

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of	)	
Kingwood Solar I LLC for a Certificate	)	Case No. 21-0117-EL-BGN
of Environmental Compatibility and	)	
Public Need	)	

**NOTICE OF RESPONSES TO DATA REQUESTS FROM
THE STAFF OF THE OHIO POWER SITING BOARD**

On April 16, 2021, Kingwood Solar I LLC (“Kingwood Solar”) filed an Application for a Certificate of Environmental Compatibility and Public Need with the Ohio Power Siting Board (the “Board”). On May 17, 2021 and May 20, 2021, the Board’s Staff provided Kingwood Solar with Data Requests pertaining to Kingwood Solar’s Application. Attached to this notice are copies of Kingwood Solar’s responses, previously submitted to the Board’s Staff.

Respectfully submitted,

/s/ Michael J. Settineri

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Attorneys for Kingwood Solar I LLC

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned certifies that a courtesy copy of the foregoing document is also being sent via electronic mail on June 2, 2021 to:

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**KINGWOOD SOLAR'S JUNE 1, 2021 RESPONSES
TO STAFF'S MAY 17 AND MAY 20 DATA REQUESTS**

1. *Haley and Aldrich delineated a total of 6 wetlands and 27 streams within the project area. What are the estimated totals of temporary and permanent impacts to streams and wetlands for construction of the Project? Please also provide a detailing of which streams and wetlands are to be impacted by project construction? (Example: Wetland MMD and Stream MM8 will be impacted via a culvert crossing, etc.)*

Six wetlands were identified. No wetland impact is proposed for the Project. A total of 27 stream segments were identified. Four of these reflect different segments of Clark Run as it traverses portions of the Project Area; the remaining 23 stream segments reflect portions of different streams that traverse portions of the Project Area. Therefore, 24 streams occur within the Project Area.

A total of 9 stream segments will be crossed by underground collection lines. All collector line impacts will be temporary impacts. Therefore, no permanent impacts to streams or wetlands are proposed.

Figure DR1-1 provides a map illustrating the location of delineated streams within the Project Area and locations where collector line impact is proposed. Table 1 provides additional detail regarding anticipated potential impact, conservatively assuming the use of open trench techniques, which will be confirmed based on final engineering design; where HDD or similar techniques will be used, stream impact would be eliminated. Note that individual stream impacts under 0.1 acre (as is the case for all locations where impacts could occur) do not require a pre-construction notification in order to qualify for coverage under the United States Army Corps of Engineers Nationwide Permit 57. At the state level, stream impacts are also assessed in individual locations, with impacts less than 500 linear feet (as is the case for all locations where impacts could occur) not requiring a permit from Ohio EPA.

Table 1. Collector Line Stream Segment Impacts

Stream Segment	Stream Type	Potential Impact (if open trench)			Comments
		Linear Feet	Square Feet	Acres	
MM1	Perennial (Clark Run)	70	490	0.01	Perennial stream crossings are likely to use HDD or similar techniques
MM4	Intermittent	70	420	0.01	HDD or similar techniques may be appropriate to avoid need for tree clearing if an appropriate gap is not able to be identified.
MM6	Intermittent	70	350	0.01	Technique will depend on specific location of crossing; portions of this feature are culverted.

Stream Segment	Stream Type	Potential Impact (if open trench)			Comments
		Linear Feet	Square Feet	Acres	
MM17	Ephemeral	70	140	0.003	HDD or similar techniques may be appropriate to avoid need for tree clearing if an appropriate gap is not able to be identified.
MM18	Perennial (Clark Run)	70	1,400	0.03	Perennial stream crossings are likely to use HDD or similar techniques
MM19	Intermittent	70	700	0.02	HDD or similar techniques may be used due to bedrock substrate in some portions of this feature.
MM20	Intermittent	70	700	0.02	HDD or similar techniques could be used, depending on specific location, due to presence of old stacked stone dam.
MM22	Intermittent	70	140	0.003	Open trenching likely to be least-impact method for this seep area.
MM23	Intermittent	70	700	0.02	Installation technique selected for this channel along the Grinnell Road shoulder may be influenced by road proximity.

2. Please explain whether all stream and wetland collection line crossings would be done via HDD or through some other method? And how many crossings in total are anticipated?

It is envisioned that the crossings of Clark Run (MM1 and MM18) would use HDD or similar boring techniques. The remaining 7 stream crossings may be installed via open trenching if water is not present, avoidance of tree clearing is not a factor, and/or field conditions support this method. Otherwise, HDD or similar boring techniques would be used.

3. What standards were used in conducting the ambient noise determination?

The ambient noise determination completed for the Project used standard methods based on acoustical engineering principles and generally followed ANSI/ASA S1.13-2020. The sound level meters met the requirements of ANSI/ASA S1.4-2014/Part 1 for a Class 1 sound level meter. The equipment is calibrated annually as well as field calibrated immediately prior to use. As noted in the Application, three monitoring locations collected data over a period of nine days. Outlier sounds were removed from the L_{eq} data collected at Location 3, which is located proximate to a residential gun range. The L_{eq} values provided are exponential averages (sometimes called energy averages) rather than the arithmetic mean; this is the typical industry methodology for establishing L_{dn} values. Selection of the appropriate location for each residence was on the basis of the most proximate geography.

4. Please provide a table showing L_{eq} , L90, L50, and L10 for each monitoring locations including day/night levels, day levels and night levels.

The requested information is provided in the table below. As shown, the day-night average sound level (L_{dn}) includes a 10-dB penalty to nighttime hours, as addressed in U.S. EPA's 1974 *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, and as aligned with a methodology used by many federal agencies.

Kingwood Solar - Summary of Ambient Noise Measurements

Location	Day				Night				Day/Night
	Leq	L10	L50	L90	Leq	L10	L50	L90	Ldn
Loc. 1	51	50	40	36	46	41	34	31	54
Loc. 2	49	43	36	33	42	36	31	28	50
Loc. 3	42	41	36	33	37	34	31	29	45

Notes:

Daytime defined as 7:00 AM - 10:00 PM, Nighttime defined as 10:00 PM - 7:00 AM.

Leq calculated for the entire daytime and nighttime periods from 1-hr Leqs, respectively.

Statistics (L10, L50, L90) presented are the average of the 1-hr statistics measured during the daytime and nighttime period, respectively.

Day-night average sound level (Ldn) calculated includes a 10 dB penalty to nighttime hours.

5. *For the sound operation model, what model distribution transformer, inverter bank, substation transformer, and tracker motor were used?*

Although final equipment selection is not yet complete, Kingwood Solar used the following models for studies related to specifications of certain equipment included in the Project, e.g., visual impact, noise assessments. These equipment models are not atypical in the supplier industry and specifications of any alternative equipment procured for Kingwood Solar is expected to be largely consistent with these models.

- Distribution Transformer & Inverter: Sungrow SG3425/3600UD-MV
- Substation Transformer: Prolec GE
- Tracker Motor: Array Technologies HZ v3

6. *What is the current status of the Applicant's cultural resources investigation? Provide a projected schedule for final field work, completion of consultant's reports to SHPO and anticipated final coordination with SHPO. Also, please forward correspondence from SHPO to Staff as you receive it.*

Field work has been completed for the historic architecture report and preparation of the report is underway. We expect that a limited number of resources in the immediate Project Area may be recommended for visual screening as a result of this review. We anticipate submittal of the report to the SHPO in June.

Field work is nearing completion for the archaeological survey, although delays associated with field interference by members of the public and agricultural practices have been experienced. Field work is expected to be completed in early June with a report submitted to the SHPO in late June or early July. To date, no finds have warranted a recommendation of avoidance.

The SHPO is currently utilizing its full 30-day review period for report review, so we would expect final coordination by the end of July or early August 2021.

7. *Please provide more information on the Applicant's review of drain tile in the project area.*

Kingwood Solar has begun talking with participating landowners to collect drain tile maps and locational data that may be available. Additionally, Greene County Soil & Water Conservation District has been contacted requesting what maps or data it may have with reference to drain tile on the Project Site and surrounding areas.

8. ***The Application, pages 2,3,5/136, says the Project output is 175 MW, but page 2/39 of the PJM System Impact Study for AD1-140, says 200 MW Output and 102 MW for Capacity. However, page 3/39 says the Customer Request was for 175 MW and 95.8 MW of Capacity. Page 10/39 says the Summer Peak Analysis-2021 was done for 200 MW, 102 MW capacity, and page 12/39 says the Winter Peak Analysis-2021 was done at 175 MW, 95.8 MW Capacity. Please confirm the output ability of the facility and explain why PJM has used 200 MW in their Summer Peak analysis.***

Kingwood Solar is proposed at a capacity of 175 MW. The project was originally submitted to PJM in 2018 with a study capacity of 200 MW. As allowed by their tariff, however, the project was reduced to 175MW prior to the start of the System Impact Study. The Summer Peak Analysis was conducted during Feasibility Study prior to the reduction, which is referenced on Page 10 in the System Impact Study Report. Page 12 of the System Impact Study Report confirms that capacity was reduced to 175MW in the Winter Peak Analysis and 175 MW capacity is referenced throughout the rest of the report.

9. ***The ‘Contribution to Previously Identified Overloads’, Page 10/17 of the PJM Feasibility Study for AD1-140, shows Two contingency overloads, but page 11/39 of the PJM System Impact Study shows ‘None’ for the same ‘Contribution to previously Identified Overloads’ for both the Summer Peak Analysis-2021 and the Winter Peak Analysis-2021. Please explain the discrepancy between the findings of the Feasibility Study and the System Impact Study. Will the Facility need to include any upgrades, or will there be special considerations for the operation to avoid any Overloads?***

The AD1-140 Feasibility Study was conducted at 200 MW capacity, where the System Impact Study was conducted at 175 MW capacity. With this reduction, the understanding is that AD1-140 no longer contributes to the 'Previously Identified Overloads' referenced in the Feasibility Study. The Applicant is still awaiting the finalized Facilities Study from PJM, which will identify any network upgrades or overloads to which AD1-140 would contribute.

10. ***Section (4) on Page 19 of the application states, “The Project and its study area were then subjected to an evaluation in accordance with minimum siting criteria.” Please describe the evaluation the project and study area were subjected to. The section also states, “More detailed assessments to review characteristics of the Project Area were undertaken at that time.” Please describe what these detailed assessments consisted of.***

The Project study area was subject to an evaluation of solar irradiance, proximity of suitable electrical infrastructure, site accessibility, land ownership and tax parcel contiguity, existing land use, and environmental constraints based on available desktop resource mapping. Once lease agreements were pursued and acquired, more detailed assessments were undertaken including electrical engineering studies of transmission capacity, minimum acreage requirements for desired Project capacity, desktop assessments of environmental and ecological critical issues, as well as many of those evaluations reflected within the Application, like formal consultation with ODNR and USFWS, wetland and stream delineations, geotechnical investigations, noise evaluations, visual impact assessment, and proximity to other major infrastructure, such as airports or industrial facilities.

11. ***Section (4) on Page 19 of the application does not include a description of the project area selected for evaluation. Please provide a written description of the project area.***

The Project Area was selected through a process that lasted from 2017 to 2021, when the Project Area was finalized. The original project study area is described in Section (1) on page 17 of the application as being areas within Greene County with consideration of existing electric transmission system infrastructure and general land use. A more detailed description of the final Project Area is as follows: The Project Area is located entirely within Greene County, Ohio, and is generally bounded to the north by Clifton Road (Route 27), just over two miles south of Yellow Springs. Its eastern boundary is generally defined by N. Main Street (Route 72). To the south, the easternmost parcels are located on the outskirts of Cedarville, while the westernmost parcels are north of Wilberforce-Clifton Road (Route 94). The westernmost parcels are approximately 2.5 miles from Xenia. A latitude/longitude approximating the center of the Project Area is 39° 46' 03.04"N/83° 51' 38.04"W.

12. The electronic version of Figure 04-1 filed in the PUCO docketing information system is difficult to read. Please provide a clean and easy to read version of Figure 04-1.

A revised copy of Figure 04-1 is attached. As shown, the Project Area is located in the southwestern portion of Ohio, which receives the most direct solar resources within the state.

13. Figure 04-2 does not show setbacks from residences, property lines, utility corridors, and public rights-of-way, and any other constraints of the site design. Please provide a map that provides a constraint map showing setbacks from residences, property lines, utility corridors, and public rights-of-way, and any other constraints of the site design.

Figure DR1-13 illustrates the constraints considered for the Project layout. This map is intended to show the maximum extent of potential solar array areas while avoiding existing public rights-of-way and existing easements (utility corridors), with a minimum setback from abutting property lines of 25 feet.

14. How many comments and questions were received during the public informational meeting held for the project? Please provide a list of the comments and questions received and the responses provided.

More than 160 questions and comments were received during the public information meeting held on March 30th. Questions were submitted using the 'chat' function of the Zoom virtual meeting platform, therefore many of the questions received were repeated or generally similar to others. More than sixty minutes were spent answering over 55 of the questions asked in the second half of the public information meeting, a recording of which can be found at the link below.

URL: <https://www.youtube.com/watch?v=bTtA5czEh-s>

15. Please provide the following information for the 138 kV gen-tie line referenced on page 1 of the Application:

- 16. Tower designs, pole structures, conductor size and number per phase, and insulator arrangement.***
- 17. Base and foundation design.***
- 18. Cable type and size, where underground.***
- 19. Other major equipment or special structures.***

Kingwood Solar has not yet received its final Facilities Study Report from PJM, which in conjunction with the Construction Services Agreement will specify the required gen-tie facilities

in greater detail. The specific design process is expected to take place between January-April 2022. Please see Exhibit DR1-15 for a typical 138kV gen-tie pole structure.

- 20. Please update Figure 03-3 (Project Layout) and other relevant facility mapping to reflect the proposed location of the gen-tie line referenced on page 1 of the Application and provide associated shapefiles.**

An updated Figure 03-3 is attached. The associated shapefiles will be provided separately to OPSB Staff.

- 21. Referencing page 48 of the Application and the FAA determinations of no hazard received for this project, please fill out the attached MS Excel spreadsheet entitled Airspace Inquiry Log.**

Please see the attached MS Excel spreadsheet provided by OPSB Staff, with details populated by Kingwood Solar.

- 22. Please fully explain what financial assurance mechanism Kingwood Solar I, LLC will employ, and when the funds will be available to perform decommissioning activities. Staff would recommend that the decommissioning funds be posted in the form of a performance bond where the company is the Principal, the insurance company is the Surety, and the Ohio Power Siting Board is the Oblige.**

Within 1 year of Project operation commencement, Kingwood Solar is committed to providing and maintaining a performance guarantee to landowners in the form of a bond, letter of credit, or other form of financial security acceptable to landowners in their reasonable discretion, in order to secure the obligation of Kingwood Solar to decommission the Project and restore the property(s). The amount of financial security will be an estimate developed and signed by an Ohio Professional Engineer and is intended to account for the salvage value of the Project facilities to be removed.

- 23. What is the estimated total cost to decommission Kingwood Solar Farm excluding the salvage value of the solar equipment?**

Although it is difficult to accurately predict the decommissioning cost of a Solar Project that has yet to be built, Kingwood Solar has calculated this estimate to be between \$6-10 Million.

- 24. What is the estimated salvage value estimate of the solar equipment?**

In year 1 the salvage value of the solar equipment can be estimated at more than \$75 Million. Estimated salvage value of the solar equipment is much harder to predict in the out years based on improvements to PV recycling industry supply chain, fluctuating market conditions and value of each component. Kingwood Solar has calculated the estimated end-of-life salvage value of the Project equipment to be between \$5-8 Million.

- 25. Please explain how often the decommissioning costs will be re-evaluated.**

Decommissioning estimates, provided by an Ohio Professional Engineer as stated, will be updated every 5 years.

- 26. Please confirm/explain that the all the equipment will be removed within 6 months as referenced on page 36 of the Application. Does the Kingwood Solar anticipate any decommissioning activities would extend beyond 6 months, if so please explain?**

It is expected that, pending seasonality and unexpected weather conditions, the majority of project equipment can be removed in the first six months including panels, racking, inverters and electrical collection lines. Once project equipment is removed from the site, restoration work is expected to continue for up to another six months including fencing removal, roadway gravel removal, and soil decompaction, where roads, substation, and/or inverters were placed.

- 27. Staff understands that the decommissioning costs will be developed by a professional engineer within one year of the commercial operations date. Staff would recommend that the Applicant retain an independent, registered professional engineer, licensed to practice engineering in the state of Ohio to periodically estimate the total cost of decommissioning facility, salvage value, and appropriateness of any contingency percentage. Please indicate the Applicant's understanding and commitment to provide this to Staff and indicate when this would be provided.**

Kingwood Solar understands Staff's recommendation, and as stated above intends to have the cost estimates developed by an Ohio Licensed Professional Engineer every 5 years. This information can be shared with OPSB Staff upon request throughout the project's operational life.

- 28. Is the gen-tie line within one hundred feet of an occupied residence or institution? If yes, please provide the calculated electric and magnetic field strength levels at one meter above ground, under the conductors and at the edge of the right-of-way for (i) Winter normal conductor rating, (ii) Emergency line loading, and (iii) Normal maximum loading.**

No, the nearest residence currently measures more than 400 feet from the gen-tie line as shown in the updated Figure 03-3.

- 29. Referring to Figure 08-2 (Water Wells and Water Protection Areas) in the Application, how many water wells are within the project area?**

According to information available from ODNR mapping, a total of six water wells are located within or quite close to the Project Area (and conservatively counted as within). Two of these wells are indicated by ODNR as domestic wells, while the use of the others is not specified. It is possible that additional wells not mapped by ODNR exist within or proximate to the Project Area and/or that those wells mapped by ODNR may no longer be present or in-use. Coordination with individual landowners will occur prior to Project construction to confirm specific well presence and location and determine best management practices to avoid and minimize impacts.

- 30. What is the distance between the solar farm equipment and nearest water well within the project area?**

According to information available from ODNR mapping, three of the water wells are indicated directly within the area where solar facility equipment is proposed. As noted above, it is possible that these wells are not currently present or that additional wells exist that are not mapped by ODNR. Coordination with individual landowners will occur prior to construction to confirm specific well presence and locations, and to determine whether use of any wells present will be retained by the current user. This coordination will be reflected in final design and layout, with adjustments either to the layout or the well to be made accordingly. Impacts to water wells

associated with non-participating properties will be avoided, and appropriate coordination to either appropriately abandon or protect wells on participating properties will occur.

31. Please explain what possible avoidance, minimization, and/or mitigation measures Kingwood Solar I, LLC will employ during construction for water well locations in the project area.

Kingwood Solar will work with landowners within the Project Area to request information regarding specific location and other details available regarding groundwater wells prior to construction. For active drinking water wells located greater than 100 feet from the Project Area, no special measures are planned other than the implementation of Best Management Practices in accordance with Ohio EPA's Construction General Permit. Spill prevention measures will also be implemented, as discussed below. For construction efforts that are closer than 100 feet from an active drinking water well, Kingwood Solar will offer to obtain pre-construction well test data for standard priority pollutants and will offer to retest the water quality from the well within 6 months of completion of construction. As for all issues potentially related to construction, the Complaint Resolution Process will be available to those who believe their well has been affected by the Project. Kingwood Solar will make every effort to satisfactorily resolve all such issues brought forward.

32. Referencing page 62 of the Application, please explain what spill prevention practices will be implemented during construction and operation.

During construction, equipment fueling will occur in designated areas that incorporate containment for any fuel or chemical storage. Although significant volumes of materials with contamination potential are not anticipated, a formal Spill Prevention, Control, and Countermeasure (SPCC) Plan will be prepared and implemented if aboveground oil storage capacity will exceed the 1,320-gallon threshold. Even absent the need for a formal plan, construction equipment will carry sorbent materials intended for use if an unintended release were to occur so that prompt removal and, as appropriate, reporting can occur. Construction workers will be trained to take care with material with the potential for release and will receive training on emergency procedures to ensure prompt and efficient response in the event of an accidental release to the environment.

Once the Project is operational, lubricants within the transformer areas and fuel used in mowers would represent the primary risks of potential release. Transformer areas will have integrated containment, and mowers will be refueled with care in areas where spills can be readily contained, if necessary.

33. Do the trackers under consideration have a stow mode?

Yes, both racking models in consideration have a stow mode, for both wind protection and night-time setting, as indicated in the specifications provided in Appendix I of the Application.

34. Will the emergency Response Plan for the project referenced on page 51 of the Application be provided to OPSB Staff prior to the preconstruction conference?

The Applicant is willing to provide an emergency Response Plan prior to the preconstruction conference.

35. Please provide the current draft emergency action plan or an example emergency response plan.

Kingwood Solar is in the process of drafting a preliminary Emergency Response Plan, based on information specific to emergency response providers in Greene County and local jurisdictions. This ERP will be provided to Staff prior to the preconstruction conference.

36. Referencing the anticipated cleaning of the solar panels with water from page 45 of the Application, how often would these be cleaned on an annual basis?

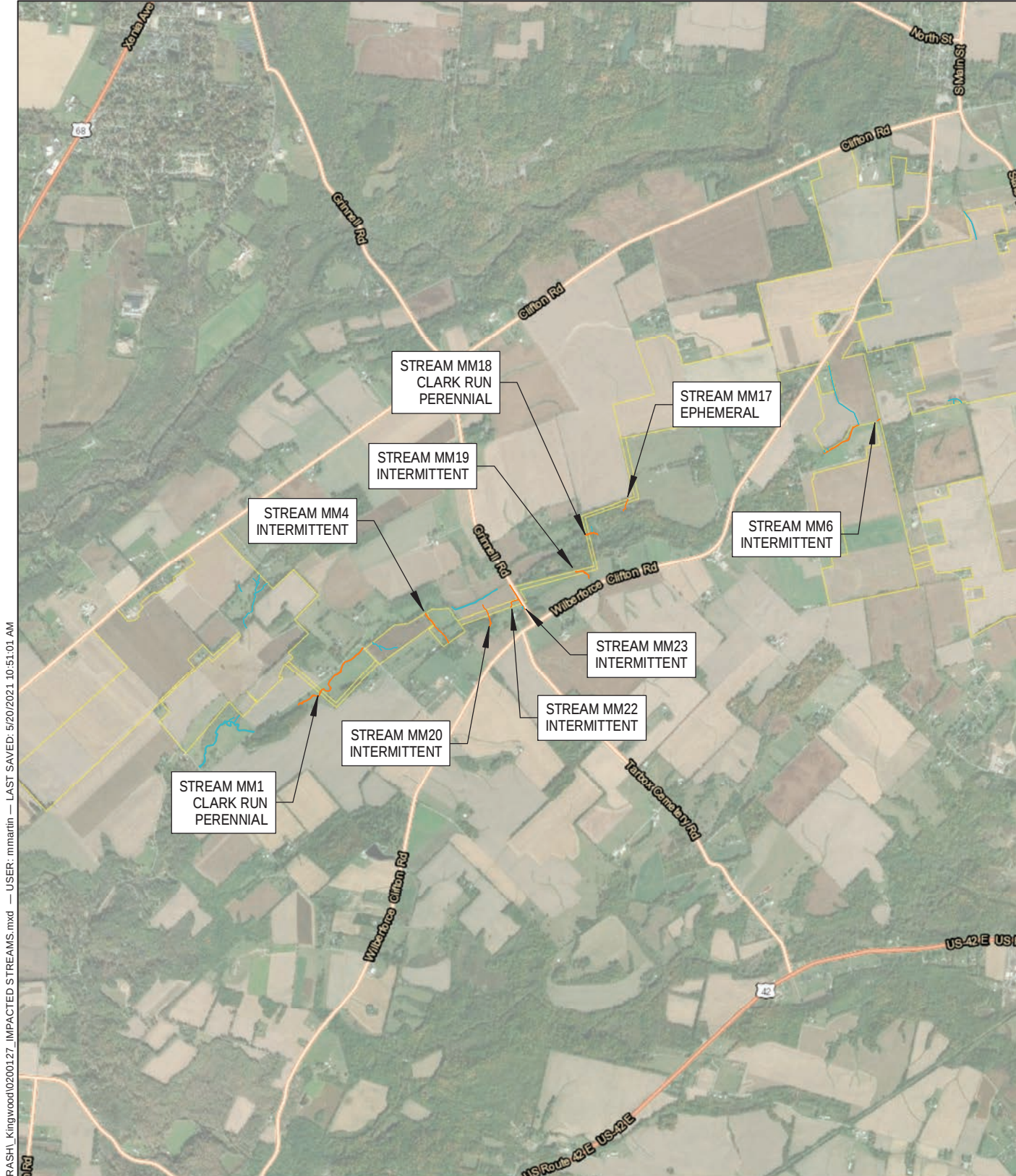
Kingwood Solar is expected to require panel cleaning between 1-2 times per year. This frequency will be assessed in better precision throughout the first year of operations, in accordance with local weather conditions, dust control, and facility production.

37. What is the approximate volume of water that would be required to clean the solar farm?

Kingwood Solar is expected to use an annual average of approximately 775 gallons per day (gal/day) for routine cleaning.

38. In the GIS data submitted, the facility components were submitted as one single shapefile layer, and we are not able to distinguish what is what. Please resubmit the facility components as individual layers.

Adjusted shapefiles of the facility components will be provided separately to OPSB Staff.



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UNIMPACTED STREAM

STREAM WITH PROPOSED COLLECTION LINE CROSSING

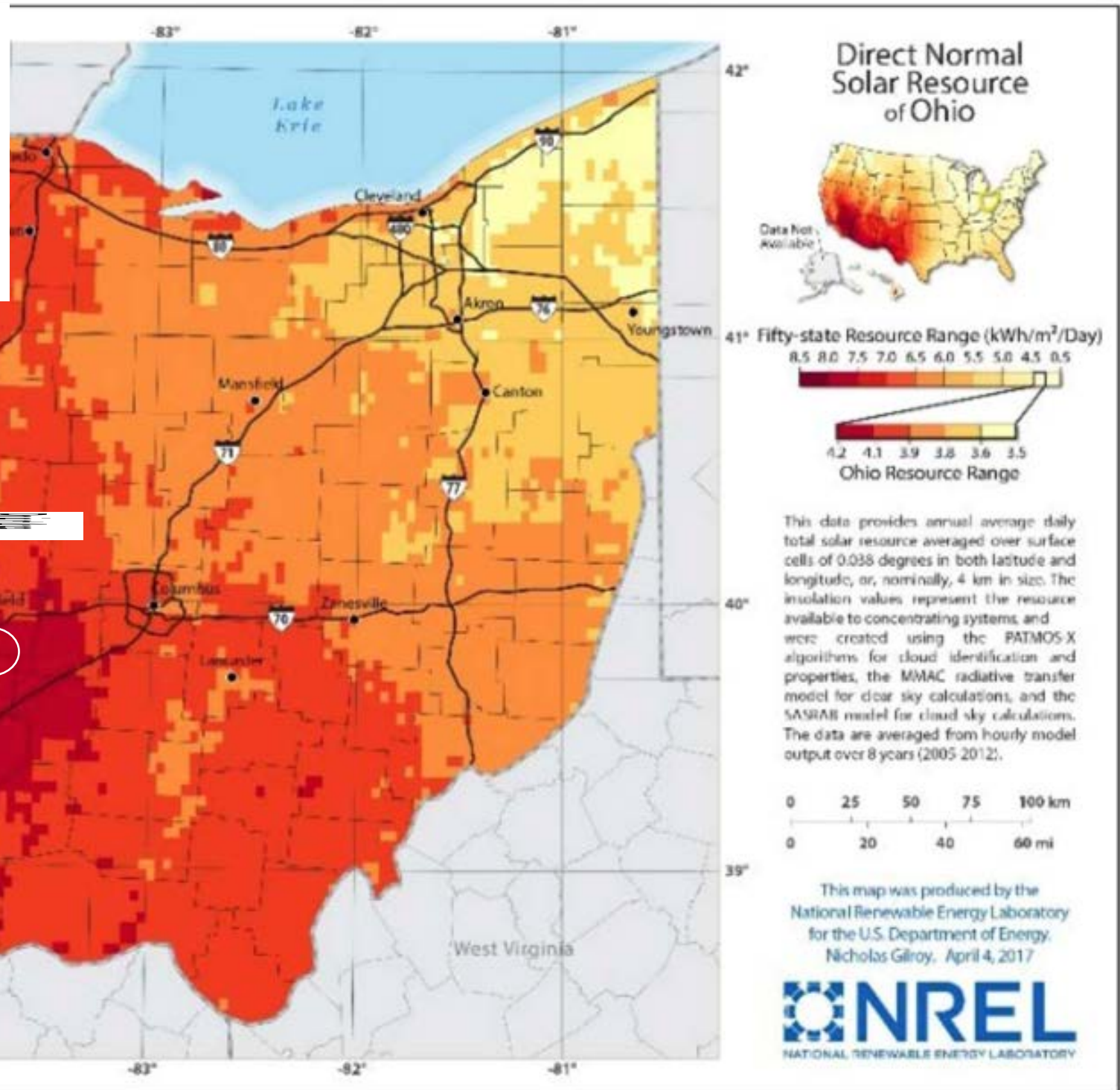
STUDY AREA

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Miles

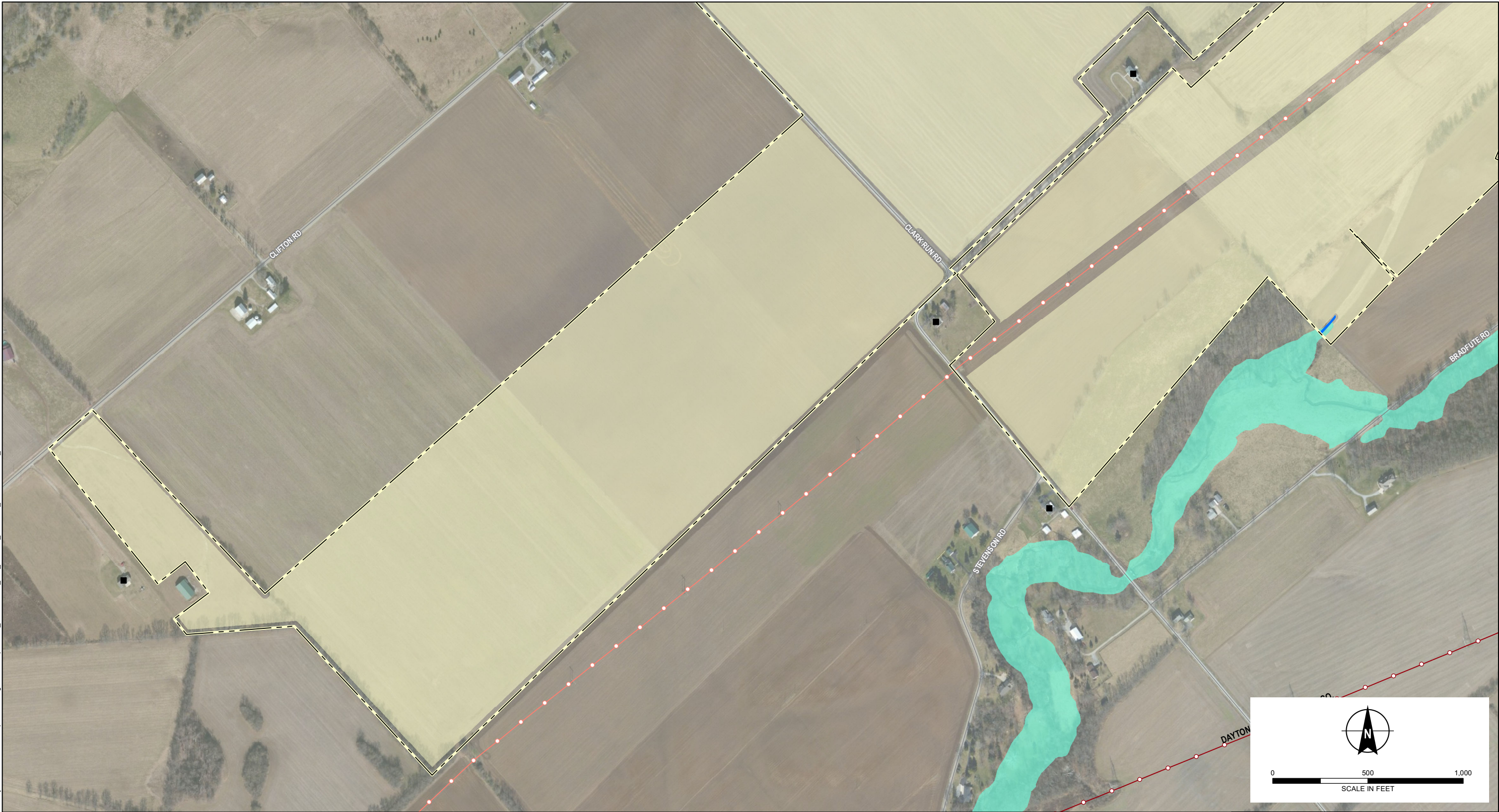
NOTES
 1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
 2. BASE MAP SOURCE: ESRI

Figure DR1-1
 Project Area Delineated Stream Segments
 Kingwood Solar
 Greene County, Ohio

Figure 04-1
Solar Resource Map of Ohio
Kingwood Solar
Greene County, Ohio



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LEGEND

- | | |
|--|---------------------------------|
| ■ HOUSE | ■ DELINEATED FEATURE |
| ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS) | |
| —○— 138KV TRANSMISSION LINE | ■ BUILDABLE AREA |
| —○— 345KV TRANSMISSION LINE | ■ 1% ANNUAL CHANCE FLOOD HAZARD |
| — NATURAL GAS PIPELINE | ■ PROJECT AREA |
| — ROAD | ■ COUNTY BOUNDARY |
| — HIGHWAY | |

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. KV = KILOVOLTS
3. 1% ANNUAL FLOOD CHANCE HAZARD ZONES REPRESENT 100-YEAR FLOOD ZONES. 0.2% ANNUAL FLOOD CHANCE HAZARD ZONES REPRESENT 500-YEAR FLOOD ZONES.
4. ELECTRIC TRANSMISSION LINES DATA SOURCE: DEPARTMENT OF HOMELAND SECURITY (DHS) HOMELAND INFRASTRUCTURE FOUNDATION-LEVEL DATA (HIFLD)
5. NATURAL GAS PIPELINES DATA SOURCE: DIGITIZED AT 1:24,000 FROM UNITED STATES DEPARTMENT OF TRANSPORTATION (U.S. DOT) NATIONAL PIPELINE MAPPING SYSTEM (NPMS)

6. FLOOD ZONES DATA SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
7. DELINEATED STREAMS AND WETLANDS DATA SOURCE: FIELD OBSERVATIONS BY HALEY & ALDRICH.
8. ROADS DATA SOURCE: OHIO DEPARTMENT OF TRANSPORTATION (ODOT)
9. COUNTY BOUNDARY DATA SOURCE: OHIO DEPARTMENT OF TRANSPORTATION (ODOT)
10. AERIAL IMAGERY SOURCE: ESRI



SHEET INDEX

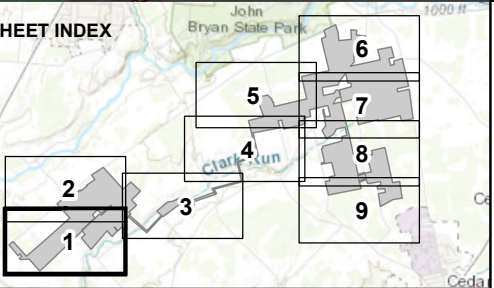


Figure DR1-13
Layout Constraint Considerations

Sheet 1 of 9

Kingwood Solar
Greene County, Ohio

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LEGEND

■

HOUSE

—○—

ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS)

—

138KV TRANSMISSION LINE

—

NATURAL GAS PIPELINE

—

ROAD

—

HIGHWAY

■

DELINEATED FEATURE

■

BUILDABLE AREA

■

1% ANNUAL CHANCE FLOOD HAZARD

■

0.2% ANNUAL CHANCE FLOOD HAZARD

■

PROJECT AREA

■

COUNTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. KV = KILOVOLTS

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10. AERIAL IMAGERY SOURCE: ESRI

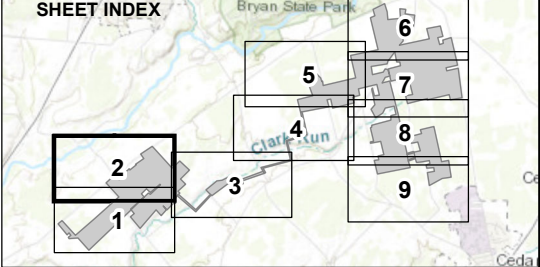


Figure DR1-13

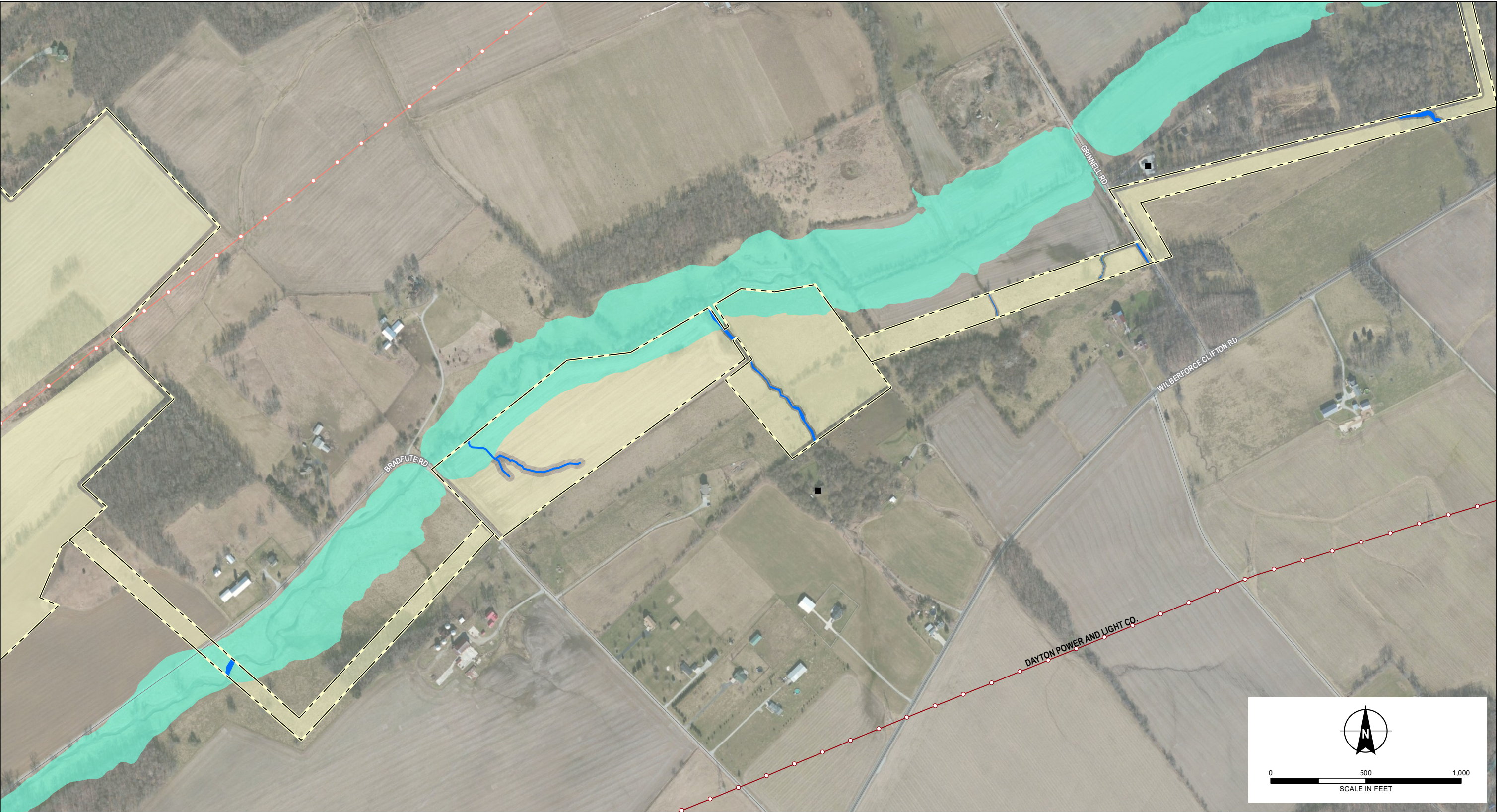
Layout Constraint Considerations

Sheet 2 of 9

Kingwood Solar

Greene County, Ohio

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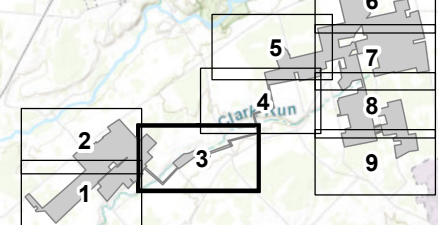
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|--|---------------------------------|
| ■ HOUSE | ■ DELINEATED FEATURE |
| ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS) | ■ BUILDABLE AREA |
| —○— 138kV TRANSMISSION LINE | ■ 1% ANNUAL CHANCE FLOOD HAZARD |
| —○— 345kV TRANSMISSION LINE | ■ PROJECT AREA |
| — NATURAL GAS PIPELINE | ■ COUNTY BOUNDARY |
| — ROAD | |
| — HIGHWAY | |

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. KV = KILOVOLTS
3. 1% ANNUAL FLOOD CHANCE HAZARD ZONES REPRESENT 100-YEAR FLOOD ZONES. 0.2% ANNUAL FLOOD CHANCE HAZARD ZONES REPRESENT 500-YEAR FLOOD ZONES.
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HALEY
ALDRICH

SHEET INDEX



**Figure DR1-13
Layout Constraint Considerations**

Sheet 3 of 9

Kingwood Solar
Greene County, Ohio

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LEGEND

- | | |
|--|---------------------------------|
| ■ HOUSE | ■ BUILDABLE AREA |
| — ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS) | ■ 1% ANNUAL CHANCE FLOOD HAZARD |
| — 138KV TRANSMISSION LINE | ■ PROJECT AREA |
| — NATURAL GAS PIPELINE | ■ COUNTY BOUNDARY |
| — ROAD | |
| — HIGHWAY | |
| ■ DELINEATED FEATURE | |

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HALEY
ALDRICH

SHEET INDEX

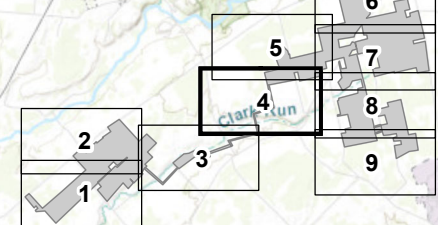


Figure DR1-13
Layout Constraint Considerations

Sheet 4 of 9

Kingwood Solar
Greene County, Ohio

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LEGEND

HOUSE

ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS)

138KV TRANSMISSION LINE

NATURAL GAS PIPELINE

ROAD

HIGHWAY

DELINEATED FEATURE

BUILDABLE AREA

1% ANNUAL CHANCE FLOOD HAZARD

PROJECT AREA

COUNTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

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HALEY

ALDRICH

SHEET INDEX

Figure DR1-13

Layout Constraint Considerations

Sheet 5 of 9

Kingwood Solar

Greene County, Ohio

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LEGEND

HOUSE

138kV TRANSMISSION LINE

NATURAL GAS PIPELINE

ROAD

HIGHWAY

DELINEATED FEATURE

BUILDABLE AREA

1% ANNUAL CHANCE FLOOD HAZARD

0.2% ANNUAL CHANCE FLOOD HAZARD

PROJECT AREA

COUNTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

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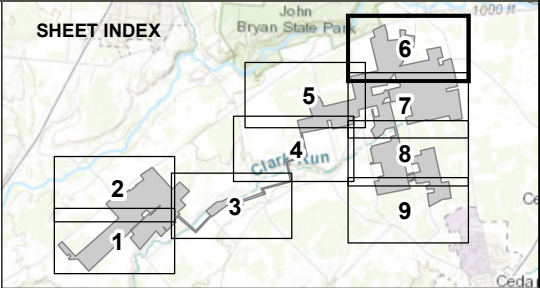
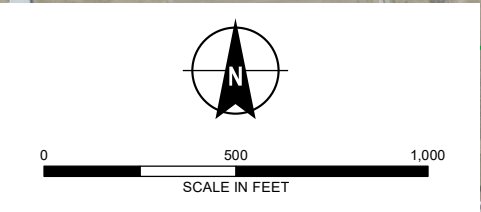


Figure DR1-13
Layout Constraint Considerations

Sheet 6 of 9

Kingwood Solar
Greene County, Ohio

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LEGEND

- HOUSE
- ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS)
 - 138KV TRANSMISSION LINE
- NATURAL GAS PIPELINE
- ROAD
- HIGHWAY
- DELINEATED FEATURE

- BUILDABLE AREA
- 1% ANNUAL CHANCE FLOOD HAZARD
- PROJECT AREA
- COUNTY BOUNDARY

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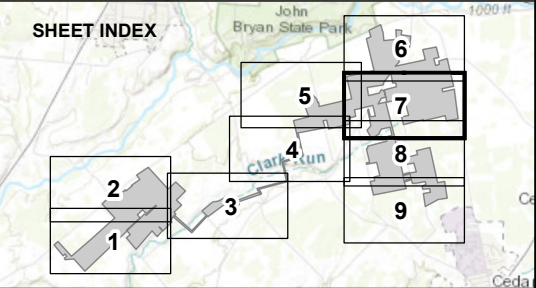


Figure DR1-13
Layout Constraint Considerations

Sheet 7 of 9

Kingwood Solar
Greene County, Ohio

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LEGEND

■

HOUSE

—○—

ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS)

—

345KV TRANSMISSION LINE

—

NATURAL GAS PIPELINE

—

ROAD

—

HIGHWAY

■

DELINEATED FEATURE

■

BUILDABLE AREA

■

1% ANNUAL CHANCE FLOOD HAZARD

—

PROJECT AREA

—

COUNTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

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HALEY
ALDRICH

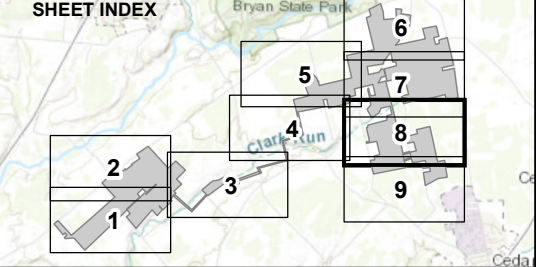


Figure DR1-13

Layout Constraint Considerations

Sheet of 9

Kingwood Solar
Greene County, Ohio

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LEGEND

■

HOUSE

—○—

ELECTRIC TRANSMISSION LINE, BY VOLTAGE IN KV (KILOVOLTS)

—

345KV TRANSMISSION LINE

—

NATURAL GAS PIPELINE

—

ROAD

—

HIGHWAY

■

DELINEATED FEATURE

■

BUILDABLE AREA

■

1% ANNUAL CHANCE FLOOD HAZARD

■

PROJECT AREA

■

COUNTY BOUNDARY

NOTES

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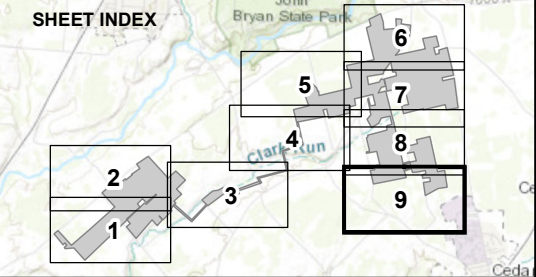
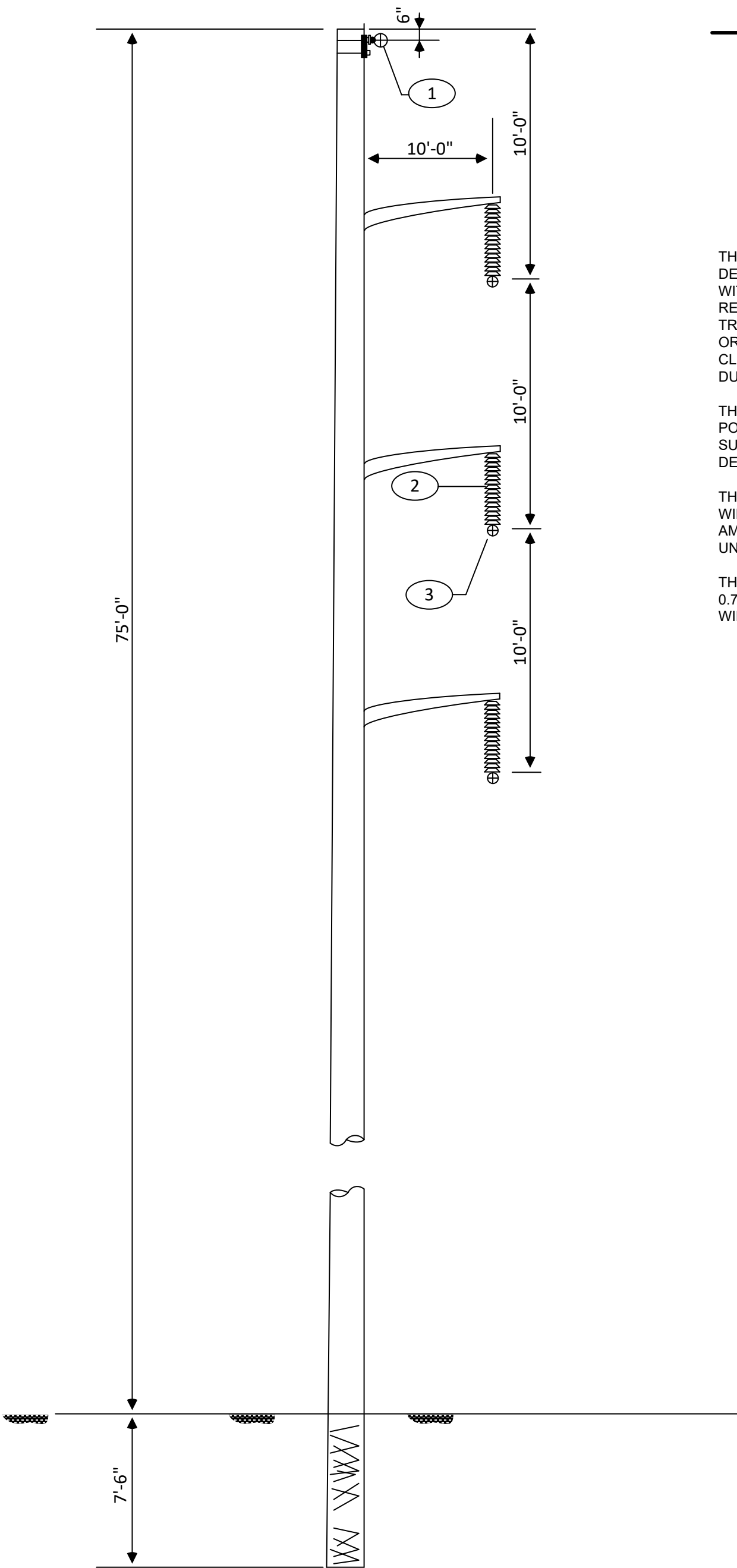


Figure DR1-13

Layout Constraint Considerations

Sheet 9 of 9

Kingwood Solar
Greene County, Ohio



NOTES

- 1 SHIELD WIRE
- 2 INSULATOR
- 3 PHASE CONDUCTORS

THE 138 KV GEN-TIE LINE SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH NESC (IEEE C2) AND ANY SPECIFIC REQUIREMENTS ESTABUSHED BY UTILITY, TRANSPORTATION AND LOCAL ORDINANCES LINE CROSSINGS AND CLEARANCES SHALL BE CONFIRMED DURING THE DETAILED DESIGN PHASE.

THE QUANTTTIES AND HEIGHT OF THE POLES SHOWN ON THIS DRAWING ARE SUBJECT TO CONFIRMATION DURING DETAILED FIELD SURVEY AND DESIGN.

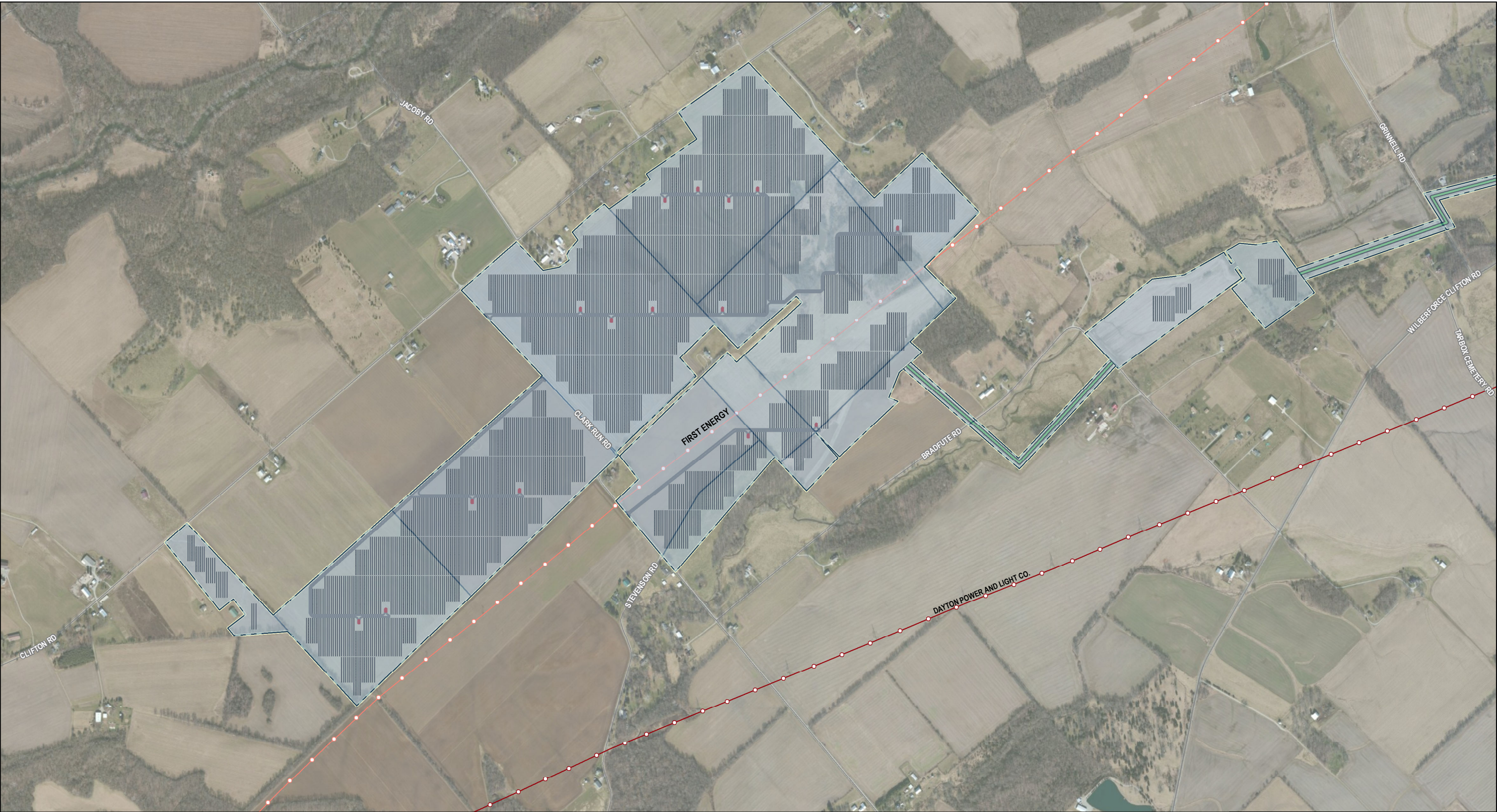
THE MAXIMUM MID-SPAN LINE SAG WILL. BE CALCULATED AND SET AT THE AMBIENT TEMPERATURE OF 130 DEG F UNDER MAXIMUM LOAD CONDITION.

THE GROUND (SHIELD) WIRE SHALL BE 0.75-INCH OPTICAL GROUND WIRE (OPGW).

138kV STEEL POLE TYPE - 75'

			Detail Description	Job No.
				Filename
				Date
				Scale
				Sketch

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POTENTIAL SOLAR ARRAY

POTENTIAL TRANSFORMER PAD

POTENTIAL COLLECTION LINE

POTENTIAL GRAVEL ROAD

SUBSTATION

138 kV TRANSMISSION LINE

345kV TRANSMISSION LINE

ROAD

HIGHWAY

PROJECT AREA

PARCEL BOUNDARY

PROJECT PARCEL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

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HALEY
ALDRICH

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0

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2,000

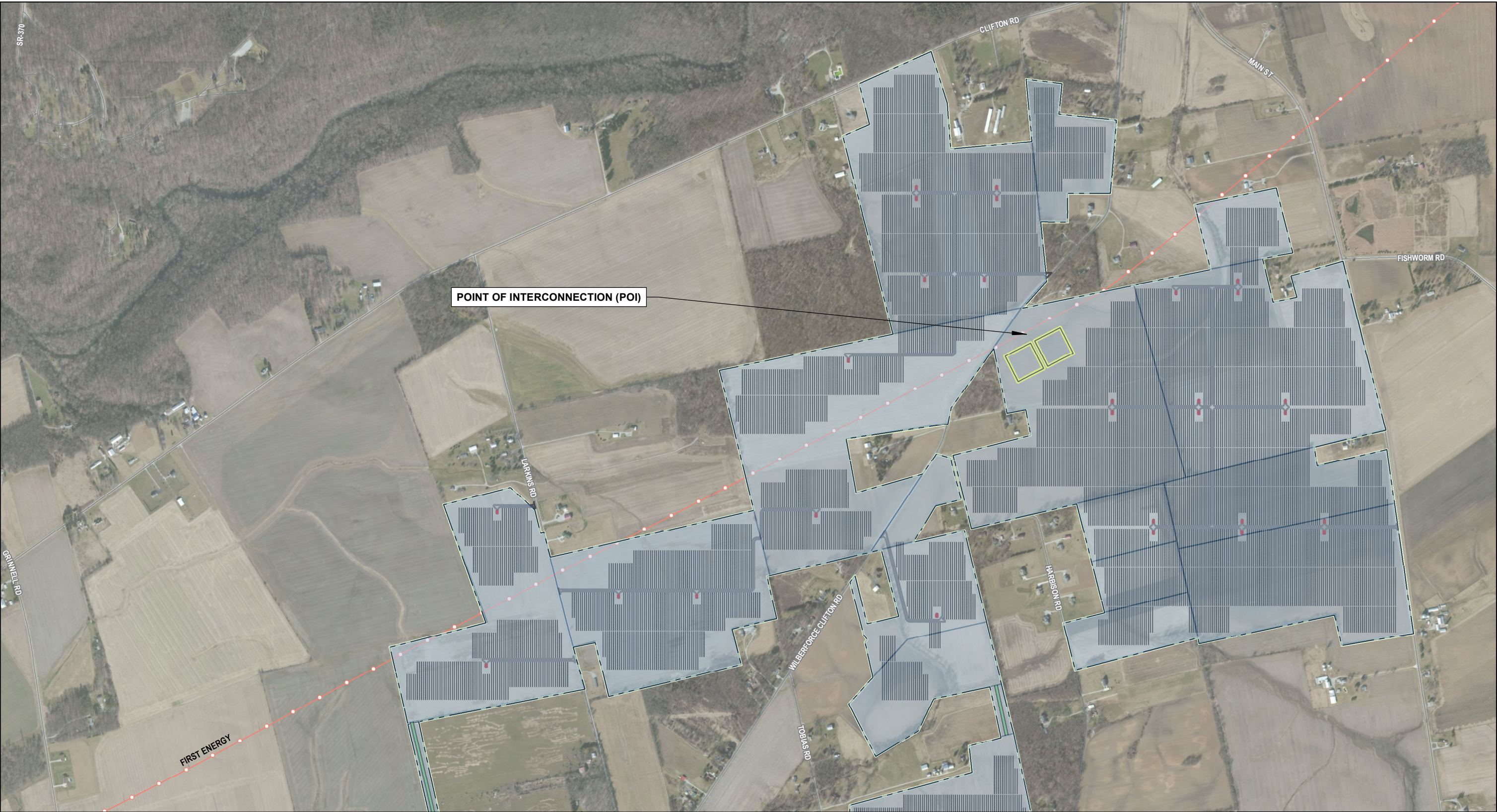
SCALE IN FEET

Updated Figure 03-3
Project Layout

Sheet 1 of 3

Kingwood Solar
Greene County, Ohio

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POTENTIAL SOLAR ARRAY

POTENTIAL TRANSFORMER PAD

POTENTIAL COLLECTION LINE

POTENTIAL GRAVEL ROAD

SUBSTATION

138 KV TRANSMISSION LINE

345KV TRANSMISSION LINE

ROAD

HIGHWAY

PROJECT AREA

PARCEL BOUNDARY

PROJECT PARCEL

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HALEYALDRICH

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2,000

SCALE IN FEET

SHEET INDEX

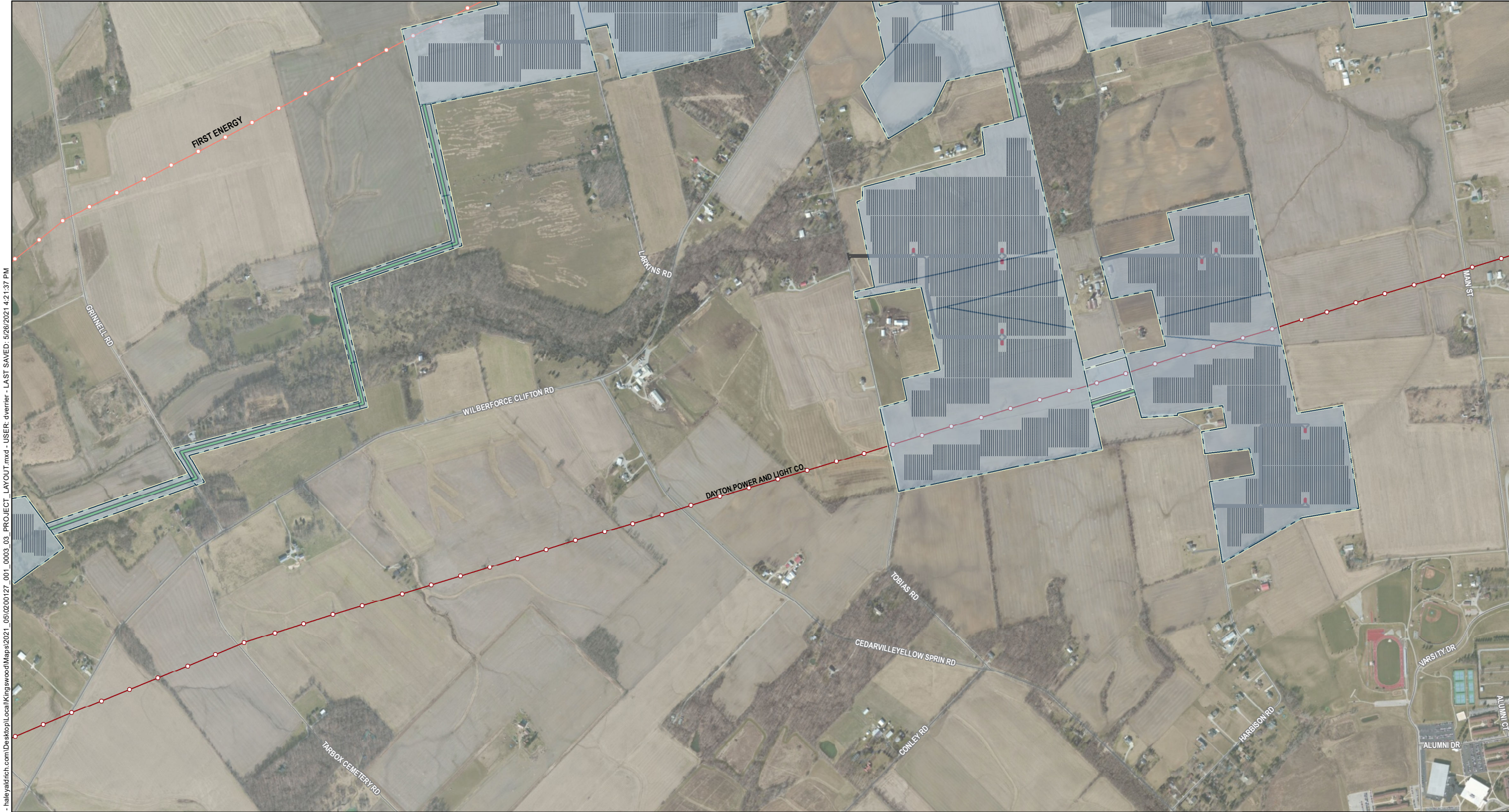
Updated Figure 03-3

Project Layout

Sheet 2 of 3

Kingwood Solar

Greene County, Ohio



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LEGEND

POTENTIAL SOLAR ARRAY

345KV TRANSMISSION LINE

POTENTIAL TRANSFORMER PAD

ROAD

POTENTIAL COLLECTION LINE

HIGHWAY

POTENTIAL GRAVEL ROAD

PROJECT AREA

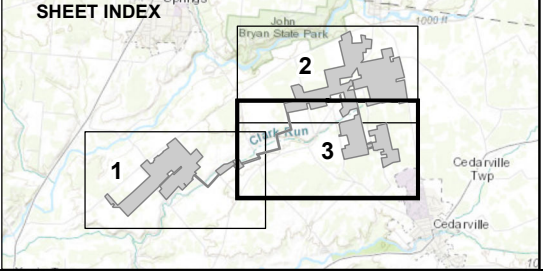
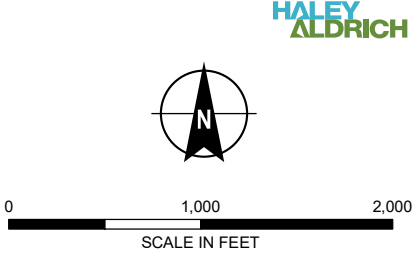
SUBSTATION

PARCEL BOUNDARY

138 kV TRANSMISSION LINE

PROJECT PARCEL

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Updated Figure 03-3
Project Layout

Sheet 3 of 3

Kingwood Solar
Greene County, Ohio

OHIO POWER SITING BOARD PROJECT										
OPSB Project Name: Kingwood Solar I LLC					OPSB Certificate Number#		21-0117-EL-BGN		Issued / Expires:	
Airspace Case Study Numbers										
State ASN (If Issued)	Federal ASN	Status	Structure	Duration	Associated City	State	Latitude	Longitude	Site Elevation	AGL
	2021-AGL-35-OE	Determined	Solar Panel	Permanent	Clifton	OH	39° 46' 12.72" N	83° 52' 33.59" W	1003'	20'
	2021-AGL-36-OE	Determined	Solar Panel	Permanent	Clifton	OH	39° 44' 51.16" N	83° 54' 25.49" W	931'	20'
	2021-AGL-37-OE	Determined	Solar Panel	Permanent	Clifton	OH	39° 47' 32.2" N	83° 49' 36.05" W	1003'	20'
	2021-AGL-38-OE	Determined	Solar Panel	Permanent	Clifton	OH	39° 45' 34.69" N	83° 49' 4.83" W	1059'	20'

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Commission of Ohio Docketing Information System on

6/3/2021 7:58:31 AM

in

Case No(s). 21-0117-EL-BGN

Summary: Notice Notice of Responses to Data Requests from the Staff of the Ohio Power Siting Board electronically filed by Mr. Michael J. Settineri on behalf of Kingwood Solar I LLC