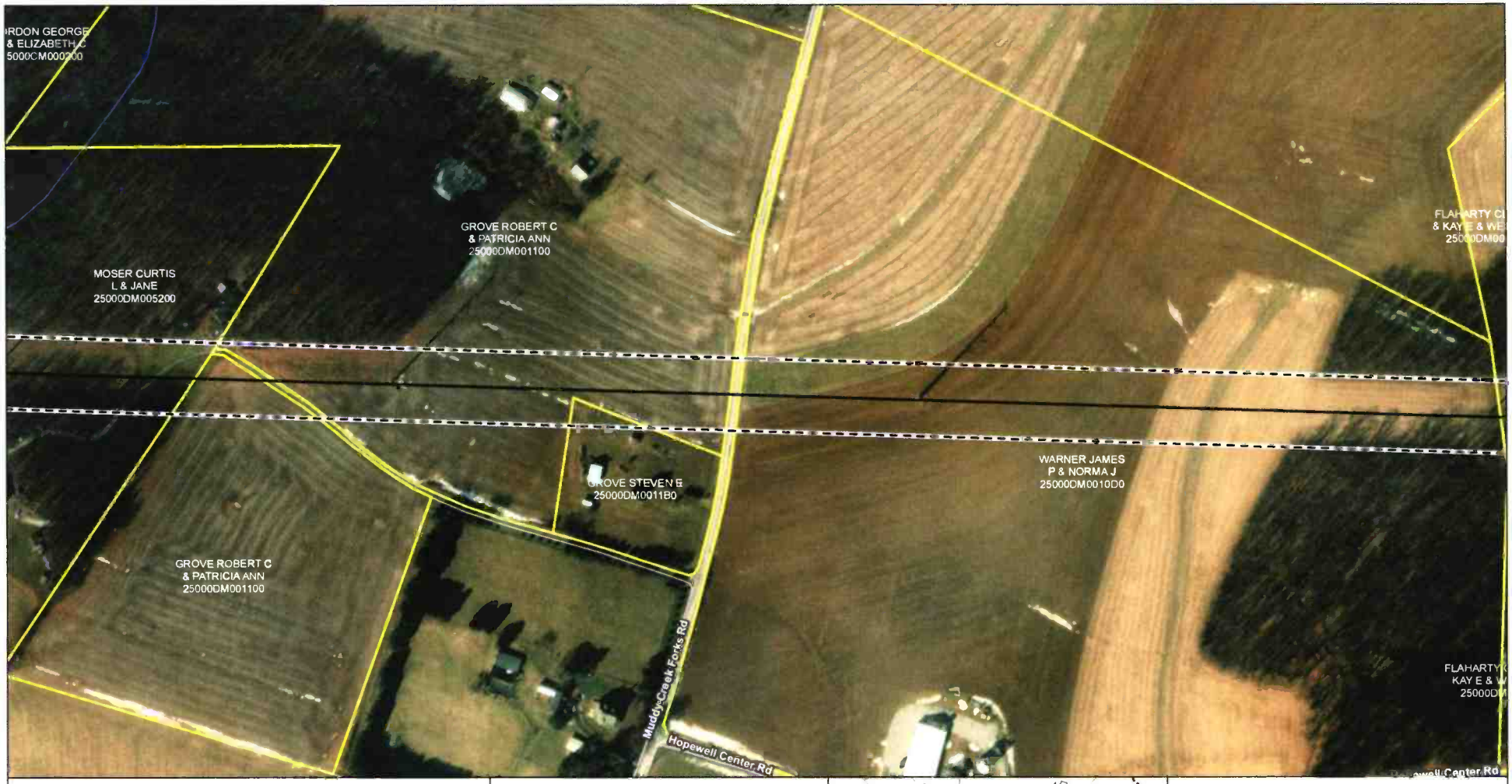
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 10

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



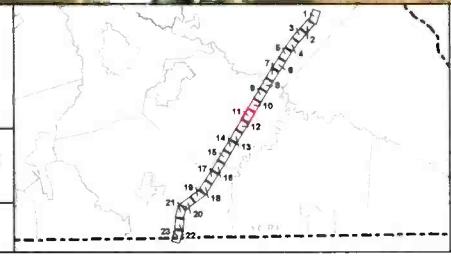
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 11

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

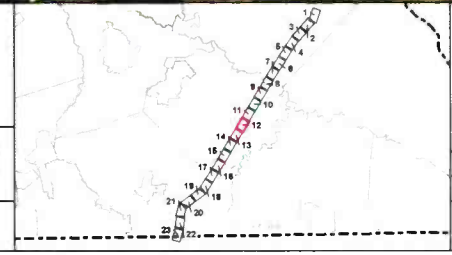
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

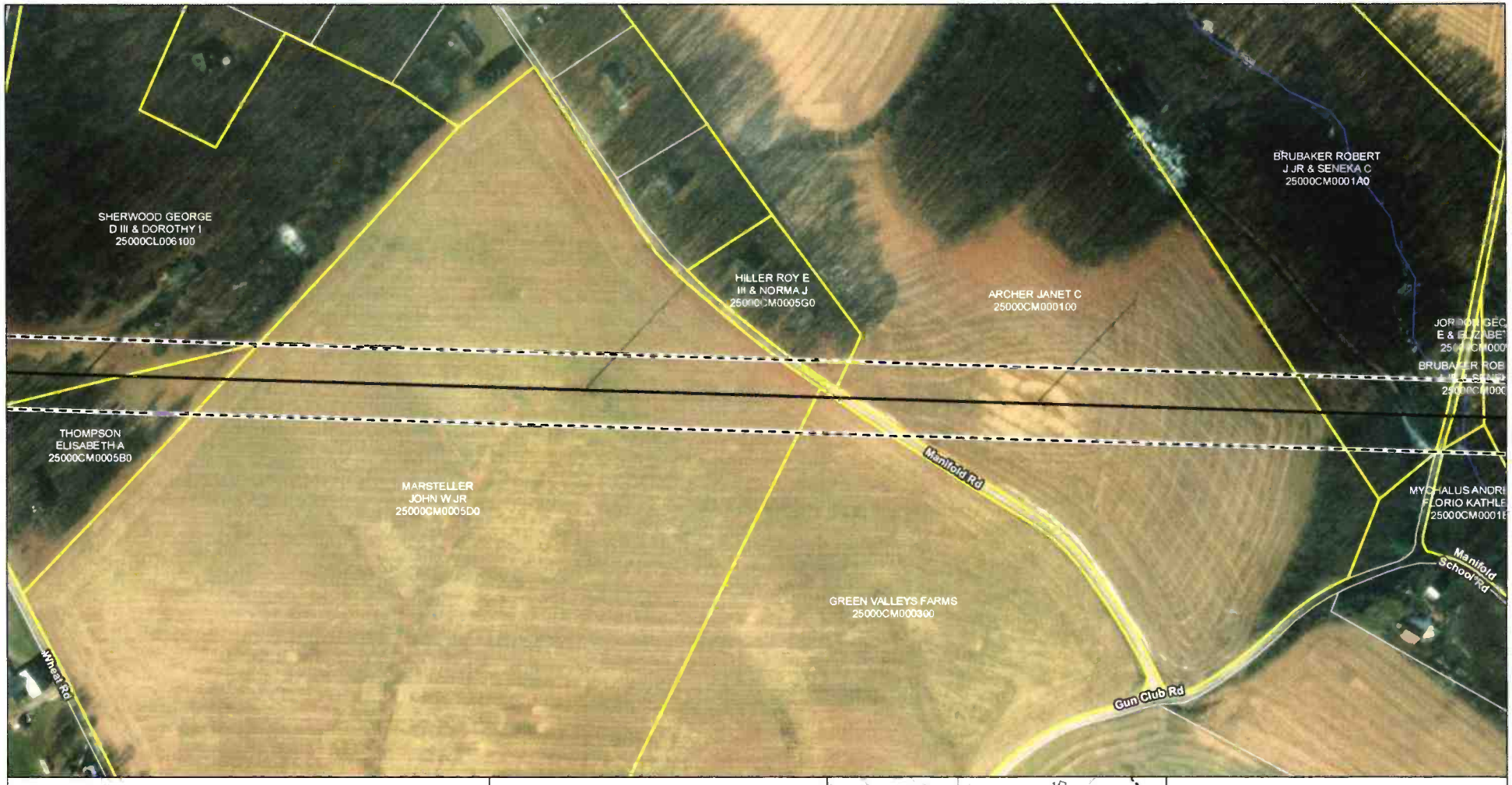
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 12

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



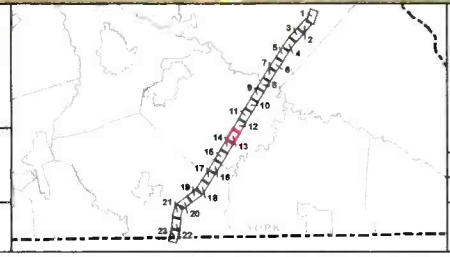
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 13

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

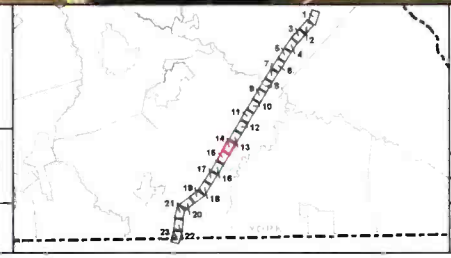
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 14

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

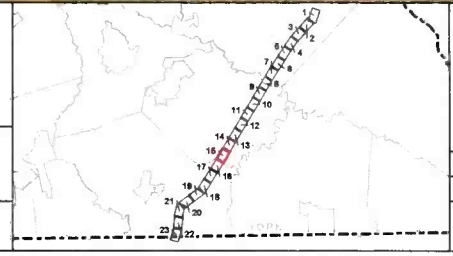
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 15

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

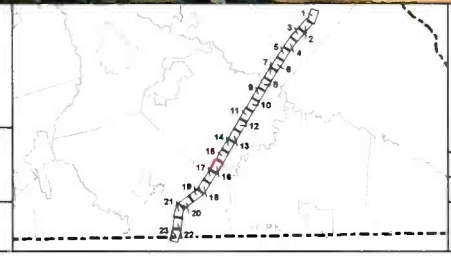
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 16

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

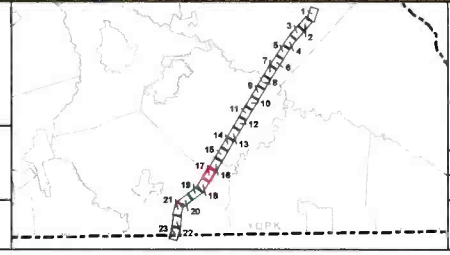
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 17

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

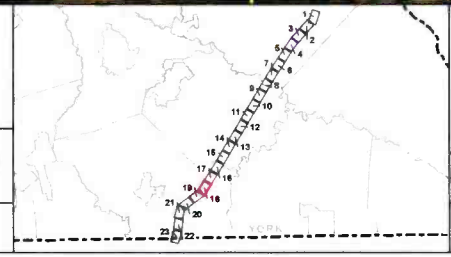
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

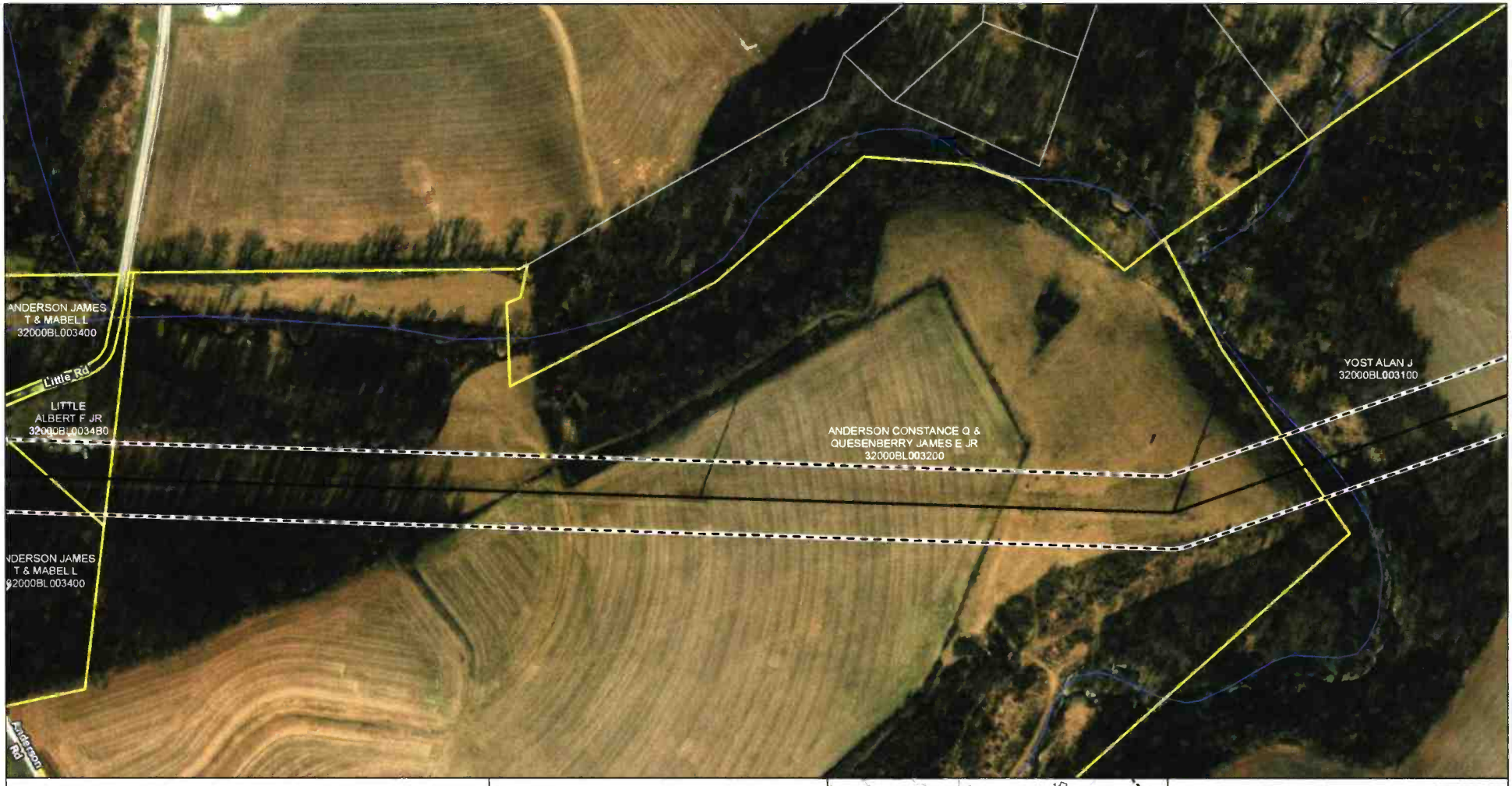
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 18

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



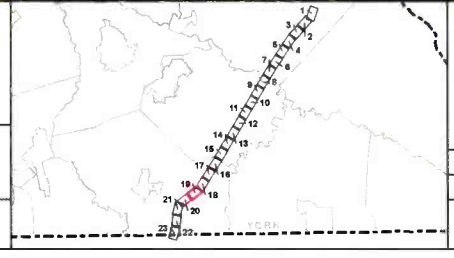
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 19

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

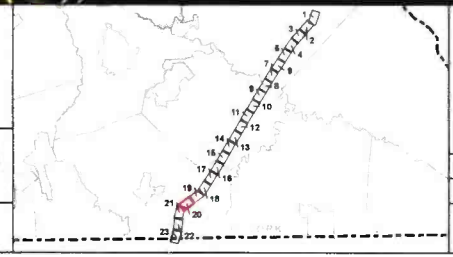
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 20

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

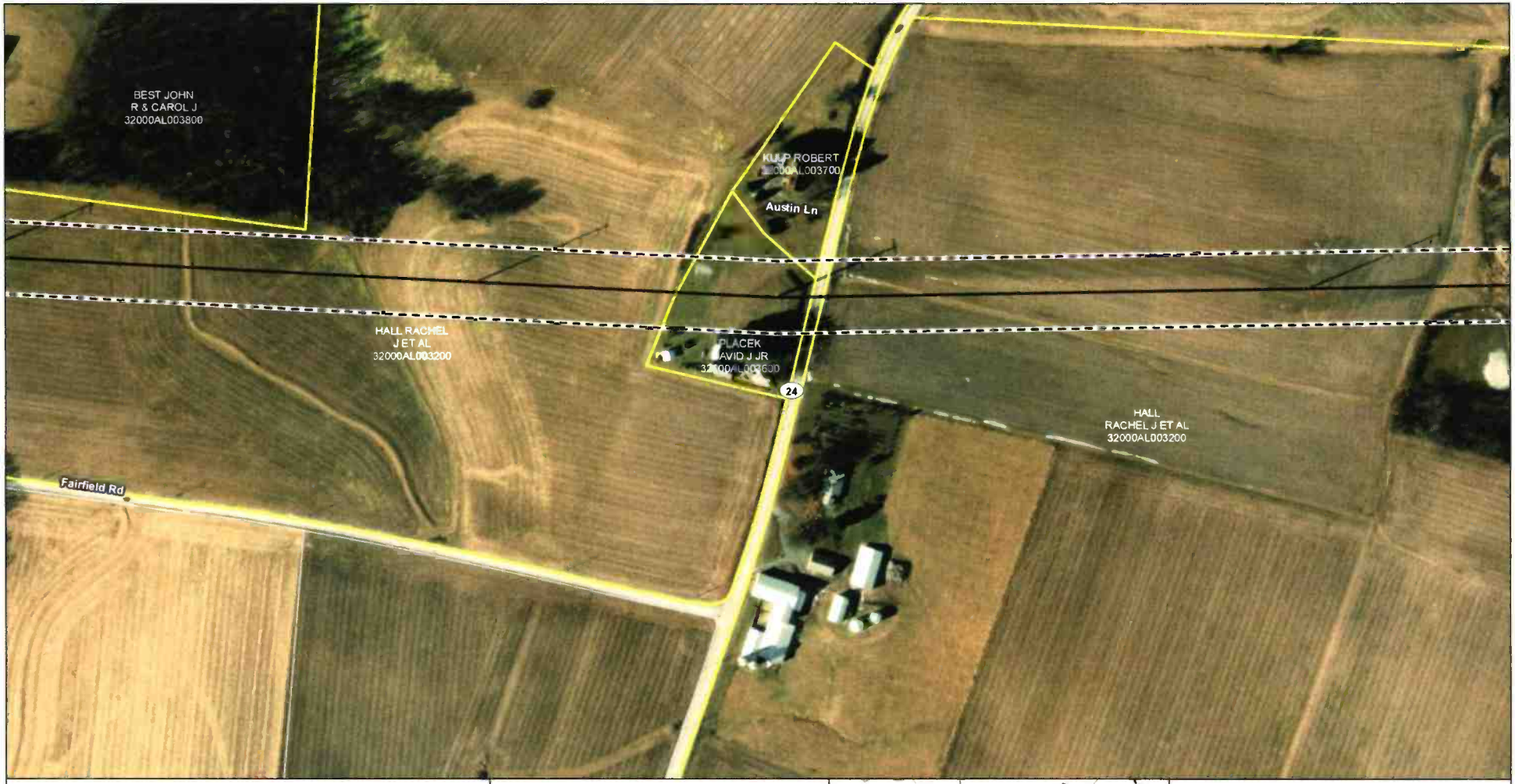
0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units. Meter

Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 21

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



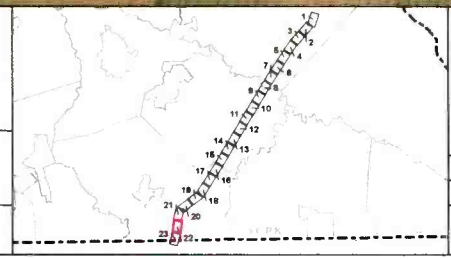
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

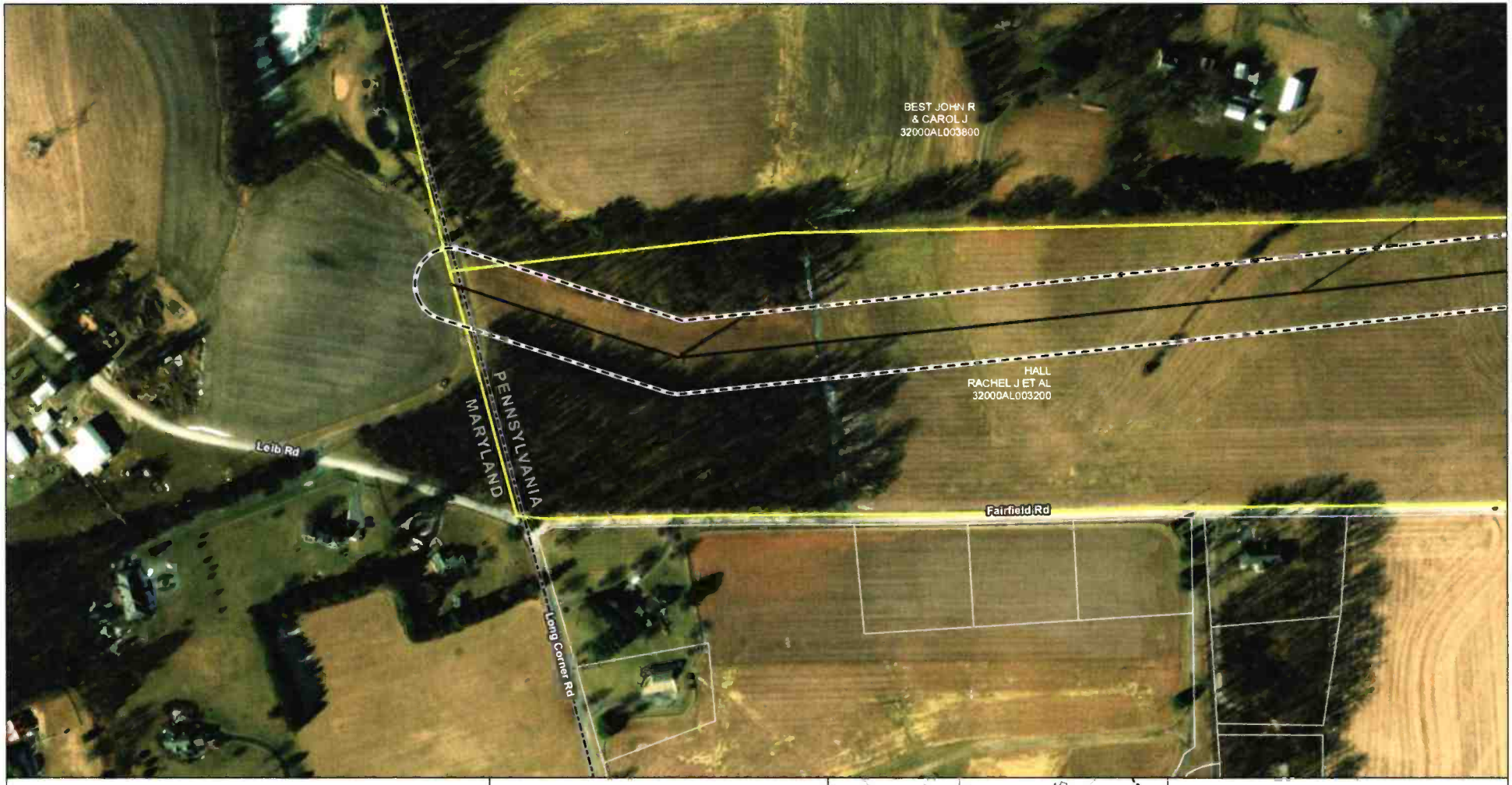
COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 22

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl



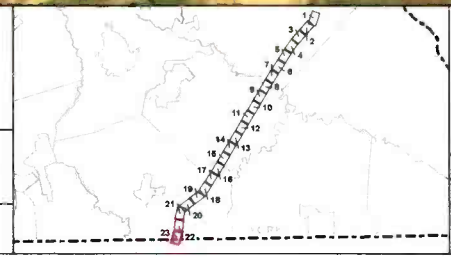
Legend

- Existing Otter Creek - Conastone 230 kV Transmission Line
- 150' ROW
- Existing Transmission Line
- Parcels Crossed by ROW
- Parcel Boundary
- Streams

REFERENCES:
Aerial Basemap (ESRI 2018)
York County (July 2019)

0 200 400 Feet

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator; Units: Meter



Otter Creek - Conastone 230 kV Transmission Line Project
Aerial Mapbook
Map Extent 23

Prepared By: BSF	Checked By: HB
Job: Furnace Run	Date: January 28, 2020

ppl

Appendix B: Alternative IEC East Portion 2 Mile Overview Drawing (Figure 7)

Legend

- Airports
- School
- Churches
- Cemeteries
- Alternative IEC East Portion
- 2 Mile Buffer

Existing Electrical Transmission Lines

- Less than 100 kV
- 115 kV - 230 kV
- Greater than 345 kV
- Gas Pipeline
- Railroad
- Stream
- NRHP Listed Above Ground Resource
- State Identified Above Ground Resource
- State Identified Above Ground Resource - Polygon
- Local Agricultural Preservation
- State Land
- PA Core Habitat of Biological Diversity Area
- Wetland

Disclaimer. Due to the sensitivity of archeological resources, their location is considered proprietary and is not included in this figure

Independence Energy Connection
Transource, LLC

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

COORDINATE SYSTEM:
NAD 1983 UTM Zone 18 North
Projection: Transverse Mercator, Units: Meter

REFERENCES:
Purple Power Map (2012)
Aerial Imagery (ESRI)

Baltimore MD | York PA | Harford MD

Figure 7
Alternative IEC East Portion
2 Mile Overview
of Sensitive Features - PA

Prepared By: NAB	Checked By: HB
Job: 60528995/60529006	Date: January 27, 2020

TRANSOURCE

SUPPLEMENTAL ATTACHMENT 4
DESIGN & ENGINEERING DESCRIPTION

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Figure 4-2 New Double Circuit 230kV Tension Light Angle
Figure 4-3 New Double Circuit 230kV Tension Heavy Angle
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1.0 Introduction

The Alternative IEC East Route is a collaboration between Transource Pennsylvania, LLC ("Transource PA") and PPL Electric Utilities Corporation ("PPL Electric") in Pennsylvania and Baltimore Gas and Electric ("BG&E") in Maryland. The Alternative IEC East Route involves, in part, adding a second circuit to sections of two existing PPL Electric-owned transmission lines, specifically the Otter Creek-Conastone and Manor-Graceton 230 kV lines. The capacity to add a second circuit was contemplated in PPL Electric's prior PAPUC Letter of Notification ("LON") for reconstruction of these lines[1]. Both lines extend south into Maryland where they interconnect with BG&E's facilities. BG&E will add a second circuit to their structures and terminate them into the existing Conastone and Graceton Substations. A full description of the Alternative IEC East Route was filed with the Settlement Agreements on October 17, 2019.

Both double-circuit transmission lines (Otter Creek- Conastone and Graceton- Manor) will tie into the new Furnace Run Substation, which is located on the same parcel as discussed in the previous Siting Study and Application by Transource. The Furnace Run Substation is located between the two existing transmission lines and immediately adjacent to an existing PPL Electric right-of-way ("ROW") corridor which currently contains a de-energized 69 kV transmission line (proposed "Furnace Run 230 kV ROW"). The Furnace Run 230 kV ROW corridor is comprised of undefined width easements, defined width easements and PPL Electric fee owned property. The corridor extends approximately 2 miles east and 2 miles west out of the Furnace Run Substation. Electrical connection between the existing PPL Electric 230 kV lines and the Furnace Run Substation requires the construction of three new 230 kV circuits within this corridor. The additional circuits will be supported by parallel monopole structures (one double-circuit transmission line adjacent to one single-circuit transmission line). Construction of these transmission lines requires additional easement rights to establish a consistent 225-feet wide corridor. These easement rights have been acquired by PPL Electric prior to the filing of this application. PPL Electric will remove the de-energized 69 kV transmission line towers and conductors. Overall, the Alternative IEC East Route will extend for 24 miles in Pennsylvania with only 4 miles requiring an expansion of the existing ROW corridor and installation of new structures.

2.0 Proposed Activities

Development of the Alternative IEC East Route will involve two distinct activities, specifically a) construction of the new Furnace Run 230 kV Transmission Lines, and b) the addition of a second circuit on a portion of the existing Otter Creek- Conastone and Manor-Graceton transmission lines. Construction of the new Furnace Run 230 kV Transmission Line will require

[1] See Dockets A-2011-2219913 and A-2011-2228595.

demolishing the existing 69 kV lattice tower structures along the approximately 4-mile long corridor, clearing portions of the existing ROW area to a consistent width of 225 feet, constructing a new parallel set of 230 kV monopoles, and installing the new conductor wires. Adding the new second circuit to the existing Otter Creek-Conastone and Graceton-Manor 230 kV transmission lines will require access to all of the existing structures south of the new tie in points to install the new conductor arms and then installing the new conductor wires.

2.1 Construction of the New Furnace Run 230 kV Transmission Lines

- New construction will be by tubular steel monopoles either direct embedded or on concrete foundations. There will be two separate steel pole lines in the same corridor, one will be double circuit and the other single circuit.
- Phase conductors will be 1590 kcmil ACSR in a single bundle arrangement. Overhead shield wires will be 0.752 OPGW fiber optic cables.

Figures of new 230 kV structure types (FIG 4-1 to 4-6)

Table 5-1 shows the design minimum conductor clearances and **Table 2** lists the conductor thermal ratings.

Condition	Transmission Double-Circuit Design Clearance-to-Ground
Heavy Ice (1" ice at 0°C ambient temperature)	30 feet
Predicted extreme thermal load (125°C conductor temperature)	30 feet
Predicted blowout (6 lbs., 16°C, ambient temperature)	30 feet

2.2 Addition of Second Circuit to Existing Transmission Lines

- The existing Manor-Graceton 230kV line will have four (4) additional arms installed per structure. At some two-pole angle structures an additional sister pole will be added.
- The existing Otter Creek-Conastone 230kV line will have three (3) additional arms installed per structure for the new conductor.
- The existing Manor-Graceton 230kV line will have three (3) additional 1590 kcmil ASCR conductors added and one (1) additional 0.752 OPGW shield wire.
- The existing Otter Creek-Conastone 230kV line will have three (3) additional 1590 kcmil

ASCR conductors.

Excerpts from the previously filed LONs depicting the existing structures are included at the end of this Attachment for reference. Original pages can be found at Dockets A-2011-2219913 and A-2011-2228595

Table 5-2: Conductor Thermal Rating 1590 kcmil 54/19 Stranding ACSR 125°C Maximum Conductor

Condition	Ambient Temperature (°C)	Wind Speed (Ft./sec)	Ampacity (Amps)
Summer Normal	35	0	1626
Winter Normal	10	0	1873
Summer Emergency	35	2.533	2013
Winter Emergency	10	2.533	2267

3.0 Specific Right of Way Requirements

The existing 69 kV corridor is comprised of a combination of PPL Electric-fee owned land and easements with widths ranging from undefined to 325 feet. The ROW for the existing 230kV transmission lines is 150 feet wide which is sufficient for the addition of the second circuit. The standard width for two parallel 230 kV transmission lines ROW width (225 ft). The 225 foot right of way is needed to prevent development from encroaching into the lines during blowout conditions (the distance the wires are moved by a crosswind) and to minimize potential impacts from trees. PPL Electric has obtained all required ROW needed for the Furnace Run section of the line.

A cross section of the proposed Furnace Run 230 kV ROW required for the Alternative IEC East Route is provided in **Figures 4-7**. Aerial maps of this route illustrating the centerlines of the new 230 kV line and identifying the properties that are traversed by the alignment are provided in **Attachment 3 – Appendix 1**. Additionally, a list of all persons owning property within the proposed ROW is included in **Attachment 5**.

4.0 Magnetic Field Management Plan

PPL Electric's Magnetic Field Management Program is included in **Attachment 10** and is applied to new and reconstructed transmission line projects. In order to lower magnetic field exposures, the program generally prescribes the use of a line design that provides ground clearances of five feet higher than the required minimum NESC ground clearance and reverse phasing of new double circuit lines where it is feasible to do so at low or no cost. The implementation of additional modifications will be considered, provided those modifications can be made at low or no cost and will not interfere with the operation of the line.

Consistent with its Magnetic Field Management Program, PPL Electric will construct the proposed 230 kV transmission lines for ground clearances that are a minimum of five feet higher than the required NESC minimum ground clearance for 230 kV lines. The new Furnace Run 230 kV Transmission Lines will have one set of structure built as a double-circuit design and a second set of structures build as a single-circuit design with the new conductor wires on one side

of the structure. PPL Electric will evaluate whether the new double circuit line and the existing lines where the double circuits will be added can be reverse phased during final engineering.

5.0 Construction Techniques and Execution for Typical 230 kV Transmission Structures

The following is a summary, non-technical explanation of the typical construction activity that is associated with new transmission line construction for single poles, which are either directly embedded into the ground or installed on a concrete foundation. This is not to be misconstrued as all-encompassing and may vary based on specific site/service conditions at each project. Actual construction steps may not necessarily occur in this particular order:

- The project manager will review the construction plans with PPL Electric personnel that will be constructing the line, including all permits and conditions that apply (such as erosion and sediment control, wetland encroachments, and storm water management), as well as any agreements made with specific property owners for work done on their lands.
- Professional land surveyors will stake the locations of all poles to be constructed, as well as the edge of ROWs and locate any wetland or streams previously sited during field work.
- All wetlands/waters are delineated in the field, located by land surveyors, and specifically shown to the construction manager prior to work commencing.
- During the installation of access roads, poles, and hanging of the wire, approved "best management practices" are implemented to assure that the soil will be stabilized and not erode during storm events while the Project is under construction. Any temporary wetland encroachments (usually roads) will be removed according to the permit conditions. Whenever practical, PPL Electric will utilize timber matting in wetland areas to minimize disturbance to the wetland vegetation and topography.
- Construction roads will be constructed, approximately 14 to 16 feet in width, with a stone surface to support the equipment that will be transporting materials to the pole sites. Those vehicles are usually cranes, concrete trucks (if foundations are involved), boom trucks, and pickups. The roads will be built as provided for in the construction drawings as per the erosion and sediment control plan, the NPDES permit plan, and/or the wetland encroachment permit plan. The plan may require these roads to be temporary in nature, returning to vegetative cover when the work is complete. Landowners may wish to have the roads remain intact for shared use between PPL Electric for line inspection and

maintenance and property owner use. Much of the routine maintenance to the line, once built, will be by helicopter or 4-wheel drive pickup truck.

- The direct embedded poles will be installed by the use of auger and then a crane. After the hole is drilled, usually 4 to 6 feet in diameter, the bottom section of pole is placed directly into the hole and backfilled with native soil or engineered material, then the remaining sections are installed along with any cross arms. A pole that is at an angle in the line, or for another specialized reason, may be required to have a concrete foundation. These foundations are seldom more than 12 feet in diameter and are filled with reinforced concrete. The top of the foundation may extend an average of 1 foot above the ground.
- Once the poles are in place along the line route, the wires will be installed using bucket trucks to attach the wires to each pole and equipment and manpower will be used to pull the wires along from pole to pole. Helicopter stringing/pulling may be utilized in restricted access or environmental sensitive areas.
- The project manager will oversee the stabilization of the site including the successful establishment of vegetation on all previously disturbed areas during construction.

FIGURE 4-1: New Double Circuit 230kV Suspension

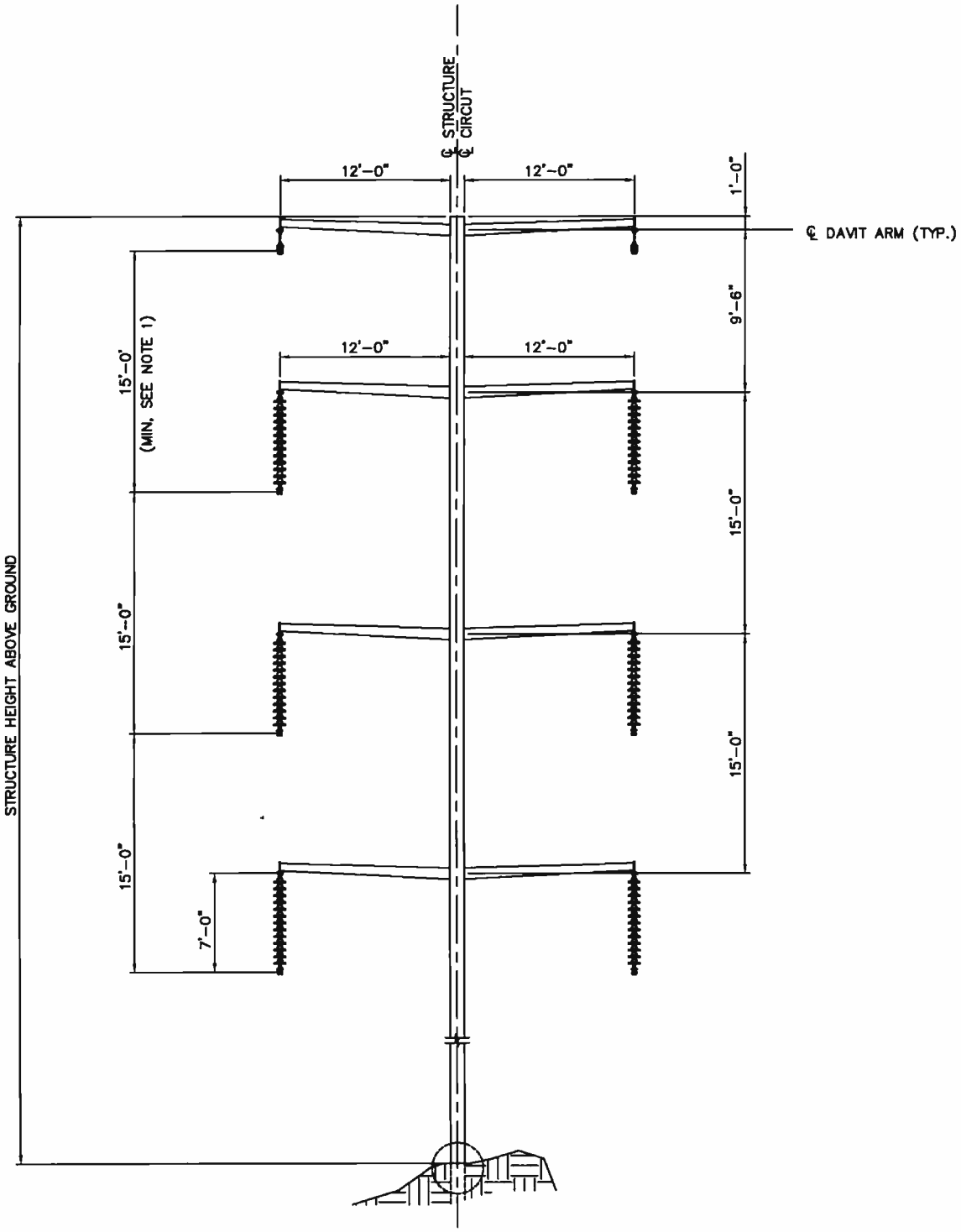


FIGURE 4-2: New Double Circuit 230kV Tension Light Angle

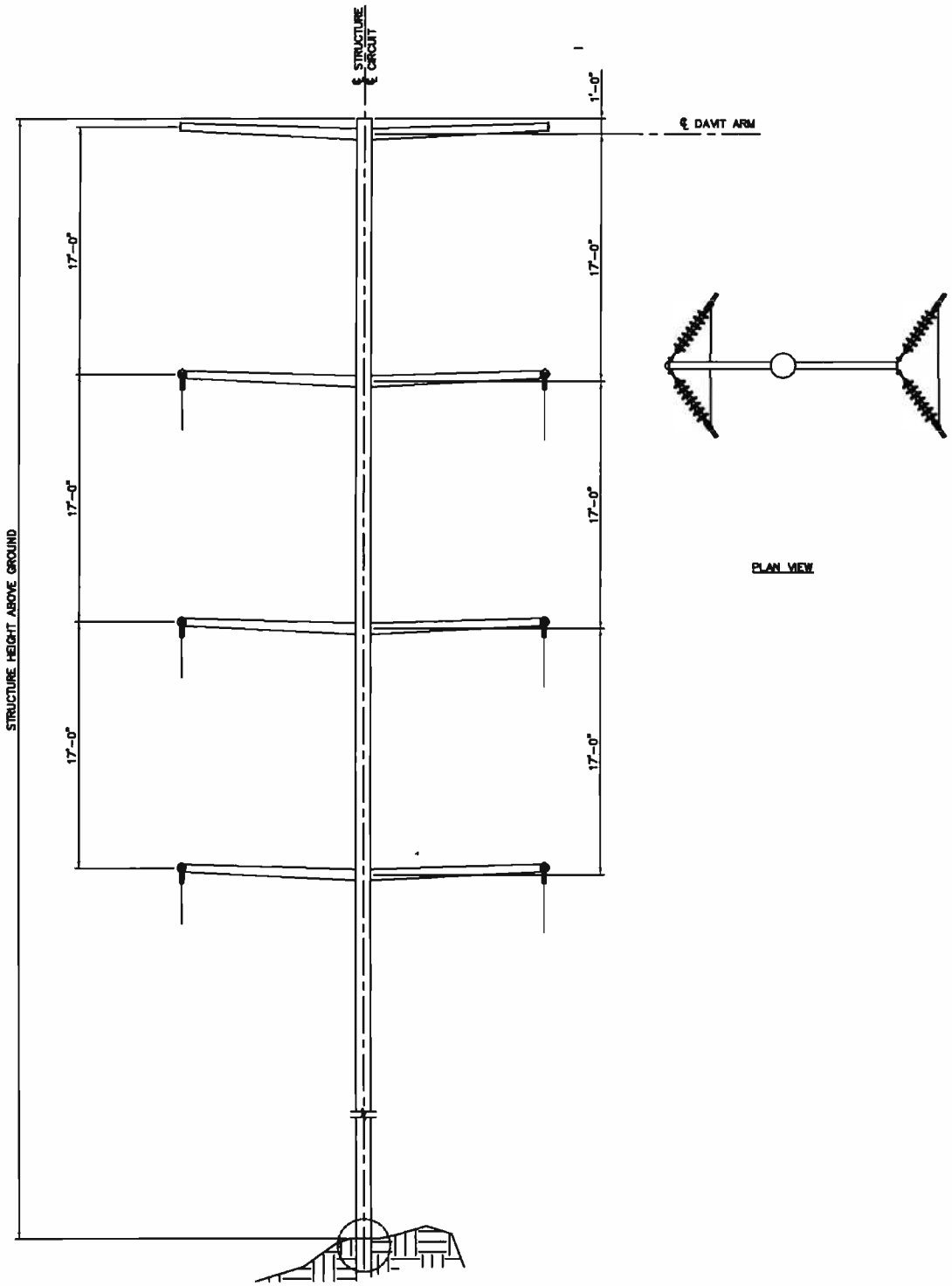


FIGURE 4-3: New Double Circuit 230kV Tension Heavy Angle

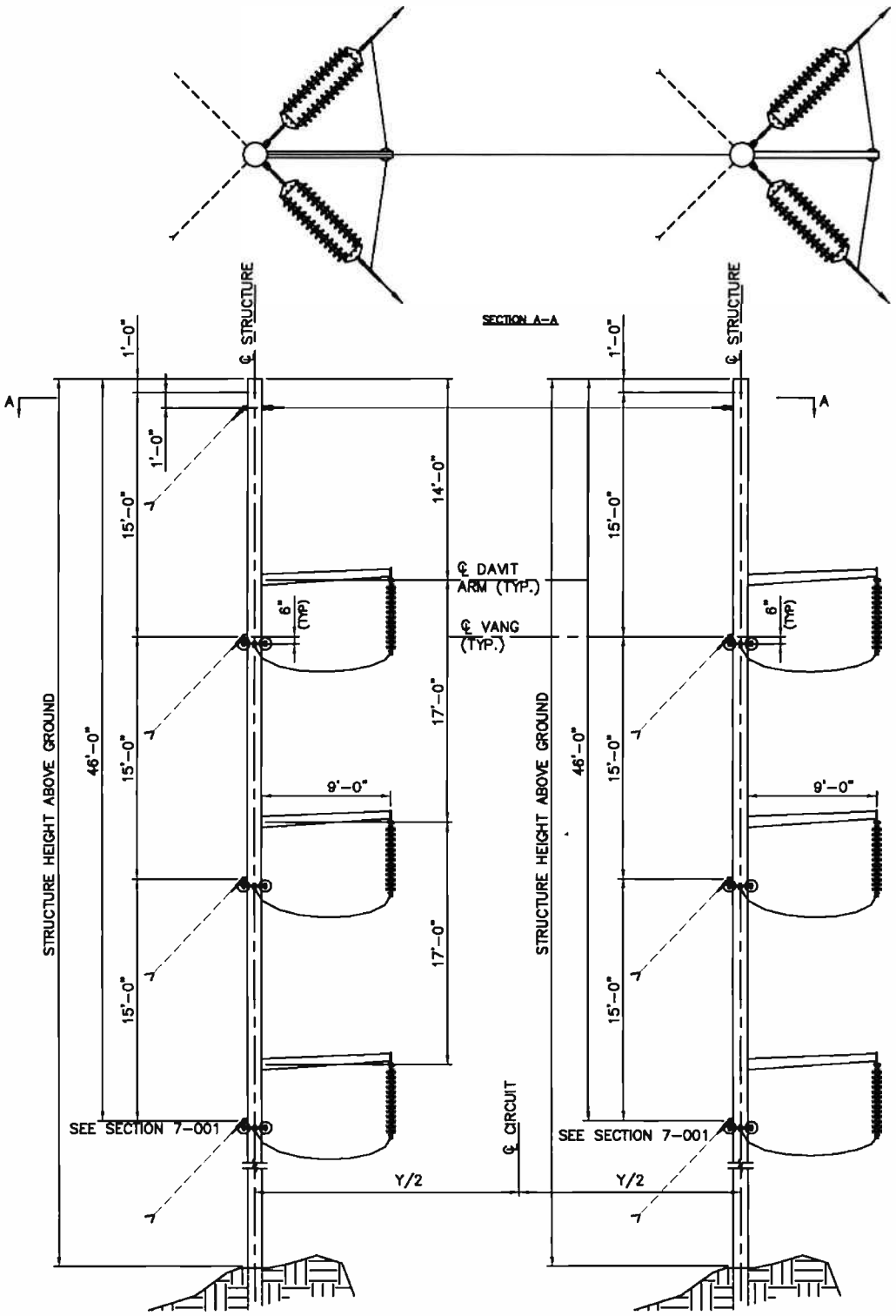


FIGURE 4-4: New Single Circuit 230kV Suspension

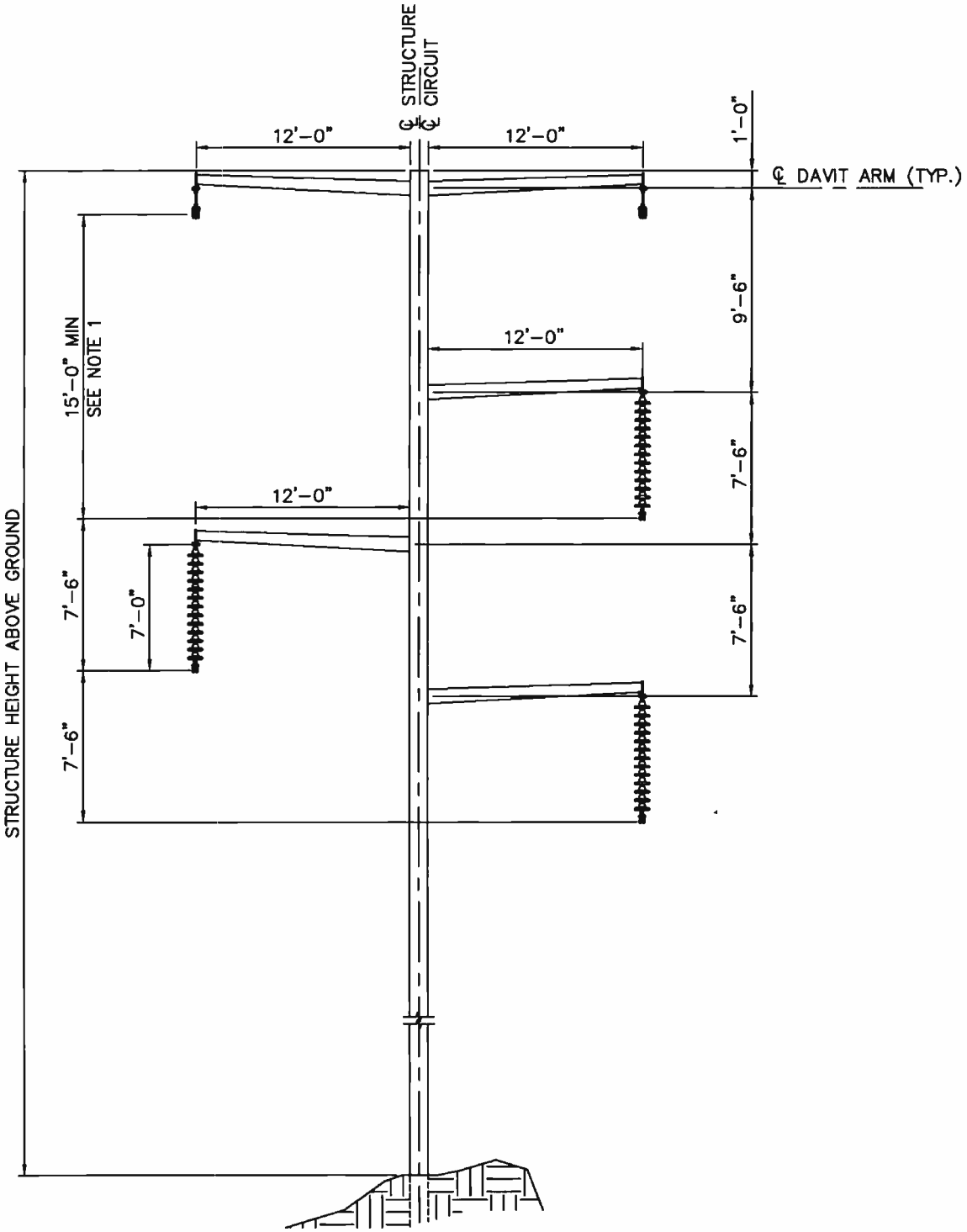


FIGURE 4-5: New Single Circuit 230kV Tension Light Angle

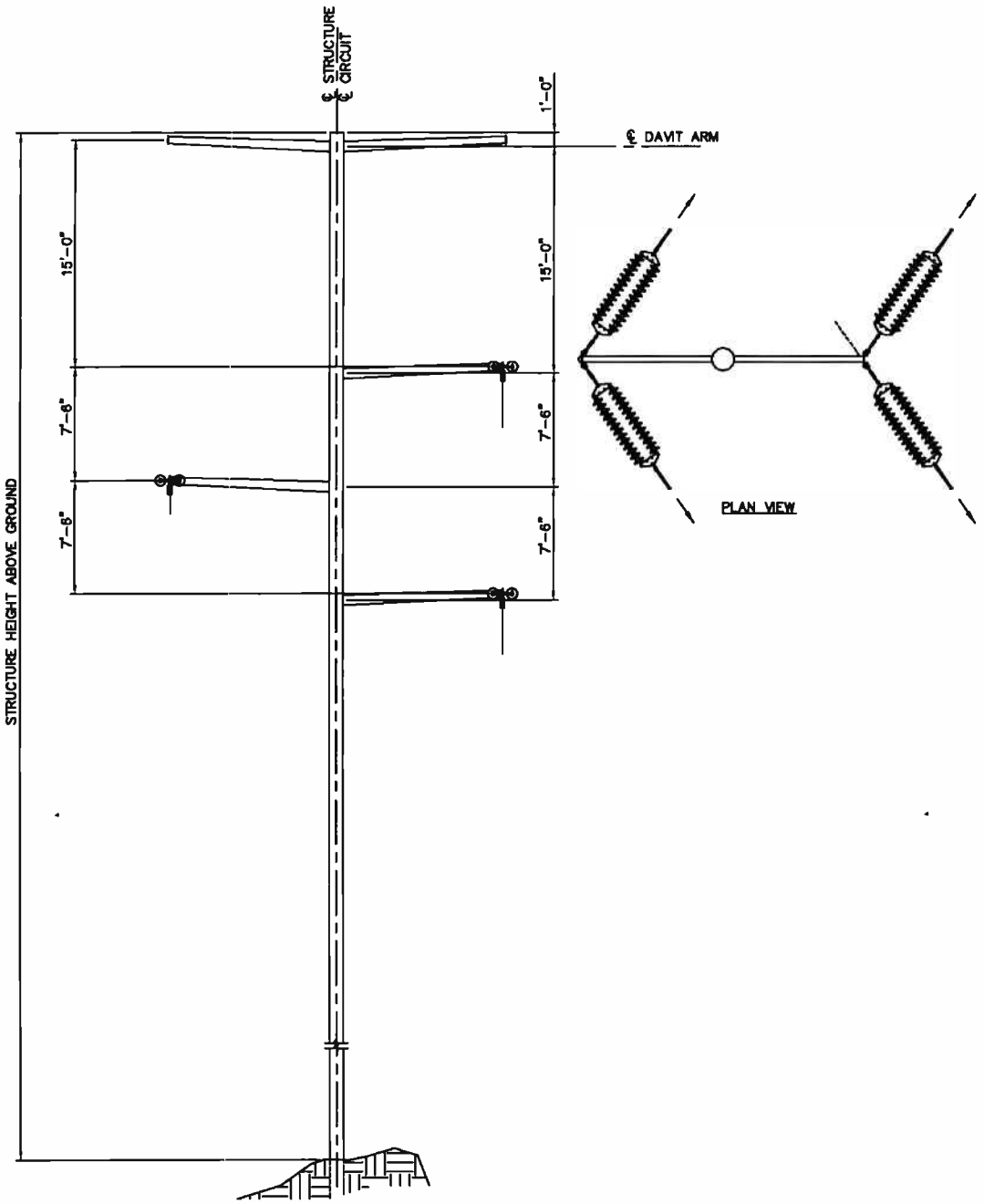
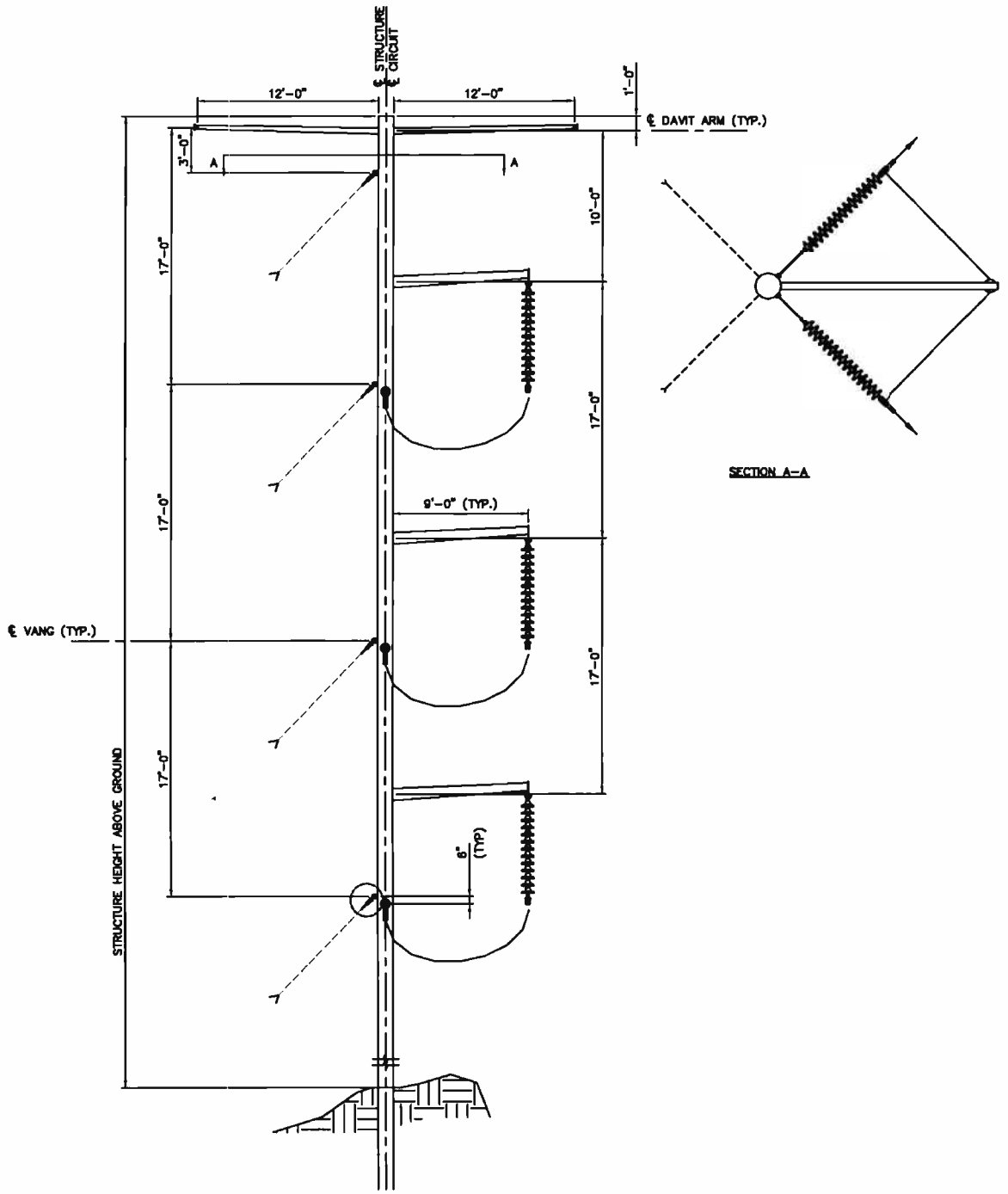


FIGURE 4-6: New Single Circuit 230kV Tension Heavy Angle



PPL Electric Utilities
Furnace Run 230 kV
Transmission Line Project
SUPPLEMENTAL ATTACHMENT 5 LANDOWNER LIST

Furnace Run 230 kV Transmission Line							
LANDOWNER	Tax ID#	Parcel ID#	ADDRESS	CITY	STATE	ZIP	County
CURRAN, DANIEL T.	21000FN001300	PA-YO-646417116-21000FN001300	13114 COLLINSVILLE RD	BROGUE	PA	17309-9167	York
DAUGHERTY, RALPH E. & ROBERT L.	21000FN000600	PA-YO-646417087-21000FN000600	12480 GAME CLUB RD	BROGUE	PA	17309-9166	York
KEENER, GERALD H. & DONNA Z.	21000FN005500	PA-YO-646417179-21000FN005500	325 RICHLAND DR	LANCASTER	PA	17601-3631	York
PISTOR, GLORIA J.	21000FN0055B0	PA-YO-646417182-21000FN0055B0	12985 COLLINSVILLE RD	BROGUE	PA	17309-8913	York
MILLER, LEVI R. JR & EMMA L.	21000FN0067A0	21000FN0067A00	12860 COLLINSVILLE RD	BROGUE	PA	17309-8911	York
RUNKLE, TOBY M. & BRENDA L.	21000FN006800	PA-YO-646417224-21000FN006800	164 CHANCEFORD RD	BROGUE	PA	17309-8932	York
ROHRER, DOUGLAS E. & MARTHA J.	34000FN0063A0	PA-YO-646466312-34000FN0063A0	1728 BRIDGE RD	LANCASTER	PA	17602-1804	York
ROHRER, DOUGLAS E. & MARTHA J.	34000FN0063E0	PA-YO-646466320-34000FN0063E0	1728 BRIDGE RD	LANCASTER	PA	17602-1804	York
MILLER, MERVIN S. & GLADYS O.	34000FN007500	PA-YO-646466322-34000FN007500	95 BURNS RD	BROGUE	PA	17309-9322	York
DRUCK, DAVID L. & CHRISTINE Y.	34000FN007700	PA-YO-646466334-34000FN007700	2243 WOODBINE RD	AIRVILLE	PA	17302-9405	York
STRUBEL, JUSTIN	34000FN0077E0	PA-YO-646466341-34000FN0077E0	49 GORAM RD	BROGUE	PA	17309-9316	York
JORDAN, MARK R. & TRACY L.	34000FN0077G0	34000FN0077G0	3362 DELTA ROAD	AIRVILLE	PA	17302-9329	York
JORDAN, MARK R. & TRACY L.	34000EN0027A0	PA-YO-646466079-34000EN0027A0	3362 DELTA RD	AIRVILLE	PA	17302-9329	York
JORDAN, TIMOTHY P. & RENEE	34000EN003000	PA-YO-646466089-34000EN003000	3340 DELTA RD	AIRVILLE	PA	17302-9329	York
DRUCK, THOMAS L. & MELISSA M.	34000EO006400	PA-YO-646466284-34000EO006400	207 E POSEY RD	AIRVILLE	PA	17302-9343	York
SMOKER, DOUGLAS R. & VONDA J.	34000EO006200	PA-YO-646466273-34000EO006200	3449 DELTA RD	AIRVILLE	PA	17302-9331	York
JOHNSON, T. EDWIN JR. & DORIS MAE	34000EO001800	PA-YO-646466197-34000EO001800	3527 DELTA RD	AIRVILLE	PA	17302-9373	York
LONG, SAMUEL S. & VICKIE W.	34000EO001900	PA-YO-646466199-34000EO001900	75 FURNACE RD	AIRVILLE	PA	17302-9336	York
KILGORE, R. LEON JR. & MARLENE J.	34000EO001100	PA-YO-646466169-34000EO001100	79 KILGORE RD	AIRVILLE	PA	17302-9370	York
BURTON, MARVIN H. & SHIRLEY M.	34000EO0009C0	PA-YO-646466164-34000EO0009C0	3737 DELTA RD	AIRVILLE	PA	17302-9276	York

PPL Electric Utilities
Furnace Run 230 kV
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ATTACHMENT 5 LANDOWNER LIST

Manor - Graceton 230 kV Transmission Line						
LANDOWNER	Tax ID#	ADDRESS	CITY	STATE	ZIP	County
CAUDILL, JAY D SR & SHARON SUE	34000DO0060B0	48 SALISBURY RD	AIRVILLE	PA	17302	York
CAUDILL, JAMES D & LENA M	34000DO0060C0	42 SALISBURY RD	AIRVILLE	PA	17302	York
JORDAN, ROBERT M & LOIS M	34000DO0005000	12640 COLLINSVILLE RD	BROGUE	PA	17309	York
SMITH, DANA M & KENNETH W JR	43000BO0019B0	37 WINDY FARM LN	DELTA	PA	17314	York
HAWKINS, MELANIE & MELANIE S	43000AO0024A0	384 HOLLOW RD	DELTA	PA	17314	York
DAVIS ,DONALD E JR	4300001031400	123 CLUBHOUSE RD	DELTA	PA	17314	York
GJERDAHL, JAMES M & REBECCA H	4300001031600	103 CLUBHOUSE RD	DELTA	PA	17314	York
LEMEN, ROBERT A & CAROLYN J	43000AO0002A0	578 COOK RD	DELTA	PA	17314	York
RENZI, VICTOR J JR & JANET L	43000BO0001900	63 WINDY FARM LN	DELTA	PA	17314	York
KNIGHT, PRISCILLA D	43000CO0023C0	322 MURPHY RD	AIRVILLE	PA	17302	York
PARROW, CHRIS A JR & JOAN L	43000CO0023D0	8133 WOODBINE RD	AIRVILLE	PA	17302	York
CAMPBELL, RAYMOND B & SHIRLEY F	43000CO0027D0	8178 WOODBINE RD	AIRVILLE	PA	17302	York
JORDAN, ROBERT M & LOIS M	34000DO004800	3932 DELTA RD	AIRVILLE	PA	17302	York
DALTON, WILLIAM F & RITA R	34000DO004700	3890 DELTA RD	AIRVILLE	PA	17302	York
WOODS, GENE A & LINDA L	34000DO0057B0	346 W TELEGRAPH RD	AIRVILLE	PA	17302	York
HOLMES, DANA E & VERNA E	34000DO0055A0	325 W TELEGRAPH RD	AIRVILLE	PA	17302	York
MCCOLLUM, JOE & KRISTA	43000AO0002B0	594 COOK RD	DELTA	PA	17314	York
BEILER, STEPHEN B & KATIE E	43000AO002300	4738 DELTA RD	DELTA	PA	17314	York
ESH, ISAAC F & LYDIA S	34000DO005400	150 ATKINS RD	AIRVILLE	PA	17302	York
BAIR, GEORGE N & JOAN L	34000DO0055B0	216 ATKINS RD	AIRVILLE	PA	17302	York
PENNA POWER & LIGHT CO ATTN REAL ESTATE TAXES GENTW2	43000BOY32800	2 N 9TH ST	ALLENTOWN	PA	18101	York
KOEPPER, JOSEPH H JR	34000CO003200	3135 WHITE HALL RD	WHITE HALL	MD	21161	York
HANNA, WILLIAM M JR & DONNA O	43000AO002400	2614 WHITEFORD RD	WHITEFORD	MD	21161	York
MCLAUGHLIN, RALPH I JR & YVONNE I	43000BO000400	1608 LANCASTER PIKE	QUARRYVILLE	PA	17566	York
BAUMAN, TYLER CHASE & JANAE ELIZABETH	34000DO006300	1277 BRIDGETON RD	AIRVILLE PA	PA	17302	York
COOPER, ROGER	34000CO004700	1154 FLINTVILLE RD	DELTA	PA	17314	York
TAYLOR, THOMAS L & ALAN D ET AL	34000CO003100	183 BUECKER RD	DELTA	PA	17314	York
VOGTMAN, ROBERT M & SUZANNE WALLETT VOGTMAN	4300002006100	101 W TRAILS RD	AIRVILLE	PA	17302	York
RYER, BRENT	4300002005900	6490 CABOT RD	DOVER	PA	17315	York
JULIUS, RYAN	4300002006200	2940 LEGACY LN	YORK	PA	17402	York
RIGGIO FOUNDATION HORSE RESCUE LLC ATTN MICHAEL N ROSEN BRYAN CAVE	43000CO002700	1290 AVENUE OF THE AMERICAS	NEW YORK	NY	10104	York
FRISONE, FABIO & FRANCO	43000CO0027A0	3983 OLD FEDERAL HILL RD	JARRETTSVILLE	MD	21084	York
LOMBARD,I ANTHONY J JR & D LYNNE	4300002006000	18 QUIVEYS GROVE TRL	ROMNEY	WV	26757	York
WARNE, PHILIP E	4300001031300	139 CLUBHOUSE RD	DELTA	PA	17314	York
MCFATRIDGE, AMANDA L & JORDAN E	34000CO0043C0	349 W TELEGRAPH RD	AIRVILLE	PA	17302	York
REHEARD, JAMES & CHONG S	34000CO0043G0	333 W TELEGRAPH RD	AIRVILLE	PA	17302	York
ESH, HENRY K & ELIZABETH H	34000DO0057A0	334 W TELEGRAPH RD	AIRVILLE	PA	17302	York
RYER, BRENT M	43000020001B0	6490 CABOT RD	DOVER	PA	17315	York
BROWN, CHRISTOPHER & MICHELBERGER JILL	4300001031500	PO BOX 182	PYLESVILLE	MD	21132	York
KILGORE, R LEON JR & MARLENE J	34000EO001100	79 KILGORE RD	AIRVILLE	PA	17302	York
BURTON, MARVIN H & SHIRLEY M	34000EO0009C0	3737 DELTA RD	AIRVILLE	PA	17302	York

PPL Electric Utilities
Furnace Run 230 kV
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ATTACHMENT 5 LANDOWNER LIST

Manor - Graceton 230 kV Transmission Line						
LANDOWNER	Tax ID#	ADDRESS	CITY	STATE	ZIP	County
CAUDILL, DALLAS F & MABLE J	34000DO0006000	162 REINECKE RD	AIRVILLE	PA	17302	York
EBERSOL, JOHN Z & ANNA K	34000DO0005300	119 REINECKE RD	AIRVILLE	PA	17302	York
ESH, ELAM H & ANNIE B	34000DO0005500	209 W TELEGRAPH RD	AIRVILLE	PA	17302	York
TAYLOR, THOMAS L & ALAN D ET AL	34000CO0043A0	183 BUECKER RD	DELTA	PA	17314	York
KNIGHT, PRISCILLA D	43000CO0002300	322 MURPHY RD	AIRVILLE	PA	17302	York
FRITSCH, DANIEL A & JUDY C	43000CO0002800	530 MURPHY RD	AIRVILLE	PA	17302	York
GEMMILL, ERIC M	43000CO0003000	125 MCCALL RD	DELTA	PA	17314	York
BILGER, DAVID S SR	43000BO0018A0	183 GEMMILL RD	DELTA	PA	17314	York
MILLER, AMOS H & MARY ANN	43000BO0001800	299 AUBEL RD	DELTA	PA	17314	York
METZLER, CRAIG A & JENNIFER K	43000BO0000200	1348 BRYANSVILLE RD	DELTA	PA	17314	York
GROSS BROTHERS	43000BO0045A0	749 GRACETON RD	FAWN GROVE	PA	17321	York
SACILOTTO, MICHAEL L & GERALDINE M	43000AO0002G0	1274 LINE RD	DELTA	PA	17314	York
HENDRZAK, JOHN P	43000AO0004500	533 HOLLOW RD	DELTA	PA	17314	York
JORDAN ROBERT M & LOIS M	34000EO0008A0	12640 COLLINSVILLE RD	BROGUE	PA	17309	York

PPL Electric Utilities
Furnace Run 230 kV
Transmission Line Project
ATTACHMENT 5 LANDOWNER LIST

Otter Creek - Constone 230 kV Transmission Line						
LANDOWNER	Tax ID#	ADDRESS	CITY	STATE	ZIP	County
BEST, JOHN R & CAROL J	32000AL003800	17092 FAIRFIELD RD	STEWARTSTOWN	PA	17363	York
DEHOF,F HARRY C & HEATHER M	32000BL001400	1553 WOOLEN MILL RD	STEWARTSTOWN	PA	17363	York
LITTLE, ALBERT F JR	32000BL0034B0	15339 LITTLE RD	STEWARTSTOWN	PA	17363	York
RAGLAND, MICHAEL R & JORDI R	25000CL0025L0	17529 LUTZ RD	STEWARTSTOWN	PA	17363	York
MARSTELLER, JEROMEY W & JOHN W SR	25000CL005100	10029 BLUE BALL RD	STEWARTSTOWN	PA	17363	York
THOMPSON, ELISABETH A	25000CM0005B0	10003 WHEAT RD	NEW PARK	PA	17352	York
HILLER, ROY E III & NORMA J	25000CM0005G0	9939 MANIFOLD RD	NEW PARK	PA	17352	York
RAGLAND, MICHAEL R & JORDI R	25000CL002500	17529 LUTZ RD	STEWARTSTOWN	PA	17363	York
GROVE, STEVEN E	25000DM0011B0	9078 MUDDY CREEK FORKS RD	NEW PARK	PA	17352	York
KNEAVEL, GUIDETTA ALICE	25000DM0049A0	14200 COLLINS SCHOOL RD	AIRVILLE	PA	17302	York
MANIFOLD, LYDIA M	25000DM005000	15655 VEACH RD	AIRVILLE	PA	17302	York
MOSER, CURTIS L & JANE	25000DM005200	9314 MUDDY CREEK FORKS RD	NEW PARK	PA	17352	York
HAKE, GLENN W & LINDA M	21000FN001400	2256 DELTA RD	BROGUE	PA	17309	York
PPL ELECTRIC UTILITIES CORPORATION	21000FN0013C0	2 N 9TH ST	ALLENTOWN	PA	18101	York
BARR, CHARLES T & JENNIFER L	32000BL001500	PO BOX 324	STEWARTSTOWN	PA	17363	York
LEACOCK PROPERTY MANAGEMENT LLC	25000DM001900	3774 E NEWPORT RD	GORDONVILLE	PA	17529	York
ELLIS, DAVID R & JENNIFER L	32000BL0001C0	14585 KILGORE ROAD	STEWARTSTOWN	PA	17363	York
MATHIAS, ADAM P & SHERRY A	25000CL0025M0	17510 LUTZ RD	STEWARTSTOWN	PA	17363	York
LEACOCK PROPERTY MANAGEMENT LLC	25000DM0049B0	3774 E NEWPORT RD	GORDONVILLE	PA	17529	York
GOCHENAUR, ROBERT H III & KAREN K	21000FN009100	3449 DELTA RD	AIRVILLE	PA	17302	York
KOLETSCHKE, GARY B & BURNS KOLETSCHKE HADDAS M	32000CL0023B0	7583 SETTING SUN LN	STEWARTSTOWN	PA	17363	York
JUNE L FLAHARTY IRREVOCABLE TR	21000EM005100	737 MUDDY CREEK FORKS RD	AIRVILLE	PA	17302	York
PLACEK, DAVID J JR	32000AL003600	20740 BARRENS RD S	STEWARTSTOWN	PA	17363	York
KULP, ROBERT	32000AL003700	20664 BARRENS RD S	STEWARTSTOWN	PA	17363	York
BENDER, EVELYN M-EST ATTN WENDY EBERSOLE	21000EM0053A0	2521 OAK KNOLL LN	YORK	PA	17403	York
MCINTURFF, BRUCE D & LYNDA J	21000EM005300	710 MUDDY CREEK FORKS RD	AIRVILLE	PA	17302	York
SHERWOOD, GEORGE D III & DOROTHY I	25000CL006100	154 FOREST TRL	DELTA	PA	17314	York
MCGINNIS, J ROSS TRUSTEE	21000EM0020B0	41 W MAIN ST	FAWN GROVE	PA	17321	York
GRACEY, DORIS R & R BENTLEY	25000EM0020C0	10662 GUINSTON RD	FELTON	PA	17322	York
CORBETT, LANE J & SANDRA W	21000EM004300	80 CORBETT LN	AIRVILLE	PA	17302	York
BARLEY FARMS LP	21000EN000400	175 CHESTNUT GROVE RD	CONESTOGA	PA	17516	York
WOLFORD, PATSY M & WOLFORD LORI A	21000EM006500	3447 SECHRIST RD	BROGUE	PA	17309	York
FLAHARTY, MICHAEL S & SHARON J	21000EM007100	3517 FLAHARTY RD	AIRVILLE	PA	17302	York
BARLEY FARMS LP	21000EM005000	175 CHESTNUT GROVE RD	CONESTOGA	PA	17516	York
MAPLE SPRING FARMS PARTNERSHIP	21000EM005200	175 FROSTY HILL RD	AIRVILLE	PA	17302	York
CURRAN, DANIEL T	21000FN001300	13114 COLLINSVILLE RD	BROGUE	PA	17309	York
ABEL, MICHAEL E	21000EM0043C0	137 RAG LN	AIRVILLE	PA	17302	York
FLAHARTY, CLYDE E & KAY E & WESLEY R	25000DM001200	9426 HIGH ROCK RD	NEW PARK	PA	17352	York
WARNER, JAMES P & NORMA J	25000DM0010D0	15917 HOPEWELL CENTER RD	NEW PARK	PA	17352	York
JORDON, GEORGE E & ELIZABETH C	25000CM000200	16291 GUN CLUB RD	NEW PARK	PA	17352	York
ARCHER, JANET C	25000CM000100	5300 ONION RD	PYLESVILLE	MD	21132	York

PPL Electric Utilities
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ATTACHMENT 5 LANDOWNER LIST

Otter Creek - Constone 230 kV Transmission Line						
LANDOWNER	Tax ID#	ADDRESS	CITY	STATE	ZIP	County
MYCHALUS, ANDREW I & FLORIO KATHLEEN	25000CM0001B0	10046 MANIFOLD SCHOOL RD	NEW PARK	PA	17352	York
GREEN VALLEYS FARMS	25000CM000300	16410 ROUND HILL CHURCH RD	STEWARTSTOWN	PA	17363	York
MARSTELLER, JOHN W JR	25000CM0005D0	16410 ROUND HILL RD	STEWARTSTOWN	PA	17363	York
MARSTELLER, JOHN W SR & MARY E	25000CL002600	16410 ROUND HILL CHURCH RD	STEWARTSTOWN	PA	17363	York
MEASLEY, ALVIN R & JOYCE A	25000CL0051A0	10107 BLUE BALL RD	STEWARTSTOWN	PA	17363	York
HD & HD PROPERTIES LLC	32000BL0014A0	1553 WOOLEN MILL RD	STEWARTSTOWN	PA	17363	York
CROUSE, JULIE & LANIUS TODD W & MOSER C RUTH LANIUS	32000BL000100	14210 KILGORE RD	STEWARTSTOWN	PA	17363	York
SCHMIDT, DAVID J & MARIANNE W	32000BL001900	1416 WOOLEN MILL RD	STEWARTSTOWN	PA	17363	York
ANDERSON, CONSTANCE Q & QUESENBERRY JAMES E JR	32000BL003200	6544 ANDERSON RD	STEWARTSTOWN	PA	17363	York
YOST, ALAN J	32000BL003100	16154 LITTLE RD	STEWARTSTOWN	PA	17363	York
ANDERSON, JAMES T & MABEL L	32000BL003400	6208 ANDERSON RD	STEWARTSTOWN	PA	17363	York
HAL,L RACHEL J ET AL	32000AL003200	487 PROBART ST	BREVARD	NC	28712	York
WOLFORD, PATSY M	21000EM006600	3447 SECHRIST RD	BROGUE	PA	17309	York
WOLFORD, PATSY M	21000EM0065A0	3447 SECHRIST RD	BROGUE	PA	17309	York
GROVE, ROBERT C & PATRICIA ANN	25000DM001100	9078 MUDDY CREEK FORKS RD	NEW PARK	PA	17352	York
BRUBAKER, ROBERT J JR & SENEKA C	25000CM0001A0	16488 GUN CLUB RD	NEW PARK	PA	17352	York
CHILCOAT, HARRY M AND SHIRLEY S REVOCABLE LIVING TRUST	25000CL0025K0	17792 LUTZ RD	STEWARTSTOWN	PA	17363	York
NEEPER, HEATHER L AKA WIEGAND HEATHER	25000CL002300	19838 HAUGH RD	STEWARTSTOWN	PA	17363	York

PPL Electric Utilities
Furnace Run 230 kV
Transmission Line Project
SUPPLEMENTAL ATTACHMENT 6 PRELIMINARY PERMIT MATRIX

Permit Jurisdiction	Status	Name of Permit, Approval, Review, License Type	Office/Agency Issuing Permit/ Approval/ Review	Review, Approval or Permit	Notes (When required)	Application Requirements	Estimated Application Submittal Date	Actual Application Submittal Date	Estimated Permit Issuance Date	Actual Permit Issuance Date
Federal										
Federal	Not Started	Section 404 of the Clean Water Act (CWA) , Section 10 of the Rivers and Harbors Act PASPGP-4 Associated with Chapter 105 Permits	U.S. Army Corps of Engineers (USACE), Baltimore District	Permit	Required for impacting jurisdictional wetlands and/or streams. Not currently known if federal permits will be required. This will depend on final pole locations and access road impacts. Permitting for non-tidal waters delegated to Pennsylvania. State Programmatic General Permits in place with USACE.	- Pre-construction Notification (PCN) or Joint Permit Application (JPA) - Wetland Delineation - Temporary and Permanent Wetland/Stream Impact Summary - Mitigation Evaluation	TBD	TBD	TBD	TBD
Federal	In Progress	Consultations under Section 7 of the Endangered Species Act Pennsylvania Natural Diversity Inventory (PNDI) Coordination Review	U.S. Fish and Wildlife Service (USFWS), Northeast Region (State College, PA field office)	Concurrence	Requires agency consultation if Section 404 permit required or if there is potential to impact federally listed species or their habitat. For PA, required through the PNDI process, USFWS will be contacted to provide information on threatened and endangered (T&E) species that may be within the project area.	- PNDI Results - Habitat Assessment - Species Specific Habitat Report - Potential impacts	TBD	TBD	TBD	TBD
Federal	Not Started	Federal Right-of-Way (ROW) Use/ Occupancy Permits	U.S. Department of Transportation (USDOT), Federal Highway Administration	Permit	For actions that impact Federal highway ROWs.	- Application - Location Figures - Access or Crossing Plans - Insurance and Bond Requirements	TBD	TBD	TBD	TBD
Federal	Not Started	FAA Notification (FAA Form 7460-1)	Federal Aviation Administration (FAA)	Notice of Proposed Construction	Must notify the FAA if structures will exceed 200 feet in height or if the structures are located within the distance to height ratio from the nearest point of the nearest FAA designated airport runway, including temporary use of cranes.	- Structure Heights and Elevations - Structure locations - Completion of Form 7460-1 (for each notice requirement)	TBD	TBD	TBD	TBD
State										
State	In Progress	Certificate of Public Convenience and Necessity (CPCN)	Pennsylvania Public Utility Commission (PAPUC)	Certificate	CPCN is authorized through the PAPUC in keeping with the requirements of 52 Pa. Code 57.72 for the siting and licensing of electric transmission lines.	- Routing Study - PUC Application & Exhibits - Waivers/Exemption requests	TBD	TBD	TBD	TBD
State	Not Started	PADEP JPA or GPs Wetlands and Water Obstructions (Chapter 105)	PADEP Bureau of Waterways Engineering and Wetlands (Southcentral Regional Office)	Permit	PADEP permits are required for activities in, along, or across watercourses, floodways, or bodies of water (incl. wetlands). At this time, it is hoped that General Permits and waivers may be applicable for this project, to avoid a Joint Permit Application, but this will depend on final pole locations and access road impacts.	- Chp 105 App. or JPA - Wetland Delineation - Temporary and Permanent Wetland/Stream Impact Summary - Mitigation Evaluation	TBD	TBD	TBD	TBD
State	Not Started	Floodplain Permit (Chapter 106)		Permit	PADEP floodplain permits are required for activities in, along, or across watercourses, floodways, or bodies of water (incl. wetlands).	- Chp 105/106 App. - Permanent/Temp. Floodplain Assessment - Location and Plan figures	TBD	TBD	TBD	TBD
State	Not Started	NPDES Permit and Post-Construction Stormwater Review (Chapter 102)		Notice/Permit	A permit and Erosion and Sediment (E&S) Control Plan are required when construction activities will include earth disturbances greater than or equal to one acre. An E&S Control Plan and Individual NPDES Permit will be required for the project. The process will require a review by the local County Conservation District (CCD) and approval by PADEP.	- Notice of Intent (NOI)/App. - Stormwater Mgmt Study - Stormwater calculations - E&S Control plan text and detailed figures	TBD	TBD	TBD	TBD
State	Not Started	Submerged Lands License Agreement (SLLA)		License/ Agreement	Projects that cross over/under a state-designated navigable waterway requires a SLLA with the PA DEP. Final need determined during review process.	- SLLA Form/App. - Location figure - Plan and Profiles Figure	TBD	TBD	TBD	TBD

PPL Electric Utilities
Furnace Run 230 kV
Transmission Line Project
ATTACHMENT 6 PRELIMINARY PERMIT MATRIX

Permit Jurisdiction	Status	Name of Permit, Approval, Review, License Type	Office/Agency Issuing Permit/ Approval/ Review	Review, Approval or Permit	Notes (When required)	Application Requirements	Estimated Application Submittal Date	Actual Application Submittal Date	Estimated Permit Issuance Date	Actual Permit Issuance Date
State	In Progress	Pennsylvania Natural Diversity Inventory (PNDI) Review - Pennsylvania Fish and Boat Commission (PFBC)	Pennsylvania Fish and Boat Commission (PFBC)	Concurrence	As required through the PNDI process, PFBC may need to be contacted to provide information on threatened and endangered (T&E) species that may be within the project area.	- PNDI Results - Habitat Assessment - Species Specific Habitat Report - Potential impacts	TBD	TBD	TBD	TBD
State	In Progress	Pennsylvania Natural Diversity Inventory (PNDI) Review - Pennsylvania Game Commission (PGC)	Pennsylvania Game Commission (PGC)	Concurrence	As required through the PNDI process, PGC will be contacted to provide information on T&E species that may be within the project area.	- PNDI Results - Habitat Assessment - Species Specific Habitat Report - Potential impacts	TBD	TBD	TBD	TBD
State	In Progress	Pennsylvania Natural Diversity Inventory (PNDI) Review- Pennsylvania Department of Conservation and Natural Resources (DCNR)	Pennsylvania Department of Conservation and Natural Resources (DCNR)	Concurrence	As required through the PNDI process, DCNR will be contacted to provide information on T&E species that may be within the project area.	- PNDI Results - Habitat Assessment - Species Specific Habitat Report - Potential impacts	TBD	TBD	TBD	TBD
State	Not Started	Cultural Resources Consultation under Section 106 of the NHPA or State Law PHMC Cultural Resources Consultation	Pennsylvania Historical and Museum Commission (PHMC)	Clearance	A PHMC review of the potential cultural resources in the project area will be required due to the level of earth disturbance and potential for Section 106 NHPA compliance.	- Background review - Field Survey - Background and Field Survey Report - Summary of Historic Properties Affected - Photos and Figures	TBD	TBD	TBD	TBD
State	Not Started	PennDOT Minimum Use Driveway (MUD) Permits	Pennsylvania Department of Transportation (PennDOT)	Permit	May require coordination with PennDOT for state roadways. Project will likely require MUDs for accessing project area from state roadways.	- Applications (with landowner sig.) - Location Figures - Access Plans - Online Submittal/Reg. Certification	TBD	TBD	TBD	TBD
State	Not Started	PennDOT Highway Occupancy Permits (HOP) Permits	Pennsylvania Department of Transportation (PennDOT)	Permit	May require coordination with PennDOT for state roadways. Nonlimited access roadways may not require crossing permits.	- Applications - Location Figures - Plan and Profile figures - Online Submittal/Reg. Certification	TBD	TBD	TBD	TBD
Local										
Local	Not Started	Notification letter of work. May require E&SC Plan review, and maybe road crossing permits.	PA Townships	Permits	Transmission lines may still be required to obtain driveway permits, road crossing permits, and may be required to have the township review the E&S Control Plans.	- Application - Location Figure - Typical driveway detail - Plan and Profile Crossing drawings	TBD	TBD	TBD	TBD

SUPPLEMENTAL ATTACHMENT 7
LIST OF GOVERNMENTAL AGENCIES, MUNICIPALITIES AND OTHER PUBLIC ENTITIES RECEIVING THE APPLICATION

RECIPIENTS OF FULL SITING APPLICATION

State Agencies

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

Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1925

Bureau of Investigation and Enforcement
Pennsylvania Public Utility Commission
P.O. Box 3265
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17105-3265

Office of Small Business Advocate
Commerce Building
300 North Street, Suite 1102
Harrisburg, PA 17101

County Agencies

York County Planning Office
28 East Market Street
York, PA 17401
Contact: Felicia Dell, Planning Director; Wade Gobrecht, Assistant Director; Kurt Leitholf, Chief, Municipal Planning Division

Municipalities

Lower Chanceford Township
4120 Delta Rd.
Airville, PA 17302
Contact: Sue Wiley, Zoning Officer

Chanceford Township
33 Muddy Creek Forks Road
Brogue, PA 17309
Contact: Jeffery Koons, Zoning Officer

Hopewell Township
3336 Bridgeview Rd
Stewartstown, PA 17363
Contact: Keith Hunnings, Code Enforcement Officer

Peach Bottom Township
6880 Delta Road, Suite 3
Delta, PA 17314
Contact: Frank Diamond, Chairman, Planning Commission

East Hopewell Township
8916 Hickory Road
Felton, PA 17322-8102
Contact: Dean H. Miller, Chairman

NOTICE OF FILING RECIPIENTS

Federal Agencies

U.S. Army Corps of Engineers
Baltimore District
Regulatory Branch
1631 South Atherton Street
Suite 102
State College, PA 16801
Contact: Wade Chandler, Chief Pennsylvania Section

U.S. Fish and Wildlife Service
PA Field Office Northeast Region
110 Radnor Rd, Suite 101
State College, PA 16801
Contact: Robert Anderson

U.S. Environmental Protection Agency – Region 3
1650 Arch Street
Mail Code: 3RA00
Philadelphia, PA 19103
Contact: Cosmo Servidio, Regional Administrator

State Agencies

Pennsylvania Department of Transportation

Keystone Building
400 North St., Fifth Floor
Harrisburg PA 17120
Contact: Leslie S. Richards, Secretary of Transportation

Pennsylvania Department of Conservation and Natural Resources
400 Market Street, 6th floor
Rachel Carson State Office Building
Harrisburg, PA 17105
Contact: Ellen Shultzabarger, Division Chief

Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Ave.
Harrisburg, PA 17110
Contact: Rod Nesmith, Regional Director

Pennsylvania Fish and Boat Commission
1601 Elmerton Ave.
Harrisburg, PA 17106
Contact: John Arway, Executive Director

Pennsylvania Game Commission
8627 William Penn Highway
Southcentral Region
Huntingdon, PA 16652
Contact: Bryan Burhans, Executive Director

Pennsylvania Department of Agriculture
2301 North Cameron Street
Suite G-6
Harrisburg, PA 17110
Contact: Douglas M. Wolfgang, Director

Pennsylvania Historical & Museum Commission
400 North Street, 2nd floor
Commonwealth Keystone Building
Harrisburg, PA 17120
Contact: Andrea Bakewell Lowery, Executive Director, Andrew MacDonald, Bureau Director

Property Owners

See list in Attachment 5.

SUPPLEMENTAL ATTACHMENT 8
LIST OF GOVERNMENTAL AGENCIES, MUNICIPALITIES AND OTHER PUBLIC ENTITIES CONTACTED

Federal Agencies

U.S. Fish and Wildlife Service
PA Field Office Northeast Region
110 Radnor Rd
Suite 101
State College, PA 16801
Contact: Robert Anderson

U.S. Department of Agriculture
National Resource Conservation Service
359 East Park Drive, Suite 2
Harrisburg, PA 17111
Contact: Hathaway Jones, Management Analyst

Refer to the Transource PA's December 2017 Siting Application (Docket A-2017-2640195) for a comprehensive Attachment 8 for all entities contacted as part of the IEC East Siting Study.

SUPPLEMENTAL ATTACHMENT 9
LIST OF LOCATIONS APPLICATION CAN BE VIEWED BY THE PUBLIC

Collinsville Community Library
2632 Delta Road
Brogue, Pennsylvania 17309

Mason Dixon Public Library
250 Bailey Drive
Stewartstown, Pennsylvania 17363

PPL ELECTRIC UTILITIES CORPORATION

SUPPLEMENTAL ATTACHMENT 10
DESIGN CRITERIA AND SAFETY

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1.0 DESIGN CONSIDERATIONS

PPL Electric Utility Corporation's ("PPL EU") new and rebuilt transmission lines are designed according to, and generally exceed, all National Electric Safety Code ("NESC") minimum standards. The NESC is a set of rules to safeguard people during the installation, operation, and maintenance of electric power lines. The NESC contains the basic provisions considered necessary for the safety of employees and the public. Although it is not intended as a design specification, its provisions establish minimum design requirements. PPL EU has developed design specifications and safety rules which meet or surpass all requirements specified by 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 mechanical 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 are designed to maintain public safety.

PPL EU's transmission line design standards meet or surpass the NESC clearances and loading requirements.

For example, the NESC specifies strength and loading rules based on three different "grades of construction" for conductors and supporting structures:

- Grade B – This grade of construction provides the highest margin of safety and is required when the pole supports spans that cross limited access highways, railroads, and waterways.
- Grade C – This grade of construction is most common and provides a basic margin of safety. It is often utilized for the typical power and joint-use distribution pole.
- Grade N – This is the lowest grade of construction and is most often used for emergency and temporary construction.

PPL EU designs all of its transmission lines for Grade B construction. The use of Grade B design and construction translates to higher levels of structural reliability and safety to withstand the environmental conditions of ice and/or wind loading, which provides a higher margin of safety.

Another example of PPL EU's rigorous design standards are the parameters utilized to account for ice and wind loadings on the wires and structure. Structure loading and line designs must accommodate a variety of operating conditions as different ice and wind combinations can impact the conductor sags and tensions of the line. PPL EU's transmission lines are designed to exceed NESC requirements by accounting for additional load cases due to various ice and wind loading conditions not required by NESC. This means that PPL EU lines are designed to operate safely and reliably during extreme inclement weather. In addition, PPL EU design standards include a clearance to ground buffer in excess of NESC required clearances to account for construction and design tolerances and the filling or grading of land within the right of way by property owners. This buffer also significantly reduces the risk of a property owner inadvertently contacting a transmission line. This has occurred on PPL's system in the past and higher clearances minimize the likelihood of future occurrences.

TABLE 4-1: 69 kV Vertical Clearance to Ground

Surface Underneath Conductors	NESC Standard Clearance	PPL Conductor Clearances
Roads, streets, alleys	19.2 Ft.	22.2 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	19.2 Ft.	22.2 Ft.
Spaces accessible to pedestrians only	15.2 Ft.	22.2 Ft.
Railroad tracks	27.2 Ft.	30.2 Ft.

TABLE 4-2: 138 kV Vertical Clearance to Ground

Surface Underneath Conductors	NESC Standard Clearance	PPL Conductor Clearances
Roads, streets, alleys	20.6 Ft.	23.6 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	20.6 Ft.	23.6 Ft.
Spaces accessible to pedestrians only	16.6 Ft.	23.6 Ft.
Railroad tracks	28.6 Ft.	31.6 Ft.

TABLE 4-3: 230 kV Vertical Clearance to Ground

Surface Underneath Conductors	NESC Standard Clearance	PPL Conductor Clearances
Roads, streets, alleys	22.5 Ft.	25.5 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	22.5 Ft.	25.5 Ft.
Spaces accessible to pedestrians only	18.5 Ft.	25.5 Ft.
Railroad tracks	30.5 Ft.	33.5 Ft.

TABLE 4-4: 500 kV Vertical Clearance to Ground

Surface Underneath Conductors	NESC Standard Clearance	PPL Conductor Clearances
Roads, streets, alleys	28.4 Ft.	31.4 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	28.4 Ft.	31.4 Ft.
Spaces accessible to pedestrians only	24.4 Ft.	31.4 Ft.
Railroad tracks	36.4 Ft.	39.4 Ft.

A relay protection system is also used on PPL EU's transmission lines to protect the public safety, as well as the equipment on the transmission system. Relay protection is installed for all 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.

2.0 PERIODIC MAINTENANCE PROGRAM ON ALL TRANSMISSION LINES

To ensure continued public safety and integrity of service, a periodic maintenance and inspection program is implemented for every transmission line. The program is administered through the use of helicopter patrols, with supplemental foot patrols as needed. Helicopter patrols are performed on all lines on a predetermined frequency, depending on voltage level. The two-man helicopter crew flies parallel and above the line so that the observer can look for signs of line damage or deterioration and observe clearances between vegetation and conductors. The observations are included in a report that is forwarded to the appropriate department for corrective action.

3.0 PERSONNEL SAFETY RULES

Overall PPL EU designs and constructs projects with high regard for both public and employee safety, and follows or exceeds all codes and requirements. The following are a few, but not all, of the PPL EU safety rules that demonstrate the Company's dedication to employee and contractor safety:

- Work procedures have been developed 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, the Energy Control Process system is applied. This system provides that 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 or contractors will not apply or remove a tag or change the status of tagged equipment unless authorized.

- Temporary safety grounds are used on de-energized facilities for employee lineman 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.
- 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.
- Poles or structures are inspected and examined 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.

4.0 MAGNETIC FIELD MANAGEMENT PLAN

PPL EU's Magnetic Field Management Program is applied to new and reconstructed transmission line projects. In order to lower magnetic field exposures, the program generally prescribes the use of a line design that provides ground clearances higher than the required minimum NESC ground clearance and reverse phasing of new double circuit lines where it is feasible to do so at low or no cost. The implementation of additional modifications to reduce magnetic field levels, are considered, provided those modifications can be made at low or no cost and will not interfere with the operation of the line.

PPL ELECTRIC UTILITIES SPECIFICATION FOR TRANSMISSION VEGETATION MANAGMENT

LA-79827-13

EFFECTIVE JANUARY 1, 2019

Prepared by Nicholas E. D'Amico – Regional Forester

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1.0 PURPOSE/SCOPE

This document outlines the methods and procedures for Vegetation Management (VM) activities associated with the establishment and maintenance of PPL Electric Utilities Corporation (PPL EU) transmission circuits operating at or above 69 kilovolts.

2.0 RESPONSIBILITY

All Contractors performing vegetation maintenance activities on PPL EU rights-of-way or adjacent areas shall have a thorough knowledge of PPL EU specifications. A copy of this and other appropriate specifications (provided by the Contractor) must be on the work site at all times. The Contractor shall make reasonable accommodations for non-English speaking employees.

The Contractor Shall:

- Take the necessary safety precautions to prevent injury to human life or damage to property and shall carry on its operations with a minimum of interference to traffic or inconvenience to the public.
- In the event of an on the job injury or Contractor caused electrical interruption follow the procedures outlined in the most recent version of the following documents:

"Vegetation Management Contractor Reporting Requirements for Safety Incidents or Property Damage"
or
"Vegetation Management Contractor Reporting Requirements for Electrical System Events"

- Follow all applicable rules and regulations of federal, state, and local agencies.
- Report to PPL EU without intentional delay, any and all accidents or incidents resulting in injury to workmen or the public or property damage.
- Complete all work as specified by PPL EU and as documented in easement agreements.
- Notify PPL EU of any changes which may be required to work schedules including property owner requests.
- Make changes to work schedules only upon PPL EU authorization.
- Provide all supervision, labor and equipment necessary for the execution of the work. All personnel must be adequately trained in safety and vegetation management techniques including species identification. PPL EU Authorized Representatives reserve the right to reject any personnel or equipment that do not meet PPL EU standards.
- Maintain copies of all permits obtained by PPL EU on the job site.
- Be responsible for obtaining and maintaining copies of all local permits on the job site.
- Keep all roads open to traffic, as per the most recent revision of The Pennsylvania Department of Transportation Publication 213 (Temporary Traffic Control Guidelines).

- Be familiar with all designated wetlands within any job site and keep mechanical equipment outside any such designated wetlands unless specifically approved by a PPL EU Environmental Professional[1]. Upon approval by the PPL EU Environmental Professional, vehicles may only be taken into wetlands by using existing roads or through the use of temporary matting.
- Obtain prior consent from a PPL EU Environmental Professional before traversing any access roads which have been restored by PPL EU or any PPL EU Contractors.
- Re-grade and seed any deep cuts, ruts, stump holes, mounded areas, or general soil disturbance caused by the vegetation management operations when, in the opinion of the PPL EU Authorized Representative, they could cause future ground erosion, interfere with line access or have otherwise caused property damage.
- Without intentional delay, restore and stabilize (e.g. rake out, seed, and mulch) any earth disturbance created during vegetation management activities. If the earth disturbance results in an agency inspection or formal complaint, the PPL EU Environmental professional shall be notified by phone within 4 hours of the event.
- Clean up all debris and rubbish resulting from work as the work progresses, leaving the area in a condition satisfactory to the PPL EU Authorized Representative.
- Take precautions to preserve all survey stakes, hubs, and property corners. Those destroyed shall be replaced at Contractor's expense.
- Without intentional delay, repair or replace all fences or gates damaged by Contractor at Contractor's expense.
- Take adequate care to assure that gates are not left open. If existing fences or gates along a right-of-way are in a state of disrepair prior to the start of clearing, the property owner shall be so notified. In all cases the Contractor shall close and lock all gates behind them.
- Submit weekly transmission crew locations to the PPL EU Transmission System Operator.
- Submit daily crew locations to the Regional PPL EU Authorized Representatives.

3.0 APPLICABILITY

The provisions outlined in this specification and additional referenced documents within shall be the primary methods and procedures implemented by all Contractors performing vegetation management activities directly or indirectly for PPL Electric Utilities. Changes to PPL EU Vegetation Management specifications may be made from time to time in order to stay current with business objectives and regulatory environments. Changes to PPL EU Vegetation Management specifications shall be made at the sole discretion of PPL EU. Any deviation from PPL EU Vegetation Management methods and procedures must be approved in writing by a PPL EU Authorized Representative or the PPL EU Manager of Vegetation Management.

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[1] A link to PPU EU Environmental Professional areas of responsibility by county is located on the PPL EU Vegetation Management Contractor Portal.

4.0 ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
CARC	Line Clearance Maintenance Program: Completion Acceptance Report by Circuit
DEP	Department of Environmental Protection
E&S	Erosion and Sedimentation
EU	Electric Utilities
FAC-003	NERC Standard for Transmission Owner Vegetation Management
FERC	Federal Energy Regulatory Commission
GF	General Foreman (Contractor Representative)
IROL	Interconnection Reliability Operating Limit
kV	kilovolt = 1000 volts
MVCD	Minimum Vegetation Clearance Distance
NERC	North American Electric Reliability Corporation
NPDES	National Pollutant Discharge Elimination System
OGC	Office of General Counsel
OSHA	Occupational Safety and Health Administration
PA	The Commonwealth of Pennsylvania
PPL EU	PPL Electric Utilities Corporation
RMC	Records Management Coordinator
ROW	Right-of-way
TCC	Transmission Control Center
TSO	Transmission System Operator
TVMP	Retired Document replaced with "PPL Electric Utilities FAC-003 Transmission Vegetation Program Document"
VM	Vegetation Management
WSZ	Wire Security Zone
WZ/BZ	Wire Zone / Border Zone

The term "Contractor" refers to a business, employee, or agent thereof executing vegetation management activities under contract for PPL EU in accordance with this specification and all other applicable PPL EU policies and procedures.

The term "PPL EU Authorized Representative" refers to an individual is who given authority by the PPL EU Manager of Vegetation Management to make decisions and perform quality assurance inspections on behalf of PPL EU.

5.0 PROPERTY OWNER NOTIFICATION AND REFUSALS

The Contractor shall be responsible for notifying all property owners and other stakeholders of their intent to perform vegetation management activities unless such notification has been completed and provided in writing to the Contractor by PPL EU.

5.1 General Notification Requirements

- Contractor personnel directly involved in contacting customers are required to have identification, complete with photograph associating them with their employer and/or must possess a PPL EU Contractor Employee badge issued by PPL EU[2]. Identification shall be prominently displayed while engaged in customer contact activities.
- The Contractor may begin operations only after notification to proceed is received from PPL EU.
- The Contractor shall furnish proof of notification to PPL EU upon request.
- Refusals shall be referred to a PPL EU Authorized Representative.

5.2 Property Owner Refusal Process

The following process shall be followed when required clearances cannot be achieved on any transmission line as a result of a property owner refusal. **In all cases, the Contractor may not negotiate any work that is below PPL EU specifications.**

- Following initial property owner notification by the Contractor, if a property owner refuses to allow the Contractor access to the property to perform needed VM work, the Contractor will notify the responsible PPL EU Authorized Representative and prepare a written Line Clearance Refusal Form.
- The Contractor will secure a copy of the appropriate right-of-way (ROW) agreement if applicable to determine PPL EU's rights and will provide a copy of the agreement to the landowner if necessary.
- The Contractor General Foreman (GF) or Supervisor will then make an additional attempt to resolve the property owner refusal within two weeks. The GF/Supervisor shall make every effort to successfully resolve the refusal before turning it over to PPL EU.
- PPL EU Authorized Representatives may negotiate with landowners however all negotiations must result in the maintenance of adequate line clearance throughout the vegetation management cycle length.
- If the property owner still refuses to allow PPL EU to perform the necessary work, a letter will be sent from PPL Corporation's Office of General Council (OGC) to the property owner reiterating PPL EU rights and setting a date/time when the work will be performed.
- If the property owner still offers resistance, further legal assistance/guidance will be requested within PPL EU and OGC.

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[2] Refer to Contractor Badging Process in the latest version of PPL EU Vegetation Contractor Orientation document.

5.3 Notification of State[3] and Federal Agencies[4]

All planned vegetation management activities on state and federal lands shall be identified by the Contractor before the beginning of the annual contract start date. For each work location the easement language shall be reviewed by the Contractor to identify restrictions. If the land is under license agreement, the Contractor will prepare all appropriate notification materials including draft permit applications for PPL EU review. The PPL EU Authorized Representative shall submit the final application to the federal/state agency. Vegetation Management activities may not commence until PPL EU receives confirmation from the applicable agency that all notification and permit requirements have been achieved. Any Contractor who begins work on state or federal land without the express permission of the land manager and the PPL EU Authorized Representative will be responsible for paying all applicable fines as well as being subject to possible contract termination.

6.0 CLEARING REQUIREMENTS

6.1 General Requirements

All re-clearing and herbicide treatments performed on PPL EU rights-of-way must adhere to the following requirements:

A. The entire transmission corridor width shall be treated in accordance with the voltage hierarchy concept.

Voltage Hierarchy in a Common Corridor

Vegetation management work within transmission corridors containing multiple PPL EU facilities shall be maintained following the schedule for the highest operating voltage circuit that is energized within the corridor. During the maintenance cycle for the highest voltage circuit in a corridor, all circuits within the transmission corridor shall be maintained during the highest voltage cycle. When lower voltage circuits are undergoing cycle maintenance, any portion of a lower voltage circuit occurring within a corridor containing a higher voltage circuit shall be passed over and therefore maintained when the highest voltage circuit is scheduled.

Example 1: A 230kV circuit runs parallel with a 69kV circuit for 15 spans. If the 230kV circuit is scheduled for maintenance then the entire corridor is managed. If the 69kV circuit is scheduled, the portion of the 69kV circuit within the common corridor area is not maintained until the 230 kV vegetation management cycle

[3] State Agencies include but are not limited to Pennsylvania Game Commission and Pennsylvania Department of Conservation and Natural Resources – Bureau of Forestry

[4] All work within the National Park Service - Delaware Water Gap National Recreation Area is subject to the provisions of the latest version of the PPL EU Vegetation Maintenance and Condition Monitoring Plan for Susquehanna – Roseland.

Example 2: Multiple transmission circuits of the same operating voltage run parallel for 10 spans, there are no higher voltage circuits within the corridor. Since the circuits are of the same operating voltage, the higher numbered circuit shall be the ruling circuit within the corridor. The corridor shall be managed following the schedule of the ruling circuit until such a time that a higher operating voltage circuit is energized within the common corridor.

In all cases every circuit within a transmission corridor shall be treated at the same time.

B. Any vegetation, which could grow into the Wire Security Zone (defined in Table1), shall be treated to remove the potential hazard[5]. Treatment could involve cutting to ground line, and or applying herbicides, depending on easement and site restrictions.

C. Trees shall be felled in a manner that minimizes damage to those trees and/or shrubs which are to be preserved. All stumps shall be cut as low to the ground as practical. Stumps shall be cut parallel to the ground with no sharp splinters or points remaining. Where existing usable fences are attached to trunks of trees to be felled, the trees shall be cut at a length approximately 6" above the top wire strand, unless otherwise specified. The continuity of all electric fences shall be maintained. All stumps shall be treated with the appropriate herbicide for species and site conditions.

Table 1
Right-of-Way Clearing Widths and Minimum Conductor-to-Vegetation Clearances

Line Voltage	Desired Clearing Width[6]	Wire Security Zone	Minimum Acceptable Clearance[7] Under / Around
69-138 kV	100'	7'	22'/ 13'
230 kV	150'	14'	25'/ 18'
500 kV	200'	17'	32'/ 23'

[5] No corrective remediation pruning actions required for encroachments of "under" WSZ where compatible species or annual seasonal crops are in the WSZ to the extent vegetation is not expected to encroach into the MVCD. Species acceptability shall be confirmed through on site review by vegetation management personnel to determine that vegetation growth has been maximized or dead and that the vegetation presents no threat that MVCD could be breached. See the latest version of PPL Electric Utilities FAC-003 Transmission Vegetation Program Document.
[6] Some lines may have agreements specifying different widths. It is not the practice of PPL EU to clear adjacent un-used rights-of-way beyond the clearing widths listed.
[7] Where possible, these distances are the Minimum Acceptable Clearances at time of maintenance where pre-existing agreements do not allow the full implementation of wire zone-border zone management.

D. Hazard and Danger Trees

To ensure reliability, vegetation management operations must extend to trees located outside the clearing widths given in Table 1. Hazard trees are a subset of danger trees as defined in ANSI standards (ANSI 300 Part 7). Accordingly, ***a danger tree*** is any tree on or off the right-of-way which would either strike the conductor or pass within the minimum conductor clearances noted in Table 2. ***A hazard tree is*** a danger tree which is structurally unsound and therefore presents an increased risk to safety and reliability. A PPL EU Authorized Representative will work with vegetation management Contractors to approve the removal of hazard trees during line clearing/maintenance operations.

Table 2
Clearance for Hazard and Danger Trees

Line Voltage	Hazard and Danger Tree Clearance (Minimum Clearance for Falling Vegetation)[8]
69-230 kV	5'
500 kV	10'

Hazard Trees are defined as trees having one or more of the following characteristics:

1. Decay, cankers, and or hollows present in the main trunk of the tree.
2. Animal and or mechanical damage present in the main trunk of the tree showing visible signs of decay to the extent that it affects its structural integrity.
3. Disease and or insect damage that has affected the tree to such an extent that the trees survival to the next maintenance cycle is in doubt.
4. Root systems exposed to such an extent that the integrity of the tree is reduced.
5. Leaning and or over-crowned trees that cannot be pruned without removing their tops.
6. Splits and or cracks that are to such an extent that the splitting is affecting the integrity of the tree. Trees with Horizontal cracks should be made a high priority for removal.
7. Dead or dying trees that can strike the conductor or pass within the minimum conductor clearances shall be removed.
8. Species known to be weak wooded and or poorly rooted and therefore prone to an increased risk of failure.
9. All co-dominant stems should be considered for removal

[8] Additional clearance to be added to total tree height when assessing hazard and danger trees to prevent flashover.

6.2 Initial Clearing of a New Right-of-Way or Transmission Line Rebuild

When initially clearing a transmission corridor for a new transmission circuit or transmission line rebuild, all vegetation shall be cleared from the limits of the right-of-way with the exception of grasses and herbaceous or non-woody plants. This is necessary to both establish the extent of the new right-of-way and to accommodate the many construction activities that will occur within the right-of-way to install new foundations, tower structures, and conductors. After the initial clearing of a new right-of-way, PPL EU shall maintain the right-of-way in accordance with §6.3.

Initial clearing of a new right-of-way must adhere to these requirements:

A. All vegetation shall be cleared from the limits of the right-of-way with the exception of herbaceous or non-woody plants. Any mowed areas shall be treated with an appropriate cut stubble application wherever easement rights and regulation allow. Any vegetation that is hand cut shall be treated with the appropriate herbicide whenever easement rights and regulation allow. All debris shall be handled in accordance with the provisions of this document, or as specified by a PPL EU Authorized Representative, and/or by applicable agreements.[9][10]

B. The edge of the right-of-way shall be trimmed "Ground to Sky". Ground to sky means that all branches overhanging into the easement area shall be removed. All required tree pruning shall conform to the latest approved edition of ANSI Z133 Safety Standards, ANSI A-300 Plant Maintenance, and OSHA 1910.269 as a minimum to assure safety and industry standards are maintained.

C. All off corridor hazard trees shall be removed including edge trees which cannot be properly pruned to the standards outlined above.

D. All stumps and hardwood brush which have not been mechanically removed shall be treated with herbicides to prevent the growth and regrowth of non-compatible vegetation. All applications shall be made under the direction of PA Certified Commercial Pesticide Applicators and done in accordance with product labels and all applicable laws. Herbicide applications may be applied during the following growing season upon mutual agreement of the vegetation Contractor and PPL EU.

E. When required, off right-of-way access roads and structure pad sites shall be cleared of all vegetation. This clearing shall be specified by project management personnel.

F. While general clearing activities (e.g. maintenance) do not generally require job specific environmental permits, the clearing of a new right-of-way will often be done as part of a larger capital job with unique environmental permits. Unless specifically directed otherwise by the PPL EU Environmental Professional, the vegetation clearing contractor will need to review and ensure compliance with any constraints or limitations detailed in the site specific permit (i.e. General NPDES, General Permit, Joint Permit, etc.).

[9] Exceptions for ravine crossings are described in item D of § 6.3.1of this document.
[10] Wetland Vegetation Management is described in § 7.4 of this document.

6.3 Vegetation Cycle Maintenance for Existing Circuits

6.3.1 Wire Zone/ Border Zone

The Wire Zone/ Border Zone (WZ/BZ) method of managing transmission rights-of-way is the preferred vegetation management method of PPL EU. Wire Zone/ Border Zone shall be applied where the WZ/BZ method is not explicitly prohibited by easement restriction.

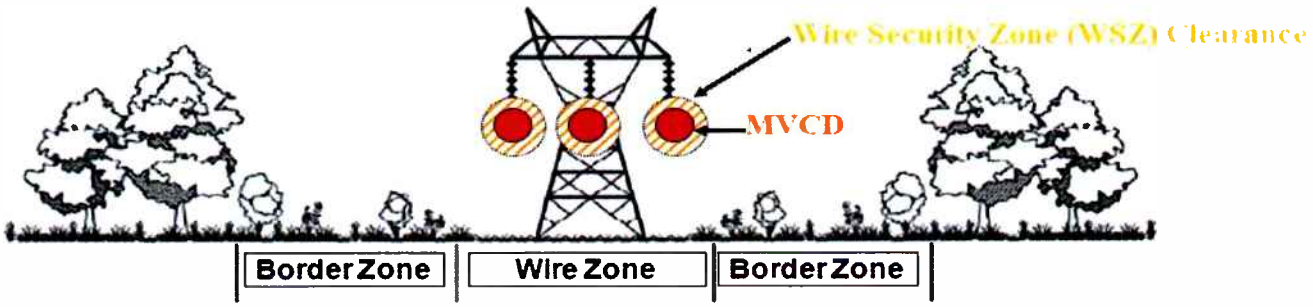
A. The ***Wire Zone*** is defined as that area of the right-of-way corridor that extends from the centerline to a distance ten (10) feet from the outer most conductors. All woody stems shall be controlled in the wire zone. Only Grasses, Ferns, and Herbaceous Plants may be preserved in the Wire Zone.

B. The ***Border Zone*** is defined as that area of the right-of-way corridor that extends from the limits of the Wire Zone to the limits of the easement boundary. Low growing trees and shrubs may be preserved in the border zone.

C. The area outside the easement boundary shall be managed for Hazard Trees.

D. The only exception to the above applies to non-compatible trees growing in ravines, gullies, or on side hills where topography is such that vegetation at a species maximum height will never encroach into the maximum sag wire security zone. In those areas non-compatible species may be preserved across with entire corridor at the desecration of the PPL EU Authorized Representative.

Wire Zone – Border Zone Concept[11]



[11] MVCD – Minimum Vegetation Clearance Distance required to prevent flashover according to FAC-003. MVCD is less than WSZ and shall not be interpreted as an acceptable line clearance at the time of maintenance.

Where wire zone/ border zone cannot be applied due to an existing documented easement restriction or other limitation such as a documented site or environmental concern, the following procedures may be utilized as appropriate to the site conditions present.

6.3.2 Selective Clearing

A. All compatible species[12] shall be preserved to the greatest extent possible. Those, which would violate the wire security zone before the next scheduled treatment, shall be removed[13].

B. Any species that exhibits growth characteristics which may violate PPL EU clearances in its lifetime are considered a "non-compatible species" and shall be removed to the greatest extent possible.

C. All trees and brush, both compatible and non-compatible species, shall be removed from access roads (15' width), work areas (stringing cuts, vegetation disposal areas, structure erection areas), and within a 15' perimeter of a tower or immediately adjacent to any structure location. Exceptions may occur where compatible landscaped plantings have been propagated adjacent to facilities and these plantings do not interfere with accessibility to such facilities.

D. Selective clearing is an acceptable practice for 69 kilovolt transmission lines which are not designated as an element of an IROL (Interconnection Reliability Operating Limit).

6.3.3 Restricted Clearing

A. All compatible species shall be preserved, wherever possible. Those which would violate the wire security zone before the next scheduled treatment shall be pruned or removed to obtain required "Minimum Acceptable Clearance" (defined in Table 1).

B. Any non-compatible species, which have violated or would violate the wire security zone before the next scheduled treatment shall be removed.

C. The remaining non-compatible species shall be preserved until the time comes when they can no longer be effectively pruned to maintain line clearance throughout the vegetation management maintenance cycle. This means that smaller (young) trees

[12] Compatible species guidelines are located in the "attachments" section of this document.
[13] No corrective remediation pruning actions required for encroachments of "under" WSZ where compatible species or annual seasonal crops are in the WSZ to the extent vegetation is not expected to encroach into the MVCD. Species acceptability shall be confirmed through on site review by vegetation management personnel to determine that vegetation growth has been maximized or dead and that the vegetation presents no threat that MVCD could be breached.

of non-compatible species are temporarily retained. As an adequate compatible cover becomes established over time, these non-compatible species shall be removed.

D. All trees and brush—both compatible and non-compatible—shall be removed from access roads, work locations, or near structures, as described under Selective Clearing.

6.3.4 Centerline Agreements

Some PPL EU rights-of-way may be described under what is referred to as a Centerline Agreement. Centerline Agreements establish the location of the centerline of the right-of-way; however they do not define the total width of the easement or the distance from the centerline to the edge of the right-of-way.

A. Rights-of-way with centerline agreements shall be cleared to the existing large tree edge or at a minimum to 20' from the outmost conductor, whichever distance is greater.

B. Any tree at or beyond the large tree edge with limbs encroaching within 20' of the outermost conductor shall be pruned back to the main stem from ground to sky.

C. The PPL EU Vegetation Management Department shall notify the PPL EU Transmission ROW Department of all transmission corridors exhibiting cleared widths below PPL EU desired widths listed in Table 1.

6.3.5 Tree Pruning

Tree pruning for apical clearance is only considered when specified within the language of pre-existing right-of-way agreements and may only be undertaken with PPL EU authorization. Removal of vegetation that poses a clearance concern is the preferred method of management.

All trees will be pruned by the guidelines detailed in the most current revision of the American National Standard for Tree Care Operations (ANSI A300). All pruning cuts should be made back to lateral branches at least one-third the diameter of the limb being removed or to the branch collar of the parent stem.

Every effort shall be made during the pruning process, to prevent damage to surrounding property and/or the tree itself. Tree gaffs or hooks will not be permitted in any maintained yard tree to be pruned. They will, however, be permitted in any tree to be removed or in forest trees to be pruned, unless objected to by the property owner.

6.4 Wetland Vegetation Management

Wetlands are defined in Section 404 of the Federal Clean Water Act and PA DEP's Chapter 105 regulations as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions including swamps, marshes, bogs, and similar areas.

Note: Wetlands may have standing water, have plants that are adapted to wet conditions, and/or contain hydric soils. Not all wetlands have visible water or classic wetland plants (i.e. cat tails) so it is imperative the wetland surveys are completed and the areas noted on the plans and/or in the field. The contractor shall use a combination of the National Wetlands Inventory and actual field observations to make a final wetlands determination.

- "Drop and lop" (see § 7.2 of this document) shall be the preferred method for the disposal of woody debris in wetlands. The intention of drop and lop is to minimize impacts to the wetland by leaving woody debris where it falls.
- Special care will be made to ensure that felled trees, logs, slash, brush, and chips do not impede any running water or seasonally dry waterways or drainage culverts. Slash will be compacted in such a manner that it will not be carried away by high water.
- Mechanical Equipment shall not be used in wetlands unless specifically approved by a PPL EU Environmental Professional. Upon approval by the PPL EU Environmental Professional, vehicles may only be taken into wetlands by using existing roads or through the use of temporary matting.

7.0 DISPOSITION OF CLEARED VEGETATION

The procedures and equipment used for the disposition of cleared vegetation should minimize disturbance to both the right-of-way soil cover and to the vegetation that is to remain within the right-of-way. All disposal operations shall closely follow (by no more than 3 days) clearing operations to keep work confined to one area and to prevent unsightly and unsafe conditions. Wind Rowing as described below, shall be the preferred method of debris disposition unless otherwise specified by a PPL EU Authorized Representative or as required by site conditions or permit restriction.

7.1 Wind Rowing

A. Timber Piles (6" or larger in diameter)

- All timber shall be placed in neat piles along the edge of the right-of-way, away from areas of preserved compatible vegetation. Under normal conditions timber piles will be interspersed with slash piles.
- Timber shall be stacked in tree length piles unless otherwise specified, in piles not greater in length than the longest tree length. A separation of at least 10' shall be provided on either side of each pile.

- All access roads, trails and streams (including their banks) shall be kept clear. Piling shall not be done where piles would be highly visible from any improved road.
- When working in a floodway or floodplain, all timber piles shall be placed on the side of the ROW furthest from the river/water source to the greatest extent possible.

B. Slash Piles

- All slash (i.e., trees less than 6" in diameter, tree tops, and limbs) shall be stacked in flattened mounds along the edge of the right-of-way, away from areas of preserved compatible vegetation.
- Slash piles shall be dressed of excessively protruding limbs and compacted to keep visual obstruction to a minimum. Generally, they should not exceed 5-6' in height, except where site conditions are such that higher piles are acceptable (e.g., depressions, rough terrain in remote areas). Compaction of piles may be facilitated by use of equipment employed in the associated clearing operation.
- The length of a slash pile should not be any greater than a tree length timber pile, and its width limited so as not to interfere with access road construction or conductor stringing. A separation of at least 10' shall be provided on either side of each pile.
- All roads, trails, and streams (including their banks) shall be kept clear. No piling shall be undertaken where piles would be highly visible from any improved roads, at other locations involving high public visibility, or near tower or pole sites.
- When working in a floodway or floodplain, all slash piles shall be placed on the side of the ROW furthest from the river/water source to the greatest extent possible.

7.2 Drop and Lop

- All non-compatible vegetation shall be cut so that it falls toward the edge of the right-of-way, away from any designated access paths. After trees are felled, all long limbs shall be removed from the trunk, and the tree shall be bucked in order to keep the vegetation as close to the ground as possible.
- If necessary, trees and/or slash shall be moved to create a clear path for wire stringing, as needed.
- In all areas where drop and lop is implemented, the Contractor shall establish a path for reasonable access between structures.

7.3 Chipping

- All timber shall be stacked, according to the procedure described under "Wind Rowing" above.
- All slash shall be fed through a mechanical chipper immediately after cutting.
- Unless otherwise specified, chips shall be randomly scattered on the right-of-way, except in the following areas: fields, along city streets, park areas, within wetlands, and on the banks of streams or ponds. In such areas, chips must be disposed of at an acceptable site, either on or off the right-of-way.

8.0 HERBICIDE APPLICATIONS

Herbicide Applications:

- Shall be performed in accordance with the latest version of "PPL EU Herbicide Application Policy"
- Contractor employees shall possess appropriate Commercial Applicator/Technician certification and the Contractor shall have a pesticide application business license, in compliance with the Pennsylvania Pesticide Control Act of 1973 (3 P. S. § § 111.21—111.61).
- The Contractor shall maintain a record of all required property owner contacts on log sheets. These records will be submitted to a PPL EU Authorized Representative at his/her request and at the completion of each line.
- All target species will be adequately treated to produce the necessary control. A responsible Contractor Representative will review all prior year herbicide applications for quality control. The Contractor shall retreat at their own expense until the desired results are obtained.
- Vehicles used for application and property owner contacts must have Contractor identification of suitable size lettering as approved by a PPL EU Authorized Representative.

9.0 COMPLIANCE AND EXCEPTIONS

All vegetation management activities shall be performed in accordance with the latest version of NERC FAC-003 and the latest version of PPL Electric Utilities FAC-003 Transmission Vegetation Program Document.

In addition to the exceptions specifically authorized herein, the PPL EU Manager of Vegetation Management, or his or her designee, may from time to time grant an exception to PPL EU's documented vegetation maintenance strategies, procedures, processes or specifications related to this document for good cause, including, but not limited to, such factors as safety conditions, weather, ice, flooding, emergencies, disasters, labor disputes, or legal limitations. Any such exceptions shall be in writing.

10.0 WORK UNIT DEFINITIONS

The following work unit definitions represent the individual units planned by the third party contractor in advance of work release to the vegetation contractor.

Herbicide - Non Aquatic -This unit will be recorded as square feet of brush that can be treated with herbicide. A polygon will be drawn in for the brush areas. This unit will be planned as acres managed. Therefore, if the whole span contains sporadic incompatible hardwood brush species then the whole length by width will be recorded. Maintained yard areas and impervious surfaces will be excluded. Pricing for this unit type will be by acre.

Herbicide - Aquatic- This unit will be recorded as square feet of brush that can be treated with aquatic approved herbicides. A polygon will be drawn in for brush in established wetlands and areas located within 35 feet of water edge as outlined by the latest version of the NPDES permit. This unit will be planned as acres managed. Pricing for this unit type will be by acre.

Hand Cut Brush - This unit will be recorded as square feet of brush that can't be treated with herbicide. A polygon will be drawn in for the canopies of brush areas. If there is just one small area of brush canopies in a span, that is all that will be drawn in. If the whole span is filled with incompatible hardwood brush species then the whole length by width will be recorded. This unit shall include a stump or stubble treatment as part of the unit. Pricing for this unit type will be by acre.

Mowing - This unit will be recorded as square feet of brush to be mowed. A polygon will be drawn in for the canopies of brush areas. This unit shall include a cut stubble treatment as part of the unit. Pricing for this unit type will be by acre.

Side Trim - Bucket – This unit will be recorded as linear feet and planned to trim with a lift vehicle. Trees shall be pruned to the full extent of the right of way boundary, and shall be ground to sky pruning. Pruning is planned from drip line to drip line. If the trees are side by side or have minimal spacing, less than 40', between them the trees shall be marked as a single unit starting at the drip edge of the first tree to be trimmed and ending at the drip edge of the last tree to be trimmed. If spacing between the trees to be trimmed is greater than 40' the tree/trees shall be marked as two separate units.

Side Trim - Manual - This unit will be recorded as linear feet. Trees shall be pruned to the full extent of the right of way boundary, and shall be ground to sky pruning. Pruning is planned from drip line to drip line If the trees are side by side or have minimal spacing, less than 40', between them the trees shall be marked as a single unit starting at the drip edge of the first tree to be trimmed and ending at the drip edge of the last tree to be trimmed. If spacing between the trees to be trimmed is greater than 40' the tree/trees shall be marked as two separate units.

Mechanical Side Trim - This unit will be recorded as linear feet and planned to trim with a mechanized unit such as a Jarraf. Trees shall be pruned to the full extent of the right of way boundary, and shall be ground to sky pruning. Pruning is planned by the linear foot and from drip line to drip line. If the trees are side by side or have minimal spacing, less than 40', between them the trees shall be marked as a single unit starting at the drip edge of the first tree to be trimmed and ending at the drip edge of the last tree to be trimmed. If spacing between the trees to be trimmed is greater than 40' the tree/trees shall be marked as two separate units.

Vine Pole/Structure – A standalone point unit for cutting and spraying of vines and brush on a pole, guy wires, and structure base. Any brush under and in the immediate area around poles, guys and structure bases shall be cut. This unit shall include a stump or stubble treatment as part of the unit.

Removals- This is a point unit that will be planned by tree DBH. These will be identified as non-maintained or maintained. The maintained designation will be used for lawn or back yard type removals

that will require additional clean-up such as brush dragging, chipping and or wood removal.

Miscellaneous T&M – Must be defined and authorized by PPL EU Authorized Representative.

11.0 ATTACHMENTS

Compatible Species List[14] (Does not include Horticultural plant varieties)

I. SMALL TREES[15]

a) Flowering Dogwood (*Cornus florida*)
b) Redbud (*Cercis canadensis*)
c) Hawthorn (*Crataegus spp.*)
d) Blue Beech (American Hornbeam) (*Carpinus caroliniana*)
e) Shadbush (Juneberry, Serviceberry) (*Amelanchier spp.*)
f) Eastern Red Cedar (*Juniperus virginia*)
g) Northern White Cedar (*Thuja occidentalis*)
h) Dwarf Willow (*Salix spp.*)
i) Deciduous Holly (Winterberry) (*Ilex verticillata*)

II. LARGE SHRUBS

a) Alder (*Alnus spp.*)
b) Witch-hazel *(Hamamelis virginiana*)
c) Spicebush (*Lindera benzoin*)
d) Common Chokecherry (*Prunus virginiana*)
e) Elderberry (*Sambucus spp.)*
f) Rhododendron (*Rhododendron spp.*)
g) Virburnum (*Viburnum spp.*)
h) Dogwood (*Cornus spp.)*
i) Smooth (Dwarf) Sumac (*Rhus glabra*)
j) Staghorn Sumac (*Rhus typhina*)
k) Chokeberry (*Pyrus arbutifolia*)

[14] This list is not all inclusive and is meant to be a guideline. These species are to be preserved as appropriate in accordance with this and other PPL EU Vegetation Management Specifications. Some species represented on this list as compatible may require removal due to site conditions, regulatory requirements, and other needs of PPL EU to build, operate, and maintain a safe and reliable transmission system.

[15] These species shall be evaluated on an individual basis. Over mature specimens have the ability to exceed 40' in height and must be removed if they become a clearance threat

III. SMALL SHRUBS

a) Mountain Laurel (*Kalmia latifolia*)
b) American Yew-Ground Hemlock (*Taxus canadensis*)
c) Sweetfern (*Comptonia peregrina*)
d) Honeysuckle (*Lonicera spp.)*
e) Huckleberries (*Gaylussacia spp.*)
f) Blueberries (*Vaccinium spp.*)
g) Viburnum (*Viburnum spp.*)
h) Meadowsweet (*Spirea spp.*)
i) Wintergreen (*Gaultheria procumbens*)
j) Trailing Arbutus (*Epigaea repens*)
k) Blackberry (*Rubus allegheniensis*)
l) Raspberry (*Rubus occidentalis*)
m) Hazlenut or Filbert (*Corylus spp.*)
n) Scrub Oak (*Quercus spp.*)

IV. ALL NATIVE GRASSES, FERNS AND HERBACEOUS PLANT

12.0 RECORD RETENTION

10.1 Record retention shall be consistent with the PPL Corporation Records Management Project Retention Schedule.

10.2 This document shall be reviewed annually by the Manager of Vegetation Management in Electric Utilities.

10.3 The review shall be facilitated by the Records Management Coordinator (RMC).

13.0 REVISION HISTORY

Prepared by:	Nicholas E. D'Amico
	Nicholas E. D'Amico Regional Forester
Approved by:	
	Aaron A. Dom Manager – Vegetation Management

Revision	Date	Revision Comments
13	06/01/2018	• Removed Reviewed By section
12	10/1/2017	• Edited Example 2 of section 6.1 General Requirements, Section A • Added Work Unit Definitions section • Edited Section 6.2 A.
11	01/01/2017	• Update to Wire Security Zone and Minimum Acceptable Clearance Distance Table. • Update to Initial Clearing of New Right-Of-Way or Transmission Line Rebuild section language related to herbicide treatment of vegetation removal. • Updated to Wire Zone/Border Zone section language related to herbicide treatment of vegetation removal. • Added Reviewed by section to the Revision History section.
10	12/22/2014	• Reformatted entire document into preferred PPL EU format. • Removed Roman numeral section numbers. • Added expanded Responsibility section. • Removed herbicide mix tables from body, created herbicide supporting document. • Added Voltage Hierarchy concept to beginning in 2016. • Added no remediation required for annual crops or dead vegetation that will never encroach into MVCD. • Added Hazard tree terminology, replaced references to danger trees with hazard tree in most cases. • Removed transmission line cross section diagrams. • Updated clearing width table. • Removed referenced to retired TVMP and previous versions of LA-79827. • Further defined WZ/BZ concept. • Updated WZ/BZ diagram. • Reduced applicability of pruning in favor of removing non-compatible vegetation. • Replaced debris disposal with debris disposition. • Established wind rowing as the preferred method of debris disposition. • Added requirements to restore earth disturbance. • Added requirement to not access any restored areas or wetlands with mechanical equipment without contacting PPL EU Environmental professional. • All references to Forester or LCI replaced with PPL EU Authorized Representative. • All references to company representative replaced with PPL EU

		Authorized Representative. • All references to PPL Electric changed to PPL EU • Added sub-section describing centerline rights-of-way. • Added footnote to reference PPL EU Vegetation Contractor Orientation Document. • Added Acronyms and Abbreviations section. • Added Compliance and Exceptions section. • Added Record Retention section.
09	09/12/2013	• Simplified Document Title • Section I, Updated scope to include compliance with all permits and laws. • Section II, Added "Initial Clearing of a New Right-of-Way" • Section III, Updated verbiage. • Table 3, Removed American Chestnut as a Compatible Species • Section IV, Removed references to burning brush as an acceptable method of debris disposal. • Table 4, Updated list of Approved Herbicides and Spray Mixtures • Section VI, Removed references to burning brush. • Section VI, Updated instructions for reporting Electrical System Events and on the job injuries.
08	12/01/2010	• Section III, Part A updated to add Wire Zone-Border Zone management technique to be used where applicable and not sole management technique. • Section III, Part A, sections 2 and 3 updated to clarify acceptable/non-compatible species and possible exceptions to WZ-BZ. • Acceptable Species Table 3 specified as to not include horticultural plant varieties. • Section III, Part A, section 4 amended to reflect pruning is not preferred for trees under wires. All pruning to be completed with PPL authorization • Section V, parts A & B amended to reflect new herbicide application techniques (cut-stubble). • Table 4 Amended to reflect updates to approved herbicide mix alternatives. • Section IV, remove reference to PPL Specification A-118231 as it was retired. • Amended applicable footnotes to reference current Specification, LA-79827-8, for species acceptability.
07	07/01/2009	• Section III updated to add Wire Zone-Border Zone Management technique to be used where applicable. • Herbicide Alternative 6 amended to remove Oust and replaced with Escort into mix.

		• Amended applicable footnotes to reference current Specification, LA-79827-7, for species acceptability.
06	03/01/2009	• Specification update to add clarification footnotes to Section II – Clearing Requirements, Section III Clearing Procedures, and Table 1 Right-of-Way Clearing Widths and Conductor-to Vegetation Clearances to note: "No corrective remediation pruning actions required for encroachments of WSZ (only) where maximum-sag conductor conditions have been identified, species acceptability- per PPL EU Specification LA-79827-6 confirmed, and vegetation growth has been determined to be maximized or vegetation is dead."
05	03/01/2008	• Update specification for NERC FAC-003-1 compliance requirements of defined clearance 1 and 2 as applicable to lines operated at 200kV or above. • Updated acceptable use herbicides, adjuvants and mixture alternatives. • Added additional contractor requirement in event of work related interruption or identification of imminent threat. • Remove references to PP&L throughout and replace with PPL Electric Utilities.
04	12/31/1993	• Update specifications to more current vegetation management practices and materials.
00	1970	• Earliest known reference to LA-79827-0

PPL Electric Utilities
Furnace Run 230 kV
Transmission Line Project
SUPPLEMENTAL ATTACHMENT 12
AGENCY COORDINATION

DATE	COMMUNICATION TYPE	STATE	COUNTY	OFFICE	CONTACT	Comment
January 29, 2020	Letter	Pennsylvania	Federal	USFWS - Pennsylvania Field Office	Robert Anderson	Consultation request for review of route related to rare, threatened, and endangered species.
January 9, 2020	Email	Pennsylvania	Federal	USDA NRCS	Hathaway Jones	Consultation request for review of route related to agriculture easements.

David Bonenberger
Vice President Transmission & Substations

PPL Electric Utilities
Two North Ninth Street, GENN5
Allentown, PA 18101-1179

Sept. 11, 2019

Dear landowner,

You have likely heard about the Independence Energy Connection (IEC) project proposed by Transource, which includes a new substation and transmission lines for the east segment of the project in York County.

Transource, in further evaluating alternatives for the project, approached PPL Electric Utilities to determine if PPL's existing right-of-way easements and power lines could be used in an alternative to the originally proposed project.

Transource will still build the proposed Furnace Run substation, but under the new alternative PPL will be responsible to site, construct and maintain the transmission lines to connect the Furnace Run substation to two of PPL's existing 230 kV transmission lines that run in a north-south direction into Maryland. Those existing lines are known as Manor-Graceton and Otter Creek – Conastone.

To make that connection, PPL would use an existing 69 kV PPL power line corridor that crosses your property. The existing line and the lattice-style towers would be removed and PPL would need to purchase additional right of way to widen the corridor, now maintained to 100 feet, to 225 feet to accommodate two new 230kV lines. These lines would be on steel monopoles and run parallel to one another for approximately four miles between the Manor - Graceton and Otter Creek - Conastone transmission lines, connecting into Transource's planned substation.

A second set of wires will be added to the existing poles on both the Manor - Graceton and Otter Creek - Conastone lines to create the capacity needed for the project.

This alternative will be submitted to the Pennsylvania Public Utility Commission for their review and approval.

The IEC project will address congestion issues identified by PJM Interconnection, the regional transmission organization responsible for managing the high-voltage electric grid for 65 million customers in all or parts of 13 states (including Pennsylvania, New Jersey and Maryland) and the District of Columbia.

This project also solves growing reliability violations in Pennsylvania and Maryland that, if the project were not built, would require a new solution before 2023 to maintain electric reliability in the area.

Our right of way agents will be working with you to discuss the project and the additional right of way we'd like to purchase. A right of way easement gives PPL the right to build and maintain power lines across your property. You retain ownership of the property and receive a one-time payment for the easement.

We look forward to talking with you in the future.

Sincerely,

David J Bonenberger

David Bonenberger
Vice President, Transmission and Substations

Jessica Baker
Regional Affairs Director

PPL Electric Utilities
320E Market St.
Strawberry Square, 4th Floor
Harrisburg, PA 17101
www.pplweb.com

PPL Electric Utilities

December 12, 2019

Dear Property Owner,

PPL Electric Utilities will hold a public open house on January 14, 2020 at the Chanceford Township Building regarding its plans to build transmission lines to connect two nearby PPL transmission lines to Transource's planned substation in Lower Chanceford Township, York County.

You are receiving this letter because you own property crossed by the project, or you live close to the planned work areas.

As you may know, PPL plans to install two new 230-kilovolt transmission lines that will run parallel in a modified right of way corridor. We plan to build about four miles of new lines — approximately two miles on each side of Transource's planned Furnace Run substation — between our existing Manor - Graceton and Otter Creek - Conastone transmission lines.

Please see the enclosed fact sheet for more information on our plans, as well as open house details. There will be no set agenda for the open house and no formal presentations, so feel free to visit anytime between 6 and 8 p.m. Our project team and representatives from Transource will be there to answer questions.

Sincerely,

Jessica L. Baker

Jessica Baker
Regional Affairs Director

PPL Electric Utilities
320E Market St.
Strawberry Square, 4th Floor
Harrisburg, PA 17101
www.pplweb.com

PPL Electric Utilities

December 12, 2019

Dear Property Owner,

PPL Electric Utilities will hold a public open house on January 14, 2020 at the Chanceford Township Building regarding its plans to build transmission lines to connect two existing PPL-owned transmission lines to Transource's planned Furnace Run substation in Lower Chanceford Township, York County.

As part of the overall project PPL will add an additional circuit, or set of wires, on those existing nearby lines. We will be installing new arms onto the existing poles to hang the additional set of wires. Additional right of way will not be needed for this upgrade.

State Public Utility Commission approval for this additional circuit was received several years ago, before the emergence of the Transource project. You are receiving this letter because you own property that is already crossed by those existing transmission lines or you live close to, either Manor - Graceton or Otter Creek - Conastone.

While the open house will not focus on the planned and previously approved additional circuit on our existing transmission lines, we wanted you to be aware of the event should you want to learn more about Furnace Run and the new lines PPL plans to build to service that new substation.

Please see the enclosed fact sheet for more information. There will be no set agenda for the open house and no formal presentations, so feel free to visit anytime between 6 and 8 p.m. Our project team, and representatives from Transource, will be there to answer questions.

Sincerely,

Jessica L. Baker

PPL ELECTRIC UTILITIES CORPORATION
AMENDED APPLICATION
Supplemental Attachment 13

David Bonenberger
Vice President Transmission & Substations

PPL Electric Utilities
Two North Ninth Street, GENN5
Allentown, PA 18101-1179

September 25, 2019

Dear [redacted],

You have likely heard about the Independence Energy Connection (IEC) project proposed by Transource, which includes a new substation and transmission lines for the east segment of the project in York County.

Transource, in further evaluating alternatives for the project, approached PPL Electric Utilities to determine if PPL's existing right-of-way easements and power lines could be used in an alternative to the originally proposed project.

Transource will still build the proposed Furnace Run substation, but under the new alternative PPL will be responsible to site, construct and maintain the transmission lines to connect the Furnace Run substation to two of PPL's existing 230 kV transmission lines that run in a north-south direction into Maryland. Those existing lines are known as Manor-Graceton and Otter Creek – Conastone.

To make that connection, PPL would use an existing 69 kV PPL power line corridor that crosses your property. The existing line and the lattice-style towers would be removed and PPL would need to purchase additional right of way to widen the corridor, now maintained to 100 feet, to 225 feet to accommodate two new 230kV lines. These lines would be on steel monopoles and run parallel to one another for approximately four miles between the Manor - Graceton and Otter Creek - Conastone transmission lines, connecting into Transource's planned substation.

A second set of wires will be added to the existing poles on both the Manor - Graceton and Otter Creek - Conastone lines to create the capacity needed for the project.

This alternative will be submitted to the Pennsylvania Public Utility Commission for their review and approval.

The IEC project will address congestion issues identified by PJM Interconnection, the regional transmission organization responsible for managing the high-voltage electric grid for 65 million customers in all or parts of 13 states (including Pennsylvania, New Jersey and Maryland) and the District of Columbia.

This project also solves growing reliability violations in Pennsylvania and Maryland that, if the project were not built, would require a new solution before 2023 to maintain electric reliability in the area.

Our right of way agents will be working with you to discuss the project and the additional right of way we'd like to purchase. A right of way easement gives PPL the right to build and maintain power lines across your property. You retain ownership of the property and receive a one-time payment for the easement.

We look forward to talking with you in the future.

Sincerely,

David Bonenberger
Vice President, Transmission and Substations

Drew Harrison
Right of Way Agent

PPL Electric Utilities
5000 W. Tilghman Street, Suite 157
Allentown, PA 18104
Tel. 570-231-5141

September 25, 2019

[redacted]

RE: Furnace Run Transmission Line
Parcel #: [redacted]

Dear [redacted],

PPL Electric Utilities Corporation (PPL Electric) is planning to build the Furnace Run 230 kV transmission pole line in your area. I am notifying you of this proposed project as required by the Pennsylvania Public Utility Commission since we would like to place the transmission line on your property.

Enclosed are notices required by the Pennsylvania Public Utility Commission that provides important information regarding eminent domain, right-of-way maintenance practices, and land agents conduct. Also enclosed is PPL's Internal Practices for Dealing with the Public on Power Line Projects. The Pennsylvania Public Utility Commission's regulations require that PPL Electric provide you with this information at least 15 days in advance of our discussions. For your convenience, I also have enclosed information on electromagnetic fields and a brochure on vegetation management, as well as a glossary of real estate terms.

If you have any questions or concerns, please feel free to contact me at 270-519-8111 or email: Drew.harrison@contractlandstaff.com.

I kindly request that you sign, in the space provided, on the following page to indicate that you have received this information.

Sincerely,

Drew Harrison
Right of Way Agent

I acknowledge receiving the information referred to in the letter above and understand that it does not obligate me in any way.

_____

Date _____

Phone _____

Attachments:
Disclosure of Eminent Domain Power
Notification of Right-of-Way Maintenance Practices
Internal Practices for Dealing with the Public on Power Line Project
Notification Regarding Land Agent Practices
Information on Electromagnetic Fields
Brochure on Vegetation Management
Glossary of Real Estate Terms

Furnace Run Transmission Line Project

INTRODUCTION

PPL Electric Utilities was recently approached by Transource® regarding the York County portion of Transource's Independence Energy Connection power line project.

PPL has agreed to participate in a new alternative for the project which would see PPL plan, build and own two new 230 kV transmission lines to connect Transource's planned Furnace Run substation to two of PPL's existing 230 kilovolt (kV) transmission lines in the area that run in a north-south direction into Maryland. Those lines are known as Manor - Graceton and Otter Creek - Conastone.

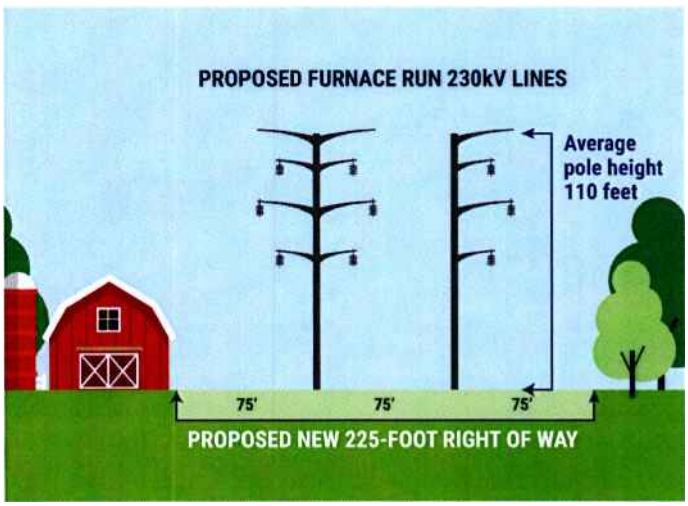
The new 230 kV lines will total about four (4) miles long and be built in an existing PPL transmission line corridor that currently contains a PPL 69 kV transmission line. The current right of way would have to be expanded to build the new lines, which will run parallel to one another.

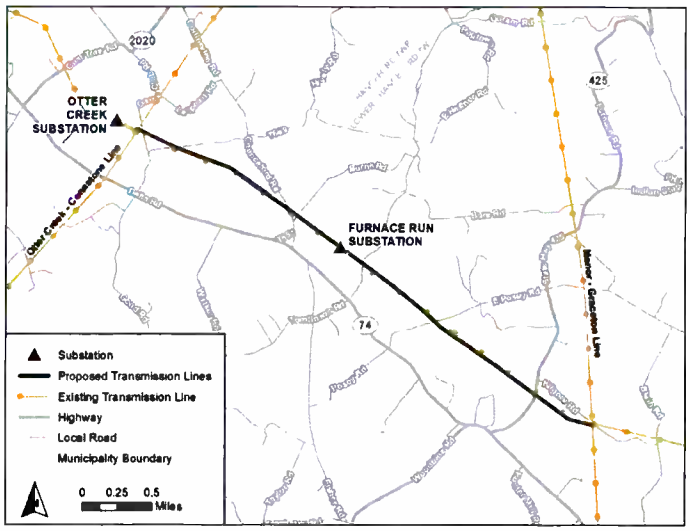
Part of the new alternative also involves putting another set of wires on the existing Manor-Graceton and Otter Creek – Conastone transmission line poles.

ADDITIONAL RIGHT OF WAY

Real estate professionals working on behalf of PPL Electric Utilities will be reaching out to property owners to acquire additional right of way through easements, which allow PPL to build and maintain a power line(s). Property owners retain ownership of the land and are paid a one-time fee.

The right of way for the new lines to connect Transource's Furnace Run substation to PPL's existing transmission lines would mean the existing 69 kV corridor, now maintained to 100 feet, would be widened to 225 feet.





PROJECT DETAILS

If the project is approved by the state Public Utility Commission, PPL would remove the existing 69 kV transmission line and replace it with the new 230 kV lines.

The new 230 kV lines would use a parallel set of single-shaft steel poles to connect Transource's planned Furnace Run substation to PPL's existing Manor- Graceton and Otter Creek - Conastone lines.

The new poles will range from 100 – 120 feet, with the average being 110 feet tall. The existing 69 kV towers in the corridor range in height from 50 to 125 feet tall.

A construction start date has not been set.

As always, PPL Electric Utilities will try to minimize the effect on property owners and the environment during all phases of this work.

INFORMATION

For more information about this project, please contact Jon Scott at 817-975-7099 or Jonathan.scott@contractlandstaff.com.

Our commitment is to keep the public involved and informed as the project proceeds.

ABOUT PPL ELECTRIC UTILITIES

PPL Electric Utilities is a subsidiary of PPL Corporation that provides electric delivery services to 1.4 million customers in central and eastern Pennsylvania. Our primary goal is to keep the electric grid reliable for customers, and this project is part of that ongoing work.

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PPL Electric Utilities

DISCLOSURE of EMINENT DOMAIN POWER

The Pennsylvania Public Utility Commission requires PPL Electric Utilities Corporation to give you the following information:

PPL Electric Utilities Corporation (PPL) is planning to build the Furnace Run Transmission line. Since a field survey and detailed engineering has not been completed, the physical dimensions of the proposed lines and the type and height of supporting structures to be used cannot be precisely determined at this time. However, based on past experience it is expected that the structures will average 110 feet in height. There may be isolated physical conditions that would require either higher or lower structures than those mentioned above. At this time, we do not know the number of structures to be placed on any properties. PPL currently plans to widen the existing right of way to 225 feet to accommodate two new 230 kV transmission pole lines.

Since the route could affect your property, a representative of the utility will contact you in the near future to discuss the utility's plans as they may affect your property. In order 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 of PPL Electric Utilities Corporation 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 THE UTILITY FOR YOUR PROPERTY?

No. You may refuse to accept it. However, the utility has 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 utility 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 THE UTILITY CONDEMN YOUR HOUSE?

The company cannot condemn your house or a reasonable "curtilage" around your house. Generally, "curtilage" includes the land or buildings within 100 meters of your house which are used for your domestic purposes. However, the 100 meters limit does not automatically extend beyond the homeowner's property line.

Sept. 25, 2019

DO YOU HAVE A RIGHT TO A PUBLIC HEARING WHEN THE UTILITY SEEKS TO CONDEMN YOUR PROPERTY?

Yes. When an electric utility seeks to have your property condemned, the utility 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 certificate. If you wish to testify at the public hearing, you should make your intention known by letter to Secretary, Pennsylvania Public Utility Commission, P.O. Box 3265, Harrisburg, PA 17120.

If the Commission approves the utility's application for a certificate finding the condemnation in the public interest, then the utility may proceed before the local Court of Common Pleas to condemn your land. If the Commission denies the utility's application, the utility 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 the utility's application for condemnation, the amount of money to which you are entitled will be determined by a local Board of View of the Court of Common Pleas. However, you may at any time make an agreement with the utility as to the amount of damages you are to be paid.

NOTIFICATION of RIGHT-OF-WAY MAINTENANCE PRACTICES

The Pennsylvania Public Utility Commission requires that PPL Electric Utilities Corporation give you the following information on the RIGHT OF WAY MAINTENANCE PRACTICES for the 230 kV line:

The methods currently used by PPL Electric Utilities Corporation are set forth in PPL Electric Utilities Corporation "Program for Vegetation Management", which 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 on 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 a utility has constructed an electric transmission line on a right of way across your land, the utility 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. The utility 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 or application of herbicides. The utility 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 the company 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 the utility before you sign the right of way agreement.

The utility company has the responsibility to maintain its right of way, and regular maintenance must occur. Although you as the landowner cannot determine whether or not 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 the utility company for your land, since a right of way agreement is a legal contract between a landowner and a utility company. It is important for you to understand also that the maintenance methods used by the utility company 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 the utility company 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 damages resulting from improper maintenance of the right of way must be settled with the utility, its contractors, or in the local Court of Common Pleas at your own expense. The Commission cannot award damages for violations of the right of way agreement.

INTERNAL PRACTICES
for
DEALING WITH THE PUBLIC ON POWER LINE PROJECT

PPL Corporation has a long-standing commitment to conducting business in an honest and ethical manner. Consistent with expectations for our employees and representatives laid out in the PPL Standards of Conduct and Integrity, and the Standards of Conduct and Integrity for Suppliers, PPL Electric Utilities Corporation's employees, contractors and agents who interact with members of the public (including landowners along proposed rights of way) in activities such as planning, real estate and right-of-way transactions, siting, and construction of power lines and other facilities will:

- Act with integrity at all times.
- Treat people courteously and in a professional manner.
- Be forthright and honest in all actions and communications.
- Comply with applicable laws and regulations.
- Seek to avoid conflicts of interest.
- Accept responsibility for actions and decisions.
- Be responsible stewards of the environment.
- Place a high priority on the safety of the public and our representatives and employees.

NOTIFICATION REGARDING LAND AGENT PRACTICES

PPL Electric Utilities Corporation is planning to build the Furnace Run Transmission line. Since the route could affect your property, a representative from PPL Electric Utilities Corporation will contact you in the near future to discuss the utility's plans as they may affect your property.

The Pennsylvania Public Utility Commission requires PPL Electric Utilities Corporation to provide you the following contact information for concerns regarding the practices of the land agents acting on behalf of PPL Electric Utilities Corporation in connection with the removal of the existing 69 kV transmission line and the construction of the two new 230 kV transmission pole lines:

Rick Hicks, Chief Counsel
Law Bureau
Pennsylvania Public Utility Commission
400 North Street, 3rd Floor, 4 North
Harrisburg, PA 17120
717-787-5000

Tanya J. McCluskey
Acting 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

Sept. 25, 2019

GLOSSARY of REAL ESTATE TERMS

ABSTRACT OF TITLE: The condensed history of ownership to a particular parcel of real estate, consisting of a summary of ownership from a given time to the present owner.

ACRE: A measure of land equal to 43,560 square feet.

APPRAISAL: An estimate of the value of property; the process through which conclusions of property value are reached.

APPRECIATION: An increase in the worth or value of a property.

CHAIN OF TITLE: A history of ownership of a particular property (see abstract of title).

CONDEMNATION: A judicial or administrative proceeding to exercise the power of eminent domain through which private property is taken for public use.

CONDUCTOR: The wire which carries electric energy.

CONVEYANCE: A transfer of property ownership.

DEED: A written document that, when executed and delivered, conveys title to or an interest in real estate.

DEED RESTRICTIONS: Clauses in a deed limiting the use of the property.

DEPRECIATION: A loss of value in property.

EASEMENT: A right to use the land of another for a specific purpose (e.g., as a right of way for utilities.)

EGRESS: The right to exit a tract of land.

EMINENT DOMAIN: The right of a government, municipal body or public utility to acquire property for public use. (See condemnation)

ENCROACHMENT: An intrusion, such as a house, sign, wall or fence, that intrudes on another's property or right of way.

FAIR MARKET VALUE: The highest price which a willing buyer would pay and the lowest price a willing seller would accept.

FEE OR FEE SIMPLE: The complete and absolute ownership of real estate.

GRANT: The transfer of property rights through a legal document.

GRANTEE: One who acquires property or any property rights from another person.

GRANTOR: One who transfers property or any property rights to another person.

INGRESS: The right to enter a tract of land.

KV: Kilovolt or 1000 volts (138 kV = 138 x 1000)

LIEN: A claim against real or personal property for satisfaction of a debt.

METES-AND-BOUNDS DESCRIPTION: The legal description of a parcel of land that begins at a well-marked point and follows the boundaries, using directions and distances.

MONUMENT: A fixed natural or artificial object used to establish real estate boundaries.

OPTION: The right to purchase a certain property at stated terms, price and time.

RECORDING: The act of entering documents in the Recorder of Deeds office established in each county.

RIGHT OF WAY: Used interchangeably with the word easement. (See easement)

SURVEY: A process of scientifically measuring the quantity and location of a parcel of land.

TAX MAP: Maps used by the county Tax Assessment office showing the locations of properties.

TITLE: Evidence of ownership of land.

ZONING: Regulations pertaining to the use of land and/or buildings.

EMF and Health Information

FACT SHEET

What is EMF?
"EMF" is an abbreviation for "electric and magnetic fields" and "electromagnetic fields." Power lines, appliances, and home wiring all produce electric and magnetic fields. "EMF" is also often used by people as shorthand for just "magnetic fields," which some people are concerned about, so that is what "EMF" refers to here.

Is EMF "radiation" like medical X-rays or ultraviolet sunlight? No. Radiation from medical X-rays and from the ultraviolet part of sunlight is strong enough to damage DNA. EMF from power lines, appliances, and home wiring is not.

What are the EMF levels from common sources? (in milligauss)

Examples of EMF Sources*	
Coffee makers	7
Electricity distribution line – upper level of typical average	20
Dishwashers	20
500 kV electricity transmission line – typical average at end of right of way	30
Electricity distribution line – typical maximum above underground line	40
Florescent lights	40
Electricity distribution line – typical maximum under overhead line	70
Blenders	70
500 kV electricity transmission line – typical average under line	87
Toasters	100
Hair dryers	300
Can openers	600

* *People typically change activities and locations during a day, so we are exposed to a variety of sources of EMF and a wide range of field levels. In the table above, field levels are taken from the U.S. National Institute of Environmental Health Sciences (NIEHS) EMF Questions & Answers, pages 33-35 (median level at 6 inches from appliances), page 36 (distribution lines), and page 37 (transmission lines). As noted by NIEHS, field levels of transmission lines can approximately double during peak loads, which occur about 1% of the time.*

What conclusions have public health authorities reached about whether EMF causes health effects?
The EMF health research has been examined by governmental public health authorities and public health organizations in over 160 reports. The World Health Organization has examined the reports on the research and says on its website:

> "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."
>
> (http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html, section 2, "Conclusions from scientific research.")

Q. Are there any exposure limits for EMF in Pennsylvania?
A. Pennsylvania has not adopted any electric or magnetic field exposure limits.

Q. What is PPL Electric Utilities doing about EMF?
A. PPL Electric Utilities has a magnetic field management program to design and build new lines when practicable in ways that reduce magnetic fields at low or no cost to our customers. For example, the options we will consider for new lines include:

- Reversing the phases of new overhead double-circuit transmission lines, which can result in some cancellation of magnetic fields from the line and lowers the magnetic fields at the edge of the right of way.
- Building new transmission and distribution lines higher than previous designs because the level of magnetic fields at ground level will be lower.

Magnetic field management is considered in the process we use to site new facilities, balancing cost and function with land use and environmental concerns.

Q. Where can I get additional information on EMF?
A. This guide contains detailed information on EMF. More information is also available at the PPL Electric Utilities website at **www.PPLElectric.com/EMF.** If you would like to speak with someone at PPL Electric Utilities about EMF, please call **1-800-DIAL-PPL (1-800-342-5775).**

PPL Electric Utilities

Vegetation management is critical to electric reliability

Millions of people served by PPL Electric Utilities depend on having reliable power for their homes and businesses. Effective vegetation management along high-voltage transmission lines is a critical part of maintaining that reliability.

PPL Electric Utilities operates thousands of miles of high-voltage transmission lines. Our vegetation management program is designed to promote the safe and reliable operation of the electric grid while making sure that we are sensitive to the concerns of property owners and our obligations to electric customers.

PPL Electric Utilities' right to do this work

The vegetation management work we do will depend on the specific rights we have for each property. We will be happy to discuss these rights with you in advance of any work.

To schedule a meeting with a PPL Electric Utilities representative, call 1-877-528-2889 or email us at PPLVegetationManagement@pplweb.com.

For further information, visit **www.pplelectric.com/vegetation.**

TREE LINE USA®

An award-winning program

PPL Electric Utilities is a proud recipient of the **Tree Line USA award from the Arbor Day Foundation and the National Association of State Foresters.** The groups seek to promote proper utility arboriculture and public education through annual worker training, quality tree care, tree planting and public education, energy conservation and collaboration with community groups. For information about planting the right tree in the right place, visit www.arborday.org.

PPL Electric Utilities works with state and local conservation, land management and environmental groups to advance common goals of electric reliability and environmental stewardship.

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PPL Electric Utilities

www.pplweb.com/vegetation

7/2015

Transmission Line Vegetation Management

Keeping your electric service reliable

PPL ELECTRIC UTILITIES CORPORATION
AMENDED APPLICATION
Supplement 1 Attachment 13

Transmission Line Vegetation Management

Trees and other tall vegetation must be kept away from power lines.

If they get too close, the result can be a serious power outage. There is also the potential of a significant safety risk to you, and to our employees.

The Northeast Blackout of 2003 provides clear evidence that trees and high-voltage transmission lines do not mix. About 55 million people in eight U.S. states and Canada were without power after a tree touched a transmission line.

In our area, the heavy snowstorm in October 2011 knocked leaf-laden trees into transmission lines and resulted in prolonged power outages for PPL Electric Utilities customers – more proof that trees too close to high-voltage lines can cause reliability problems for homes and businesses.

We take a proactive approach to vegetation management

This means that we are removing more trees and trimming more trees than we did in the past. We understand that this approach is not always popular with property owners. But it is the right thing to do – to keep our system safe and reliable for everyone.

Our vegetation management program is designed to meet regulatory requirements.

- Federal and state regulators impose obligations on electric utilities based on the voltage of the line.
- The federal government adopted strict new reliability standards for certain higher-voltage transmission lines after the 2003 blackout. PPL Electric Utilities is required to meet these standards. We face stiff fines if we do not.
- Pennsylvania utility regulators require us to keep our electric delivery system reliable.
- In May 2012, the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation, in a review of power outages after the October 2011 snowstorm, recommended that utilities do more to keep trees away from high-voltage transmission lines.

Our pledge to you

We understand that removing or trimming trees may not be popular with many landowners.

- We pledge to communicate with property owners well in advance of regularly scheduled vegetation work.
- We pledge to work in a professional manner, and to work within the limits of the rights we have to perform this work on each property.
- We pledge to treat private property with care.
- We pledge to strike a careful balance – being sensitive to landowner concerns about vegetation management while at the same time doing the work that is needed to improve electric service reliability for customers by keeping trees away from power lines.

Details of the work we will do

Reducing tree-related power outages is important everywhere, especially on transmission lines which carry high-voltage electricity to substations, which in turn supply communities and businesses.

The area directly under the transmission line wires, plus an additional 10 feet on each side, is called the wire zone. Under higher voltage transmission lines (500- and 230-kilovolt), our goal is to leave grasses and other non-woody plants. Lower voltage transmission lines follow the same basic model, but more selective clearing is commonly performed under the wires, taking care to allow only the vegetation compatible with the line. In some cases, the right of way easement can dictate what work is done.

In the border zone, which includes the rest of the PPL Electric Utilities right of way, the list of compatible species in this brochure provides information on what is permitted.

Hazard trees – those trees adjacent to the right of way that are in poor condition or may fall on our lines – ***will be removed at no cost to the property owner.***

SMALL TREES
Flowering Dogwood
Redbud
Hawthorn
American Hornbeam
Shadbush (Juneberry, Serviceberry)
Eastern Red Cedar
Northern White Cedar
Dwarf Willow
Deciduous Holly (Winterberry)

All native grasses, ferns and non-woody plants

LARGE SHRUBS
Alder
Witch-hazel
Spicebush
Common Chokecherry
Elderberry
Rhododendron
Viburnum
Dogwood
Smooth (Dwarf) Sumac
Staghorn Sumac
Chokeberry

SMALL SHRUBS
Mountain Laurel
American Yew
Sweetfern
Honeysuckle
Huckleberries
Blueberries
Viburnum
Meadowsweet
Wintergreen
Trailing Arbutus
Blackberry
Raspberry
Hazlenut
Scrub Oak

**This list is not all inclusive and is meant as a guide. Over mature specimens of any species may be removed for operational, safety or reliability reasons.*