

AEUG Madison Solar, LLC
Kentucky State Board on Electric
Generation and Transmission Siting
Application

Application Documents
Site Assessment Report
Volume III
Case No. 2020-00219

December 2020



APPENDIX F
Visual Assessment



Technical Memorandum

To: AEUG Madison Solar, LLC
From: Tetra Tech, Inc.
Date: November 13, 2020
Subject: Madison Solar Project Visual Assessment

Tetra Tech, Inc. (“Tetra Tech”) was contracted by AEUG Madison Solar, LLC to perform a visual assessment for the Madison solar project that is proposed to have a nameplate capacity of up to 100 megawatts (“Project”). The Project is located on approximately 2,021 acres of private land in Madison County, Kentucky (“Project Area”). The main Project components evaluated in the visual assessment include solar panels, perimeter fencing, electric substation, and an operations and maintenance building.

Desktop Review and Field Investigation

The Project Area is located between the towns of Richmond and Ford in Madison County. It is roughly bounded by the intersection of Highways 388 and 627 on the north, Dr Robert R Martin Bypass on the south, State Highway 388 on the east, and U.S. Highway 75 on the west. The topography in the area consists of a series of gently to moderately rolling hills and swales. Land use is primarily pasture and agricultural, with no large forested areas, except outside of the 2-mile buffer area in and around the state park. Tree lines typically occur at parcel boundaries, in riparian zones, and along roadways. Scattered rural residential development, commercial and retail businesses, communication facilities, and vehicular transportation network are all present within and surrounding the Project Area.

A review of potential visual resources within 2 miles of the Project Area included, but was not limited to, recreation areas, local community resources (e.g., schools, libraries, places of worship), and other scenic resources. After review of these potential sensitive resources, Tetra Tech identified twelve representative viewpoints for investigation in the field. These points represent locations around the Project where viewers could notice a change in the existing landscaping setting due to the presence of Project facilities, including local schools, key travel-ways in the county, areas with clusters of residential properties, representative commercial areas, and recreation areas.

In addition to visiting each of these locations in the field, three visual simulations (VP-03, VP-10, VP-11) and three line-of-sight graphics (VP-07, VP-09, VP-12) were developed for six of the viewpoints for use in the visual assessment. Figure 1 depicts the Project site layout, visual study area, and location of the twelve viewpoints visited in the field.

Tetra Tech conducted field visits from July 7 to 8, 2020 and again from August 31 to September 1, 2020 and captured digital photographs from each of the twelve identified viewpoints. Technical photographs from the field visits were used for the subsequent visual assessment.

Visual Assessment

Each viewpoint was evaluated to determine if the Project Area would be potentially visible and in what context that view would be. Photographs, line-of-sight graphics, and visual simulations were developed and referenced to assist in the analysis. A line of sight is the direct line between the viewer and a distant object. Visual simulations combine photographs with rendered computer models of Project facilities to predict what would be seen if the proposed Project were built in the photographed setting. Both the line-of-sight and visual simulations assist in determining if views may be obstructed by intervening terrain, vegetation, or structures that exist between a viewpoint and the Project.

VP-01: Fort Boonesborough State Park

- **View Represented:** Recreation (public park)
- **Location:** VP-01 is located just north of the Kentucky River and between private agricultural lands in Ford, Kentucky at the Fort Boonesborough State Park. The photograph was taken from the top of a hill approximately 0.15 mile east of Four Mile Road, looking southwest towards the Project Area. This viewpoint is located outside of the 2-mile buffer area; however, because it is a local historic and recreational resource, it has been included in the report.
- **Viewing Direction to Project:** Southwest
- **Distance to Project:** Approximately 21,595 feet (approximately 4.09 miles)
- **Corresponding Figure:** See Photolog (Attachment C)

The existing landscape setting is characterized by moderately rolling terrain. From the viewpoint location, the terrain drops off towards the river and then, just as gradually, rolls back up. The area is within a forested setting with some grasses in the foreground near the road and shifting towards mostly deciduous trees down to the river and also along the ridges. Human-made features consist of grey power lines in the distance. According to Photograph 1 (VP-01), views of the Project will be entirely screened by vegetation and topography between the viewer and the Project's perimeter fence line. Additionally, given the distance from the Project Area, contrast is anticipated to be negligible.

VP-02: Lost Fork Road

- **View Represented:** Residential, commercial, traveler
- **Location:** VP-02 is located at the intersection of Boonesborough Road and Lost Fork Road near a commercial building (General Dollar store), rural residential properties, and a residential neighborhood northwest of the Project Area. The photograph was taken from Lost Fork Road, looking southeast towards the Project Area.
- **Viewing Direction to Project:** Southeast
- **Distance to Project:** Approximately 7,181 feet (approximately 1.36 miles)
- **Corresponding Figure:** See Photolog (Attachment C)

The existing landscape setting is characterized by gently rolling terrain in the foreground. The area is largely rural with agricultural and pastoral fields. Human-made features consist of pavement and a wire fence with wood posts and a metal gate immediately in front of the viewpoint. In the distance, where trees

are not blocking the views, several houses are visible. Vegetation includes blocks of green grasses, as well as clumps of dense patches of trees and shrubs along linear features such as creeks. According to Photograph 2 (VP-02), views of the Project are likely not visible from this location due to topography and terrain. Therefore, contrast is expected to be weak to negligible at this location.

VP-03: Three Forks Substation

- **View Represented:** Residential, traveler, industrial
- **Location:** VP-03 is located along Three Forks Road just south of the Project Area, near a cluster of rural residential neighborhoods and a substation. The photograph was taken from Three Forks Road, looking northeast towards the Project Area.
- **Viewing Direction to Project:** Northeast
- **Distance to Project:** Approximately 792 feet (approximately 0.15 mile)
- **Corresponding Figure:** Visual Simulation 1 (Attachment A)

The existing landscape setting is characterized by gently to moderately rolling terrain in the foreground. The area is largely rural with agricultural and pastoral fields. Human-made features consist of a crisscross pattern of power lines and poles and an off-white shop/agriculture building in the foreground. The middleground includes scattered rural development. Vegetation includes patches of green grasses, tan agricultural fields, and clumps of dense patches of trees and shrubs throughout and along the perimeter of the area. According to Visual Simulation 1, the Project will be visible from this location, but the view will be short-term for people traveling along the road. The Project would introduce gray color, geometric shapes, and horizontal lines into the landscape setting. The Project would attract attention, but the portion of the Project that would be visible would not dominate the landscape because the panels follow the lines of the existing power lines, as well as the dark green of the vegetation, therefore creating moderate contrast.

VP-04: Red House Road (South)

- **View Represented:** Traveler, residential
- **Location:** VP-04 is located along State Highway 388 (Red House Road). The photograph was taken from Red House Road, looking northwest towards the Project Area.
- **Viewing Direction to Project:** Northwest
- **Distance to Project:** Approximately 1,109 feet (approximately 0.21 mile)
- **Corresponding Figure** See Photo Log (Attachment C)

The existing landscape setting is characterized by gently to moderately rolling terrain. The area is largely rural with agricultural and pastoral fields. Human-made features consist of power lines on wood structures, crisscrossing fence lines, and a small red barn in the foreground. Rural residential areas surround this viewpoint. Vegetation includes grasses and dense patches of trees and shrubs. According to Photograph 4 (VP-04), views of the Project are likely to be partially screened by a dense patch of vegetation. The fence and a few higher elevated panels along the hilltops may be visible where tree cover is not present. Some portions of the solar array may be visible between stands of vegetation; however, if any portion is visible, it

would not attract attention and would be a subordinate feature in the landscape setting. Therefore, contrast is anticipated to be weak to negligible.

VP-05: Three Forks Road (North)

- **View Represented:** Residential, traveler
- **Location:** VP-05 is located along Three Forks Road near a cluster of rural residential properties. The photograph was taken from Three Forks Road, looking north towards the Project Area.
- **Viewing Direction to Project:** East
- **Distance to Project:** Approximately 1,742 feet (approximately 0.33 mile)
- **Corresponding Figure:** See Photo Log (Attachment C)

The existing landscape setting is characterized by gently rolling terrain. The area is largely rural with agricultural and pastoral fields including rural residential properties dispersed throughout. Human-made features consist of several small barns varying in color from browns to greens to tans and white, wood fence lines, and power lines following the road where the photo was taken. Vegetation includes some lighter and darker green grasses and thick patch of trees and shrubs as well as some dispersed trees and shrubs throughout. According to Photograph 5 (VP-05), views of the Project are likely to be screened by vegetation and topography between the viewer and the Project's perimeter fence line. The fence and a few higher elevated panels along the hilltops may be visible where tree cover is not present. Some portions of the solar array may be visible where vegetation is not present; however, if any portion is visible, it would not attract attention and would be a subordinate feature in the landscape setting. Therefore, contrast is anticipated to be weak to negligible.

VP-06: Union City Road and Hunter Lane

- **View Represented:** Residential, traveler
- **Location:** VP-06 is located along Union City Road at the intersection of Union City Road and Brookstown Road/Hunter Road near a rural residential neighborhood, east of the Project Area. The photograph for this viewpoint was taken on Union City Road, looking northwest towards the Project Area.
- **Viewing Direction to Project:** Northwest
- **Distance to Project:** Approximately 8,923 feet (approximately 1.69 miles)
- **Corresponding Figure:** See Photolog (Attachment C)

The existing landscape setting is characterized by moderately rolling terrain. The area is largely rural with agricultural and pastoral fields as well as rural residential areas. Human-made features consist of paved roads and yellow lines, fence lines and power lines paralleling the road in the foreground and tall structures (likely cell towers) and buildings in the vicinity. Vegetation includes grasses along the road and in the fields and dense patches of trees and shrubs that appear to be in lines as they follow the existing roads and property lines. According to Photograph 6 (VP-06), views of the Project likely will be mostly screened by vegetation between the viewer and the Project's perimeter fence line. The fence and a few higher elevated panels along the hilltops may be visible where tree cover is not present. Some portions of the solar array

may be visible between stands of vegetation; however, if any portion is visible, it would not attract attention and would be a subordinate feature in the landscape setting. Therefore, contrast is anticipated to be weak to negligible.

VP-07: Glenn R. Marshall Elementary School

- **View Represented:** Public school
- **Location:** VP-07 is located near Dr. Robert R. Martin Bypass at an intersection of the north end of the Glenn R. Marshall Elementary School property. The photograph was taken from the school property parking lot, looking north towards the Project Area.
- **Viewing Direction:** North
- **Distance to Project:** Approximately 7,550 feet (approximately 1.43 miles)
- **Corresponding Figure:** Line of Sight 1 (Attachment B)

The existing landscape is characterized as flat to gently sloping terrain in the foreground. The area includes an elementary school surrounded by vegetated areas and rural residential areas. Human-made features consist of a paved parking lot, tall light poles surrounding the baseball field and parking lot, fencing, a brown and white building, and school buses lined up in the parking area. Vegetation includes maintained grasses surrounded by trees along the perimeter of the school. According to Line of Sight 1 and Photograph 7 (VP-07), the Project would be entirely screened from this viewpoint due to topography. A large hill is located approximately 0.75 mile away from VP-07 as well as vegetation in the immediate foreground. Therefore, the contrast of the Project is anticipated to be negligible.

VP-08: I-75 and Lexington Road

- **View Represented:** Commercial, traveler
- **Location:** VP-08 is located along Lexington Road just to the northwest of the U.S. Highway onramp and to the southeast of South Keeneland Drive. The photograph was taken at a road in town looking northeast towards to the Project.
- **Viewing Direction:** Northeast
- **Distance to Project:** Approximately 10,666 feet (approximately 2.02 miles)
- **Corresponding Figure:** See Photo Log (Attachment C)

The existing landscape setting is characterized by flat to gently rolling terrain. The commercial area is within the city of Richmond and includes multiple fast-food restaurants and hotels. Human-made features consist of paved roads, parking lots, power lines, tall commercial signs that can be seen from the highway, and geometric shaped buildings of various colors. Maintained patches of grass and trees are located throughout. According to Photograph 8 (VP-08), views of the Project are likely not visible from this location due to tall structures in the foreground (businesses). Therefore, contrast is expected to be weak to negligible at this location.

VP-09: I-75

- **View Represented:** Traveler, residential
- **Location:** VP-09 is located along U.S. Highway 75 near the intersection of Colonel Road and Norton Drive, to the west of the Project. The photograph was taken from Google Earth on U.S. Highway 75 looking northeast towards the Project Area.
- **Viewing Direction:** Northeast
- **Distance to the Project:** Approximately 5,491 feet (approximately 1.04 mile)
- **Corresponding Figure:** Line of Sight 2 (Attachment B)

The existing landscape setting is characterized by moderately rolling terrain. The area is largely rural with pastoral fields along the highway as well as residential development. Human-made features consist of a brown fence in the distance as well as power lines. Vegetation includes grasses and dense patches of trees and shrubs, typically occurring at parcel lines and along roadways. According to Line of Sight 2 and Google Earth Photograph 9 (VP-09), the Project would be entirely screened from this viewpoint by topography and vegetation. A large hill is located approximately 0.2 mile away from VP-09. Therefore, the contrast of the Project is anticipated to be negligible.

VP-10: Three Forks Road (South)

- **View Represented:** Residential, traveler
- **Location:** VP-10 is located along Three Forks Road just south of the Project Area near the intersection with State Highway 388. The photograph was taken on Three Forks Road looking northeast towards the Project.
- **Viewing Direction:** Northeast
- **Distance to the Project:** Approximately 370 feet (approximately 0.07 miles)
- **Corresponding Figure:** Visual Simulation 2 (Attachment A)

The existing landscape setting is characterized by moderately rolling terrain in the foreground. The area is largely rural with agricultural and pastoral fields. Human-made features consist of several crisscrossing regional transmission lines and poles. Vegetation includes patches of green grasses, as well as dense patches of trees and shrubs along potential property lines. According to Visual Simulation 2, the Project will be visible from this location, but the view will be short-term for people traveling along the road. The Project would introduce dark and light gray color, geometric shapes, and horizontal lines into the landscape setting. The Project would attract attention, but the portion of the Project that would be visible would not dominate the landscape because the panels follow the lines of the existing power lines, as well as the dark green of the vegetation, therefore creating moderate contrast.

VP-11: Red House Road (North)

- **View Represented:** Residential, traveler
- **Location:** VP-11 is located just east of State Highway 388 within the Project Area. The photograph was taken looking southwest towards the Project.
- **Viewing Direction:** Southwest
- **Distance to the Project:** Within the Project Area
- **Corresponding Figure:** Visual Simulation 3 (Attachment A)

The existing landscape setting is characterized by moderately rolling terrain. The area is largely rural with agricultural and pastoral fields. Human-made features consist of various houses and buildings in the middleground. Vegetation includes blocks of green grasses and clumps of dense patches of trees and shrubs throughout the area. According to Visual Simulation 3, the Project will be visible from this location. Roadways and rural residential development located around the Project Area would have elevated views looking towards the Project. Views would vary from completely screened to partially screened to unobstructed. The Project would introduce gray color, geometric shapes, and horizontal lines into the landscape setting. The Project would attract attention, but the portion of the Project that would be visible would not dominate the landscape because the panels follow the curves of the land, as well as the dark green color of the vegetation, therefore creating moderate contrast.

VP-12: Hackett Road and Peacock Road

- **View Represented:** Residential, travelers
- **Location:** VP-12 is located at the intersection of Peacock Road and Hackett Road. The photograph was taken from Google Earth on the road looking west towards the Project.
- **Viewing Direction:** West
- **Distance to the Project:** Approximately 6,230 feet (approximately 1.18 mile)
- **Corresponding Figure:** Line of Sight 3 (Attachment B)

The existing landscape setting is characterized by flat to moderately rolling terrain in the foreground. The area is largely rural with agricultural and pastoral fields. Human-made features consist of dirt roads, wire fencing with wood posts, and power lines in the foreground. Vegetation includes blocks of green grasses and clumps of dense patches of trees and shrubs in the middleground. According to Line of Sight 3 and Google Earth Photograph 12 (VP-12), views of the Project will be mostly screened by vegetation between the viewer and the Project's perimeter fence line. A few higher elevated panels along the hilltops may be visible where tree cover is not present. Some portions of the solar array may be visible between stands of vegetation; however, if any portion is visible, it would not attract attention and would be a subordinate feature in the landscape setting. Therefore, contrast is anticipated to be weak to negligible.

Concluding Discussion

The proposed Project would introduce low vertical, geometric elements that are gray in color into a relatively rolling terrain landscape dominated by green vegetation and patches of trees and shrubs. Visual impacts

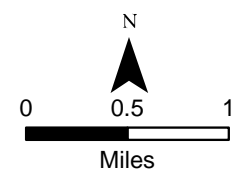
would vary depending on several factors, such as the distance of the viewer from the Project and whether views toward the Project are unobstructed or screened by vegetation, terrain, or development. The views can be vastly different from one location to another, even in proximity, because of the rolling terrain and vegetation. Viewers in proximity to the Project may have unobstructed or partially screened views and include adjacent rural residences and travelers along the local roads and highways. Existing vegetation between the solar arrays and the residences will be left in place, to the extent practicable, to help screen the Project and reduce visual impacts from the adjacent homes. It is anticipated that views of the Project from surrounding places (e.g., Richmond, Ford) would generally be screened by vegetation and structures associated with development. Roadways and rural residential development located outside of built communities would have elevated views towards the Project. Views would vary from completely screened to partially screened to unobstructed. Portions of the Project that would be visible would be seen in the context of existing development and would appear as a co-dominant feature in the landscape setting.

Madison Solar Project

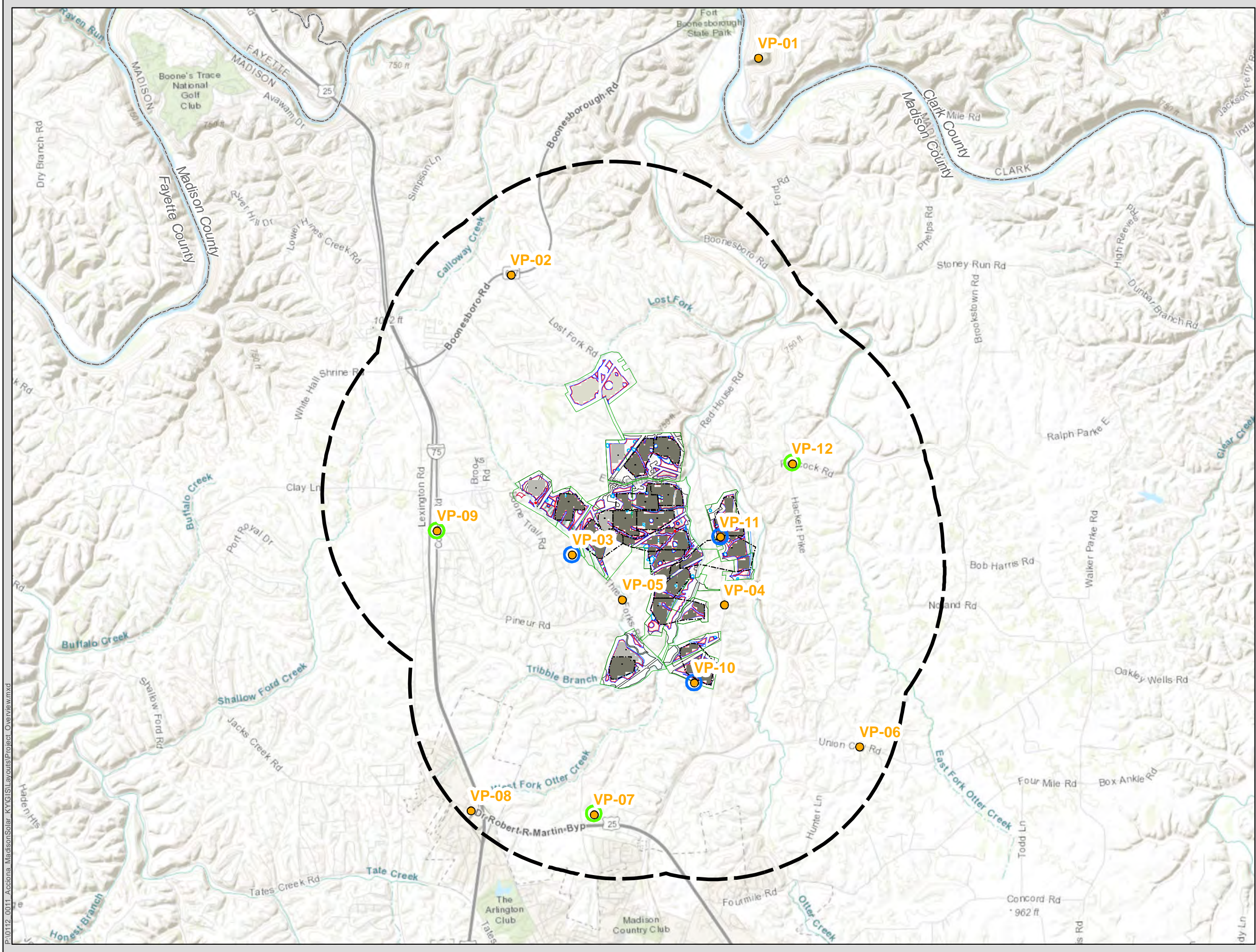
Figure 1 Site Plan & Viewpoints

Madison County, KY

- Viewpoint Location
- Line of Sight
- Visual Simulation
- 2-mile Study Area



NOT FOR CONSTRUCTION



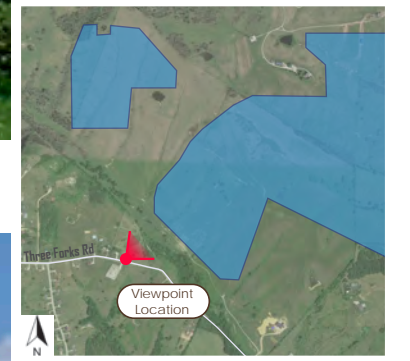
P:\0112_0011_Acciona_MadisonSolar_KY\GIS\Layouts\Project_Overview.mxd

ATTACHMENT A
Visual Simulations

Existing Conditions



*Visual Simulation
VP-03
Three Forks
Substation*



Simulated Conditions



Photograph Information

Time of photograph: 3:52 p.m.
Date of photograph: 7/7/2020
Weather condition: Partly Cloudy
Viewing direction: Northeast
Latitude: 37.814211°
Longitude: -84.297349°
Photo Location: The photo was taken along Three Forks Road approximately 800 feet southwest of the Project.

Existing Conditions



*Visual Simulation
VP-10
Three Forks Road
(South)*



Simulated Conditions



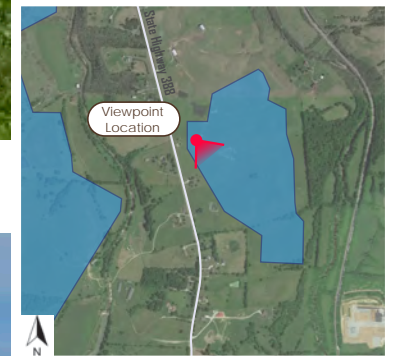
Photograph Information

Time of photograph: 5:10 p.m.
Date of photograph: 7/7/2020
Weather condition: Partly Cloudy
Viewing direction: Northeast
Latitude: 37.794137°
Longitude: -84.274703°
Photo Location: The photo was taken along Three Forks Road approximately 350 feet southwest of the Project.

Existing Conditions



*Visual Simulation
VP-11
Red House Road
(North)*



Simulated Conditions

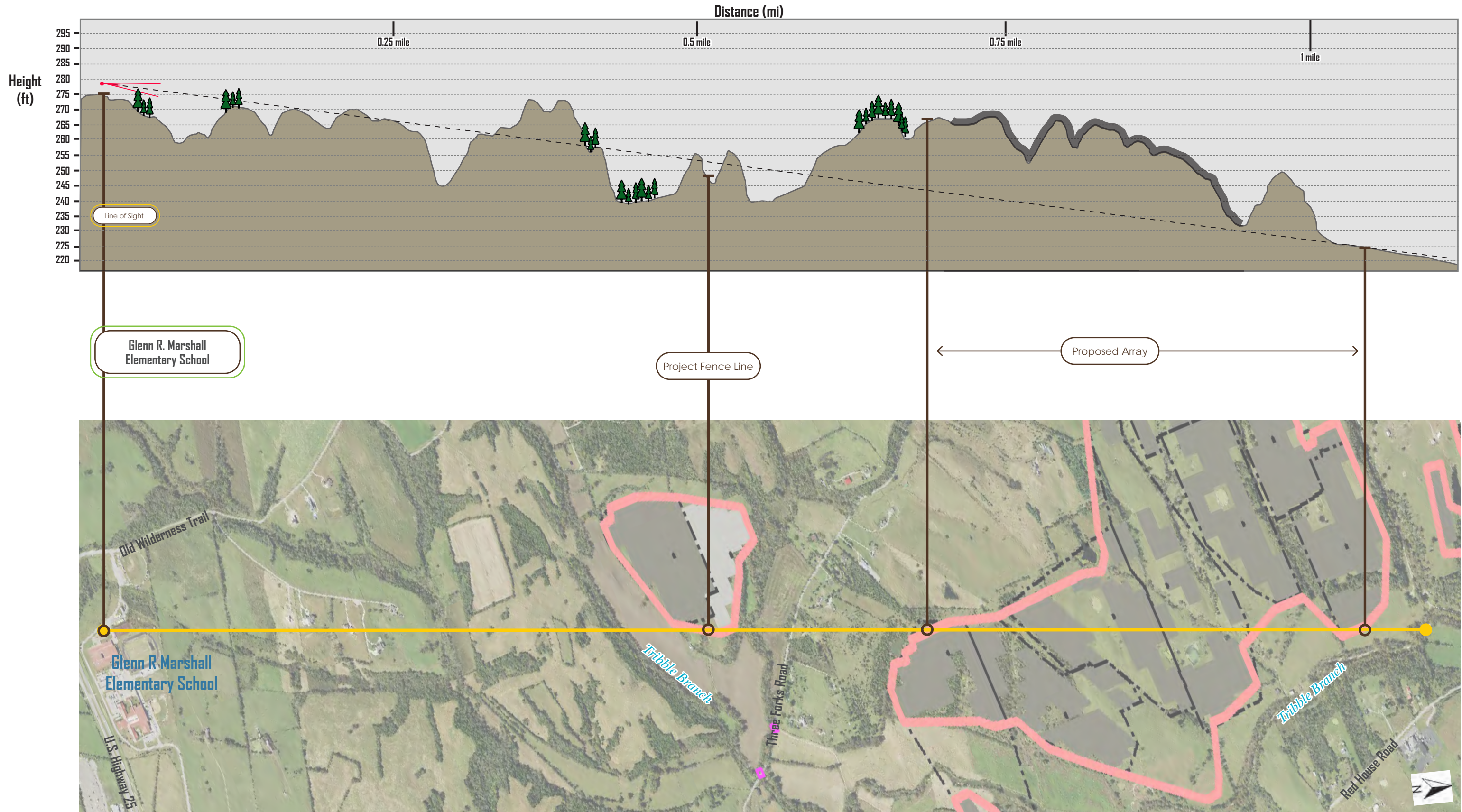


Photograph Information

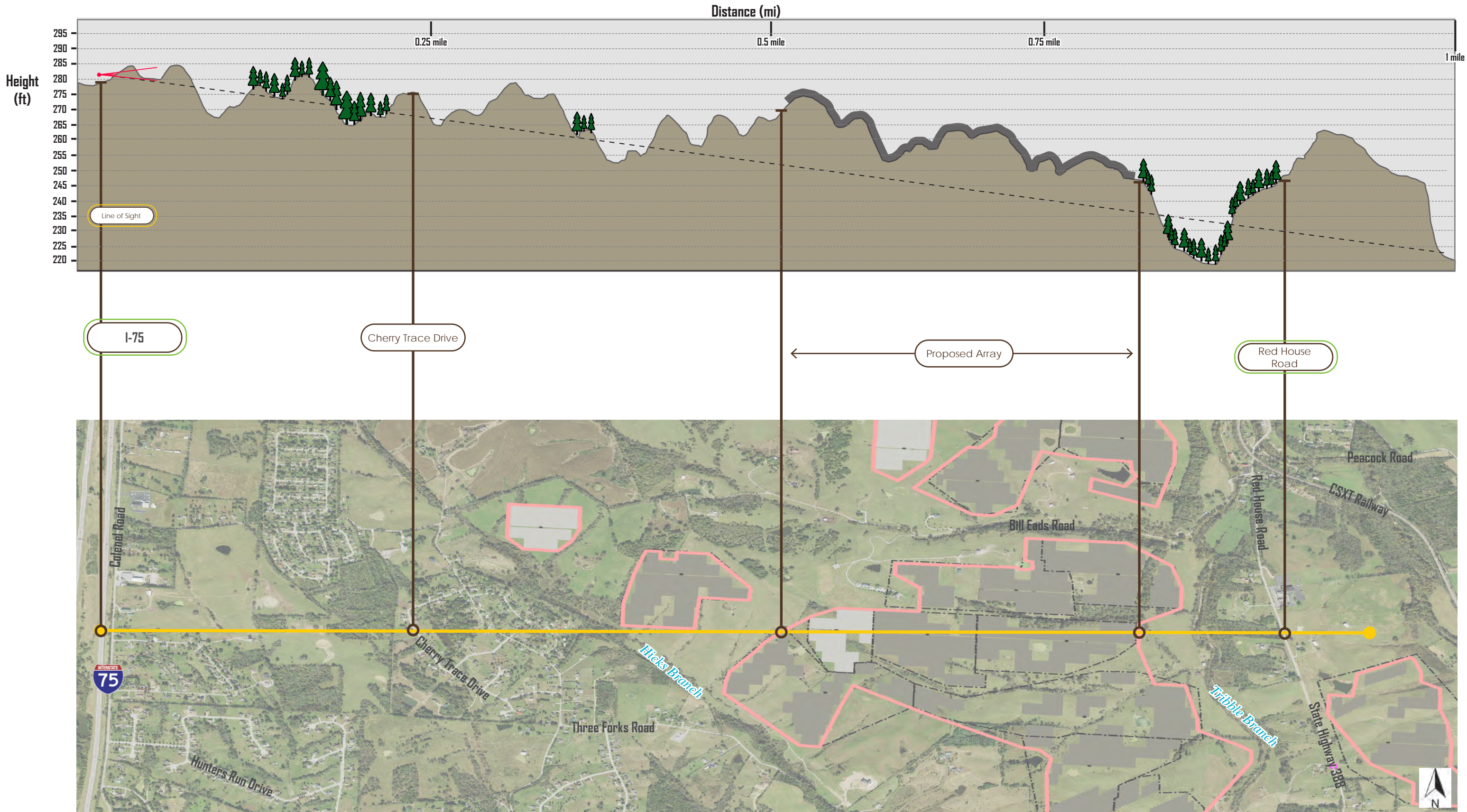
Time of photograph: 5:32 p.m.
Date of photograph: 7/7/2020
Weather condition: Partly Cloudy
Viewing direction: Southeast
Latitude: 37.816219°
Longitude: -84.268992°
Photo Location: The photo was taken adjacent to State Highway 388 from within the boundary of the Project.

ATTACHMENT B
Line of Sights

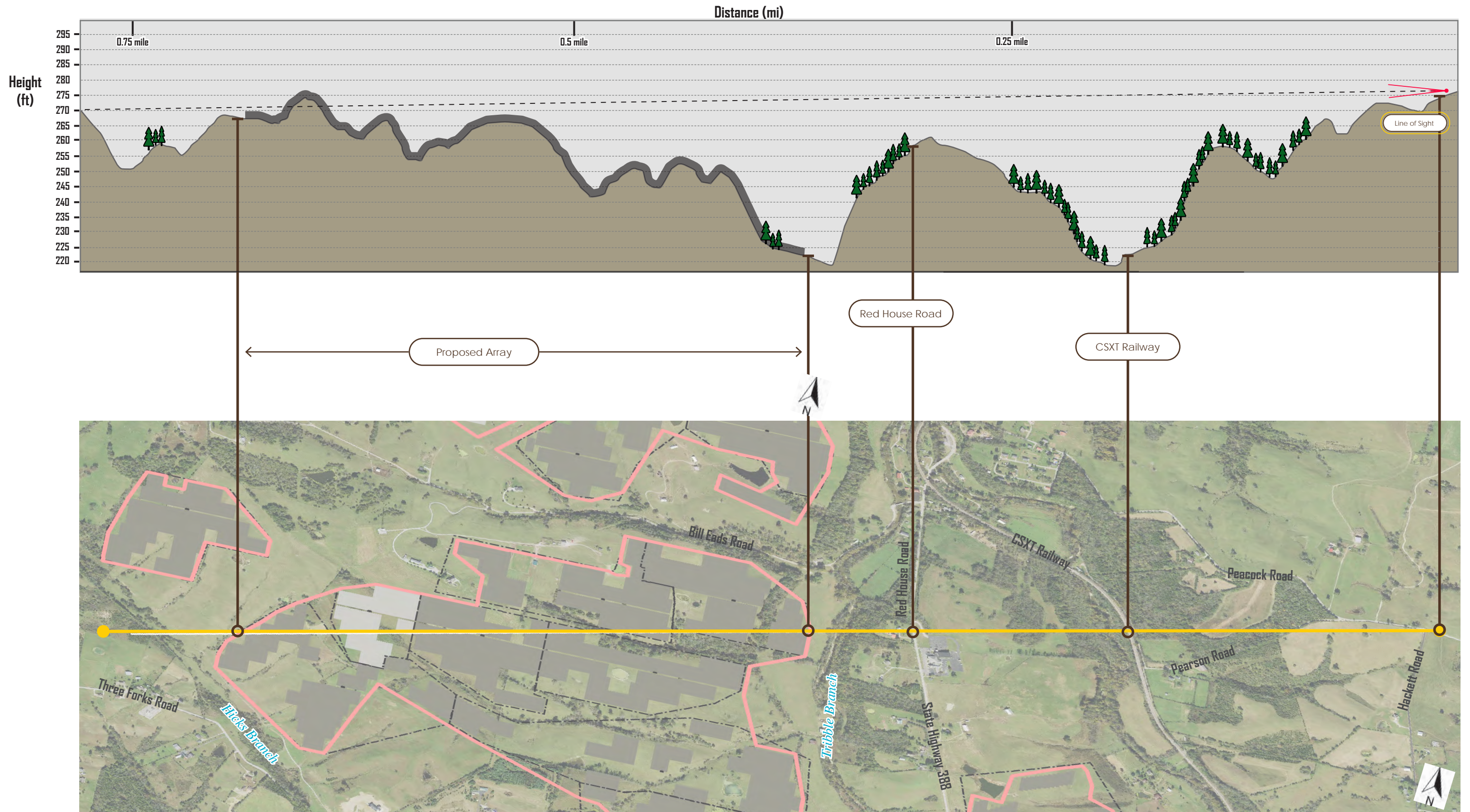
Line of Sight 1: VP-07 | Glenn R Marshall Elementary School



Line of Sight 2: VP-09 | I-75



Line of Sight 3: VP-12 | Hackett Road and Peacock Road



ATTACHMENT C
Photo Log



Viewpoint: 01 | Fort Boonesborough State Park

Photo Location: On top of the hill approximately 0.15 miles to the east of Four Mile Road.

Date/Time: 07/08/2020 | 12:34pm

Viewing Direction: Southwest



Viewpoint: 02 | Lost Fork Road

Photo Location: Intersection of Boonesborough Road and Lost Fork Road

Date/Time: 07/08/2020 | 11:21am

Viewing Direction: Southeast



Viewpoint: 03 | Three Forks Substation

Photo Location: Three Forks Road facing away from the Three Forks Substation

Date/Time: 07/07/2020 | 3:52pm

Viewing Direction: Northeast



Viewpoint: 04 | Red House Road (South)
Photo Location: State Highway 388 / Red House Road
Date/Time: 09/01/2020 | 8:33am
Viewing Direction: Northwest



Viewpoint: 05 | Three Forks Road (North)

Photo Location: Three Forks Road near agricultural properties

Date/Time: 08/31/2020 | 11:52am

Viewing Direction: Northeast



Viewpoint: 06 | Union City Road and Hunter Lane

Photo Location: Union City Road near the Hunter Road intersection

Date/Time: 07/08/2020 | 10:11am

Viewing Direction: Northwest



Viewpoint: 07 | Glenn R Marshall Elementary School

Photo Location: Elementary School - school bus parking lot facing the project

Date/Time: 07/08/2020 | 8:31am

Viewing Direction: North



Viewpoint: 08 | I-75 and Lexington Road

Photo Location: Lexington Road facing a DQ and Wendy's

Date/Time: 07/08/2020 | 8:45am

Viewing Direction: Northeast



Viewpoint: 09 | I-75

Photo Location: I-75 facing neighborhood properties on Rejeanna Drive

Date/Time: 06/06/2019

Viewing Direction: East



Viewpoint: 10 | Three Forks Road (South)

Photo Location: Three Forks Road near the Highway 388 intersection

Date/Time: 07/07/2020 | 5:10pm

Viewing Direction: North



Viewpoint: 11 | Red House Road (North)

Photo Location: Approximately 0.06 miles east of Highway 388

Date/Time: 07/07/2020 | 5:32pm

Viewing Direction: Southwest



Viewpoint: 12 | Hackett Road and Peacock Road

Photo Location: Facing the Project at the Peacock Road and Hackett Road intersection

Date/Time: 08/2007

Viewing Direction: Southwest