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TOWN OF YORKTOWN

Visual Impact Assessment

Revision 2

May 10, 2023

SCS Dell 014136 Yorktown, LLC Dell Avenue Solar Farm Yorktown, New York, 10514

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ATTACHMENTS

Attachment 1: Figure 1. Comparison Footprint Between Croton Overlook and Dell Avenue Solar Farm

Attachment 2: Figure 2. Overall Map LOS Profiles, and Line of Sight Profiles (LOS 1-16)

Attachment 3: Photos from Croton Overlook VIA

Attachment 4: Figure 3. Overall Plan View Photosimulations, Figure 4. Topographic Plan View with Photosimulation Viewpoint Locations (VP 1-9), and Photosimulations from Hog Hill Road Property

1.0 INTRODUCTION

The Dell Avenue Solar Farm (Project) is a 3,625 kWac fixed-tilt ground mount solar energy system proposed on a site to the south of Dell Ave and east of its southern intersection with Saw Mill River Rd (Rt 100). A visual assessment for this project site was previously completed in 2010 as part of the Environmental Impact Statement prepared in connection with the review of the Croton Overlook Development, a proposed age-restricted multi-family residential subdivision. The review identified “potential for limited visual impact caused by the [Croton Overlook] Project’s roofline.” The Town Board of the Town of Yorktown concluded in its Findings Statement “that the high tension power lines are presently quite visible from sensitive locations and have a greater existing visual impact than any potential view of the Project’s roofline.”

In a July 18, 2022 letter to SCS Dell 014136 Yorktown, LLC (Applicant), the Town of Yorktown Planning Department requested the Croton Overlook Visual Impact Assessment (Croton VIA) be updated to reflect the current proposed Project. The footprint of the Project is situated in substantially the same location as Croton Overlook, but the Project’s limits of construction do not extend as far south or west as did the previously proposed subdivision. See Figure 1 in Attachment 1 for an overlay comparison of the relative limits of construction of the Projects.

As it relates to visual impact, the solar panels will be significantly lower in height (no greater than 10 feet above ground surface) than the 2½ story residential buildings that were previously proposed for Croton Overlook (28 feet above ground surface). On account of Croton Overlook’s greater project area and taller heights, planned tree clearing limits and proposed visual mitigations were more substantial to those described here for the Project.

Project Siting, Proposed Landscaping, and Visual Mitigation Measures

From the onset of the Project’s development, tremendous care and attention have gone toward avoiding potential visual impacts of the solar farm. Numerous measures have been incorporated into the design principles to greatly limit the visibility of the Project from vantages near and far. The following mitigation measures are integrated into the proposed siting and facilities design in order to best maintain the aesthetic character of the Project’s surroundings:

1. Site selection in a location previously and thoroughly evaluated for adverse visual impact as it pertained to the Croton Overlook Development, which was subject to an extensive SEQRA Environmental Impact Statement review by the Town Board of Yorktown in 2011
2. Limits of disturbance confined to a smaller footprint (15 acres) than Croton (19 acres)
3. Height of project limited to below 10ft tall before introduction of amended solar code
4. Tree clearing significantly minimized, versus typical, to preserve natural visual screening:

- Tree clearing limited to only what is necessary for construction, as opposed to removing all trees that could potentially shade the solar panels during the system’s operational lifetime, which is typical for many solar projects
 - Tree line maintained as near as 10ft to solar panels in some locations, whereas optimal clearing distances would be minimum 50ft away for trees of these heights
 - Resulting shading inefficiencies are 3-4x worse than a typical solar project due to proximity of remaining tree line
5. Existing tree line buffer conserved along Saw Mill River Road and further augmented with additional native evergreen landscape plantings to sustain attractive “Gateway” to Town
 6. Utility interconnection scope (new poles & overhead wires) extended up Dell Ave at significant additional cost to avoid clearing trees on Saw Mill River Road as originally proposed by Con Edison
 7. Both site entrances are proposed via Dell Ave to avoid introducing a view corridor from Saw Mill River Road and both entrance gates will be flanked with additional native evergreen landscape plantings to reduce Project visibility
 8. Site plan drawings comprehensively detailed (much more advanced than a typical permitting set) in order to accurately depict facility design and evaluate visual impact
 9. An exhaustive Visual Impact Assessment conducted including (16) line-of-sight analyses and (5) photosimulations from over a dozen vantage points advised by the Town

2.0 METHODOLOGY

2.1 Line of Sight

Rationale for Viewpoint Selection – Line of Sight Viewpoints (LOS 1-16)

LOS viewpoint locations LOS 1 to LOS 13 are those requested by the Town of Yorktown Planning Department, several of which originated from the Croton VIA. Bald Mountain and the Taconic State Parkway are not included, because the Croton VIA previously concluded that there will be no views from these two locations, as both viewpoints are blocked by topography. LOS 7 and LOS 8 are those requested by the Town of Yorktown Planning Department for residences at Pinesbridge Road and Evan Drive. LOS viewpoint locations LOS 9 to LOS 13 are from the Random Farms community in the neighboring Town of New Castle as requested by the Town. Lastly, LOS 14 to 16 are provided for a residence which adjoins the Project and is located at 71 Hog Hill Road.

Methodology – Line of Sight

In completing the Line of Sight (LOS) Profiles, Light Detection and Ranging (LiDAR) point cloud data from the U.S. Geological Survey (USGS) Lidar Point Cloud NY FEMA 2018 dataset was used. The LiDAR data was flown between January and April 2019 and published for public accessibility on May 18, 2021. Electronic datasets were obtained from the USGS National Map (<https://apps.nationalmap.gov/viewer/>). LiDAR data is the best available elevation data as it contains high resolution accurate ground elevations in addition to building and tree heights that offer realistic physical visual impediments as they occur in the landscape.

When built, the panel heights with a fixed racking system are expected to be 9 feet, 9 inches tall. This is subject to change based on final equipment specifications but will not exceed 10 feet above ground surface under any circumstances.

The LiDAR elevation data obtained for the Project was used for the terrain and vegetation data source. ESRI GIS Spatial Analysis was used to post-process the data to modify areas of proposed Project grading and tree clearing. ESRI GIS 3D Analyst was used to produce the linear elevation profiles sampled across select sight lines.

2.2 Photosimulations

Rationale for Viewpoint Selection – Photosimulation Viewpoints (VP 1-9)

In addition to the LOS Analysis produced from LOS Viewpoints 1-13 (as selected by the Town of Yorktown Planning Board) and LOS Viewpoints 14-16 (from the residence at 71 Hog Hill Road), a separate Photosimulations Analysis was conducted from the property at 71 Hog Hill Road.

The Applicant has been engaged in discussions with the nearest adjoining residential neighbor (Neighbor) who is located on the 33 acre Hog Hill Road property directly to the southeast of the Project site. A common property line of nearly 2,300 feet is shared between the Project property parcel and the Neighbor's property. Following a site visit on November 8, 2022 to the Neighbor's property, which was attended by the Applicant's and Neighbor's respective visual consultants, new viewpoints were observed for potential inclusion in the VIA, all from the Neighbor's property. The latter viewpoints, numbered Photosimulation Viewpoints VP 1-9, are new and additional to the LOS Viewpoints 1-16. In Attachment 4, Figure 3 summarizes the subset of Photosimulation Viewpoints which are analyzed in the VIA (VP1, VP4, VP5, VP7, VP8 NW, VP8 SW, and VP9) and Figure 4 depicts the locations of all nine Photosimulation Viewpoints VP 1-9 initially selected for observation after the site visit.

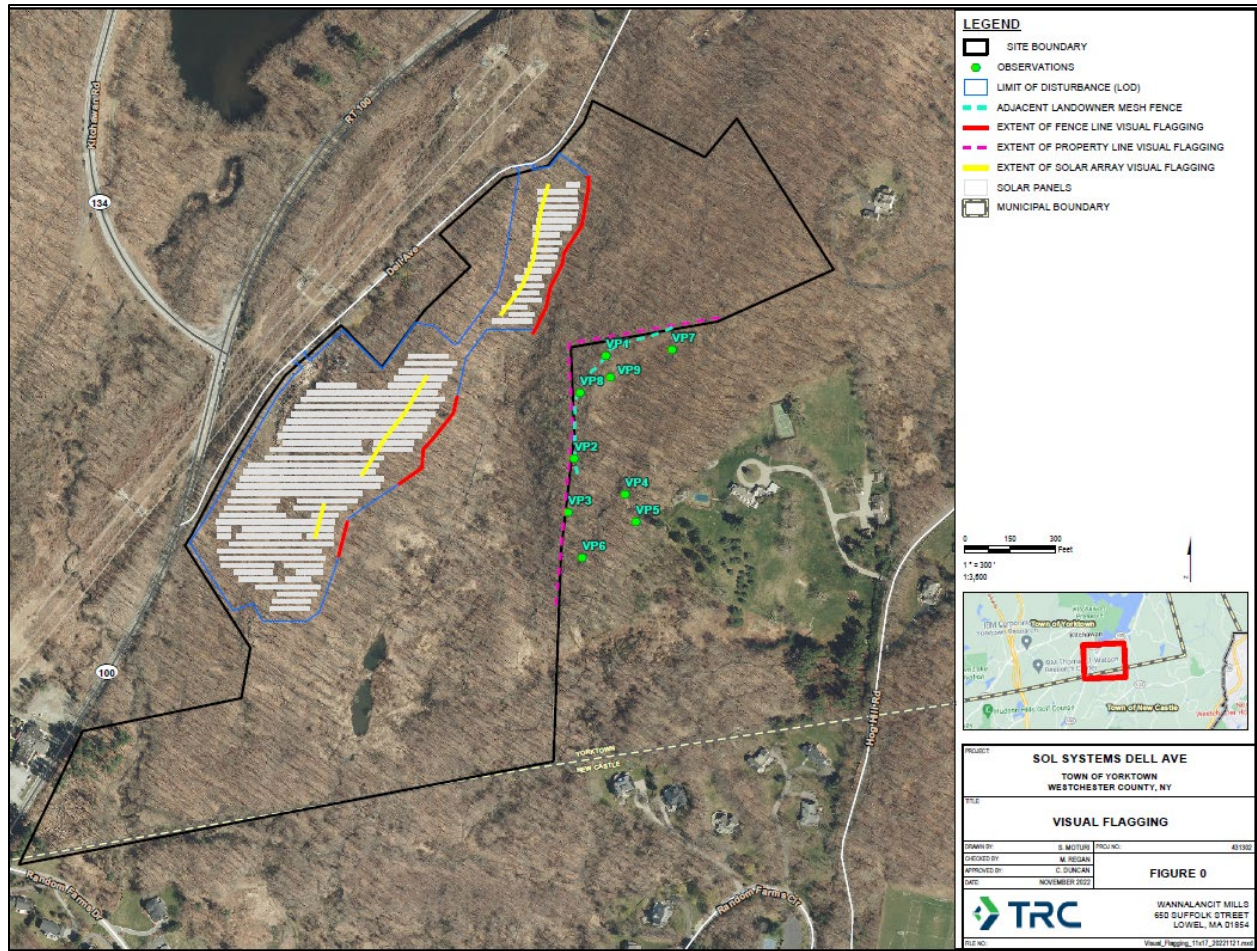
To represent the proposed Project in the field, reference points consisting of orange snow fencing and other high-visibility flagging affixed to tree trunks and/or wooden stakes were erected at numerous locations where the proposed Project facilities will be constructed. There is an existing mesh fence line (approximately 7 feet high) near the Neighbor's property boundary adjacent to the site, which restricts movement between the two properties. Observations were made along this fence and elsewhere on the Neighbor's property during the visit and documented with gps.

There is a discrete area along and near the approximately 125 feet of the mesh fencing where the reference flagging could be seen. Viewpoints 1 and 8 were chosen to represent views from this discrete area. Viewpoint 9 was chosen to represent a location slightly more elevated than that of Viewpoints 1 and 8. Viewpoint 7 was chosen near a woodland path a bit further back (southeasterly) from the fence. Through on-site observations during the visit, it was noted that views were not obtained further back from the fence in the direction of the main house and much of the remainder of the property. Importantly, there will be no views of the solar panels from the main residence as well as other locations within the recreational landscaped (yard) area of the property, including the tennis court, swimming pool, and pavilion.

Methodology – Photosimulations

To create visual simulations, Autodesk 3DS Max 2022 (MAX) visualization software was used to correctly dimension the Project 3D models onto the digital photographic image from each viewpoint location. A 3D model of the solar layout was created by using engineering specifications obtained from the design engineers. The terrain elevation data (z value) needed to place the panels correctly on the surface of the earth was accomplished using LiDAR data (FEMA 2018 dataset as noted in Section 4.1). Proposed grading elevations were incorporated into the model. Using the engineering site plan and LiDAR terrain surface data in GIS, each x, y, z coordinate location of each proposed solar array was obtained and imported into Autodesk 3DS MAX visualization software including the terrain surface itself. A 3D model of every proposed individual solar array was then physically constructed with proposed panel specifications, a 25 degree tilt angle, and with the proposed racking system. The proposed fixed arrays were built as single-portrait panels with a height of 9 feet, 9 inches above finished grade with the arrays oriented south. The simulation model was further developed to position the viewer at the selected vantage point. For a given vantage point, the visualization software is capable of providing and adjusting a camera view that matches that of the actual photograph. From the field effort, the documented camera coordinate (x, y, z) positions were entered into the model along with other camera information.

The arrays were further refined within the simulation photograph by using gps on-site reference points consisting of orange snow fencing and other high-visibility flagging affixed to tree trunks and/or wooden stakes. The field reference visuals were erected at the heights of the proposed solar arrays (10 feet tall, maximum) and Project perimeter fenceline (7 feet tall), and they were strewn across long distances representative of the southern array facilities and northern array facilities. The high-visibility flagging was staged along the highest ground elevation line of the proposed arrays to bolster their visibility from the Neighbor's property. Inset 0 below depicts the locations (in yellow and red) of the field reference visuals. Final adjustments of the camera were obtained by referencing point cloud LiDAR data against the landscape features seen within the photo. References were also utilized from the previously conducted on-site tree survey comprised of geolocated reference points of existing mature tree trunks.



Inset 0. Field Reference Visual Flagging Map

The day and time of the photographs were also recorded and exist as electronic information embedded in the respective digital photograph files. This information was used to adjust for the sun angle in the simulation software in order to represent lighting conditions for the time of day and year that is seen in the photo.

Best practices dictate that the existing conditions photographs depict reasonable worst-case visibility conditions, which are leaf-off, no snow conditions when atmospheric conditions are clear and with photographs taken near midday when shadows are short.

Where snow fencing and visual flagging could be seen or potentially be seen, camera viewpoint locations were suggested by the Neighbor’s representatives. Final simulation photographs were later taken on December 13, 2022 during seasonal leaf-off conditions to represent worst-case scenario at each of the nine observed Photosimulation Viewpoints (VP1-9).

3.0 RESULTS AND DISCUSSION

3.1 Line of Sight Analysis

LOS elevation profiles are provided for the Dell Avenue Solar Farm. Please refer to Figure 2 in Attachment 2 for profile locations.

Upon examination of LOS and photographs from the Croton VIA, many of the views to the site were minimal to none. It is reasonable to conclude that visual impact of the Project is less than that represented by the Croton Overlook project, as the proposed heights of the subdivision homes measured 28 feet tall at the top of roofline compared to the proposed solar panels that will not exceed 10 feet tall. There exists, too, 9 years of additional vegetative growing seasons between data and photographs acquired in 2010 vs the published LiDAR data flown in 2019 – as well as at least 5 more years of growing seasons before the solar facilities are operational.

LOS viewpoint locations LOS 14-16 are provided for a residence which adjoins the Project and is located at 71 Hog Hill Road. Due to the topography between the residence and the Project, there will be no views of the Project from any level of the house nor from the surrounding “yard” area.

For the following discussion, distances are those from the viewer to the first panels encountered. Also noted on the LOS profiles are distance measurements as they pass through an existing high voltage transmission utility right-of-way (power lines) that is in the area. These measurements were taken along the actual profile line whereas measured distances may be greater than the actual right-of-way (ROW) width because they may consist of oblique angles and diagonal lines. This explains the varying distances noted in the LOS profiles.

Several “rules of thumb” can be employed when reviewing line of sight profiles and have been considered in the conclusions:

1) For clear views through a tree-less, obstacle-free line of sight:

- Generally, visibility extends up to approximately 3 miles on flat ground until the horizon.

2) For views through forested tree cover with full foliage:

- Screened views up to 0-50 feet and probably little to no visibility over 150 feet. Variational nuances will factor in a view such as varying tree density and respective heights, varying species (mixed forest vs deciduous vs coniferous) or foliage gaps in overstory, amount of understory as well as position of lowest branches.

3) For views through winter tree cover with less foliage:

- Screened views up to 300 feet and will fall off sharply up to 500 feet, provided favorable conditions. A stand of leaf-off trees and shrubs can act as a solid mass that can preclude visibility. Variational nuances will factor in a view such as varying tree density and

respective heights, varying species (mixed forest vs deciduous vs coniferous) or foliage gaps in overstory, amount of understory as well as position of lowest branches.

LOS profiles can be found in Attachment 2.

3.1.1 LOS 1 – Kitchawan Preserve (top of hill) – Distance to Arrays ~2,700 feet (0.5 miles), View South

Kitchawan Preserve is a 208-acre natural preserve bordered by Croton Reservoir and the North County Trailway. As noted in the aerial photo for LOS 1 in Attachment 2, the Preserve is wooded mainly with mature deciduous tree species. The viewpoint is positioned at a high point and overlooks a south-facing descending slope leading to Croton Reservoir. The LOS 1 viewpoint is higher than the Project. As the elevation profile shows, views are not anticipated because of the approximately 315 feet of existing vegetative screening from varying canopy levels in the forested environment. Prevalent along the profile environment also is the presence of a high voltage transmission utility corridor that is just north of the Project and Dell Avenue. The approximate 150 foot tall lattice towers (as measured by LiDAR data) provide a significant visual presence of their own in the general vicinity. The profile crosses 240 feet of ROW.

Previous photographs from the 2010 Croton Overlook submittal (Attachment 3) taken at the Kitchawan Preserve also show obstructed and screened views. While the photos mark out the Project location, one must also consider that perceived size and scale of an object is diminished with distance and will also show much less detail with less visual impact.

No adverse views of the Project are expected at this location due to 315 feet of vegetative screening.

3.1.2 LOS 2 – Kitchawan Preserve (at North County Trailway) – Distance to Arrays ~1,450 feet (0.3 miles), View Southeast

LOS 2 shows an elevation profile from the North County Trailway, another Kitchawan Preserve location, positioned further south closer to the Project but at a lower elevation than LOS 1. This viewpoint is lower than the site location. There are no anticipated views of the Project from the trailway viewpoint due to a series of existing vegetative obstructions. As the LOS 2 profile shows, there is a narrow section of trees that would provide approximately 60 feet of screening along the trailway north of Croton Reservoir. The majority of the views would be screened by the trees located on the south side of the reservoir. There is tree canopy that provides 155, 190, and 110 feet of screening each, in three different areas in series. There is also another 25 feet of screening from vegetation in front of (north of) Dell Avenue.

No views of the Project are expected at this location due to a cumulative 540 feet of vegetative screening. Previous photographs from the Croton VIA in Attachment 3 support the conclusion of no views, as the vegetation south of the reservoir can be seen obstructing views.

3.1.3 LOS 3 – Intersection Route 100 & Route 134 – Distance to Arrays ~350 feet (0.1 miles), View Southeast

LOS 3 is at the intersection of Route 100 and Route 134 and is a representative view for motorists at the intersection facing southeasterly towards the Project. There is a large high voltage transmission utility ROW that crosses at the intersection in front of the viewpoint. A Google Earth screenshot is provided below to assist in the narrative for this LOS. The viewpoint is essentially on Route 134 where the profile visual environment consists of several suspended traffic lights strung perpendicular across Route 100 and three vertical elevation levels of transmission line. (The ROW contains 2 parallel lattice transmission towers approximately 150 high. Each lattice tower consists of 6 davit arms, 2 per level. Therefore, there is a series of 12 wire bundles associated with the davit arms of 2 towers). These transmission wires can be seen sweeping across the view at the LOS 3 intersection.

As also noted, left of center in the photograph below (Inset 1) shows a topographic obstruction along Route 100 that serves to preclude views to the “left” side of the Project. The LOS profile line was pulled to the right of this topographic feature through lower elevation terrain on the right to show worse-case. As such, there is a narrow line of dense shrubs that exist on the south side of the ROW between the viewer and (north of) Dell Avenue that screens views in this area. More significant screening of the Project occurs from existing taller trees that are approximately 40 feet deep and located on the south side of Dell Avenue (far background). Visual impacts are not expected due to topography as well as vegetative screening north of the perimeter fence.

No significant, unscreened views of the Project are expected at this location. Motorist viewing experiences are typically intermittent and of short duration. During leaf-on conditions, no views are expected.



Inset 1. Intersection of Route 100 & Route 134

3.1.4 LOS 4 – Route 100 – Distance to Arrays ~300 feet (0.1 miles), View East

LOS 4 consists of a similar profile environment to LOS 3 without the suspended traffic lights in the view. Here, roadside shrubs along the south side of Route 100 serve to screen views to lower portions of the Project as seen in the LOS 4 elevation profile. As with LOS 3, there exists a narrow line of dense shrubs that exist on the south side of the ROW between the viewer and (north of) Dell Avenue that will also provide screening in this area. More significant and additional screening will occur from existing taller trees approximately 50 feet deep that is located on the south side of Dell Avenue. Visual impacts are not expected due to vegetative screening north of the perimeter fence.

No significant, unscreened views of the Project are expected at this location. Motorist viewing experiences are typically intermittent and of short duration. During leaf-on conditions, no views are expected.

3.1.5 LOS 5 – Hilltop Hanover Farm – Distance to Arrays ~13,400 feet (2.5 miles), View South

LOS 5 is a long-distance southerly view from Hilltop Hanover Farm. While views may vary within the property, views to the Project are not anticipated at this location. The LOS 5 aerial photograph shows dense forest groups along the profile elevation. The profile shows that approximately 1,340 feet of tree canopy is expected to screen views from vegetation located on the descending slope south of the farm. There is an additional 115 feet of screening from trees closer to the Project in front of the solar panels. The profile also intersects and parallels approximately 2,200 feet of high voltage transmission utility ROW where the lattice towers are also capable of adding an existing and interfering visual impact to the view.

Previous photographs from the Croton VIA seen in Attachment 3 support the conclusion of no views, as the Project would be set in and behind the distant trees located on the Project property. The photos also demonstrate how distance will provide reduced visibility from the Hilltop Hanover Farm by illustrating the muted and “fused” colors seen in the background, as well as if one considers how small 10foot tall objects seen 2.5 miles away would be perceived. Within the Croton VIA photos, other development in open areas cannot generally be detected other than the tall lattice towers in the existing high voltage utility ROW. Typically at distance, development unless bright white, would be visually absorbed into the visual environment due to similar colors and contrasts with both surrounding leaf-off and leaf-on forested areas as well as the diminished size and scale as it appears embedded into landscape.

No views of the Project are expected at this location due to a cumulative 1,455 feet of vegetative screening and more than 2.5 miles of distance between the viewer and Project.

3.1.6 LOS 6 – Turkey Mountain – Distance to Arrays ~15,100 feet (~2.9 miles), View Southeast

Turkey Mountain is approximately 125 acres of land located on a land reserve and is currently maintained by the Yorktown Land Trust. It is the highest point in Westchester County. The LOS 6 viewpoint lies to the northwest of the Project site approximately 2.9 miles to the solar arrays.

Views from Turkey Mountain are not expected. There are two areas of natural forested screening along the elevation profile. There is approximately 290 feet of screening from the surrounding vegetation at the viewing point. A second area of screening consists of an additional 355 feet of screening from trees located north of the North County Trailway. Profile views also intersect approximately 170 feet of high voltage transmission utility ROW where lattice towers are capable of adding an existing visual impact in the environment.

No views of the Project are expected at this location due to a cumulative 645 feet of vegetative screening and more than 2.75 miles of distance between the view and Project. Previous photographs from the Croton VIA in Attachment 3 support the conclusion of no views, as the vegetation in the immediate vicinity can be seen obstructing views.

3.1.7 LOS 7 – Near Pinesbridge Road Residence – Distance to Arrays ~1,750 feet (0.3 miles), View Southeast

Views of the Project are not expected from the LOS 7 viewpoint location(s) located off Pinesbridge Road. The aerial profile for LOS 7 shows a forested area to the east between the viewer and the Project. The elevation profile shows that a location at the residence will have views blocked by topography. Views from the high point on the ridge located approximately 190 feet further east from the building location will have views screened by 310 feet of varying levels of tree canopy. The profile also crosses approximately 185 feet of high voltage transmission utility ROW where the lattice towers are also adding an existing visual impact to the environment.

No adverse views of the Project are expected at this location due to 310 feet of vegetative screening.

3.1.8 LOS 8 – Near Evan Drive Residence – Distance to Arrays ~1,450 feet (0.3 miles), View East

The LOS viewpoint is on a high point of a ridge located off Evan Drive. Screened views may be possible from this location. Similar to LOS 7, the aerial profile shows a forested slope west of the Project. The elevation profile results show approximately 175 feet of screening from the tree canopy.

The profile also crosses approximately 185 feet of high voltage transmission utility ROW where the lattice towers are also capable of adding an existing visual impact to the environment.

No adverse views of the Project are expected due to 175 feet of vegetative screening.

3.1.9 LOS 9 – Random Farms Drive, Residence 1 – Distance to Arrays ~1,015 feet (0.2 miles), View Northeast

The LOS viewpoint is in the Random Farms community in the Town of New Castle, NY, approximately 1,015 feet from the nearest solar array along the profile view. The aerial profile shows a forested area to the northeast between the viewer located at Random Farms and the Project.

The profile, taken from the backyard of Residence 1, shows the Project is at a higher elevation than the viewpoint with approximately 800 feet of vegetative screening. Although the Project site's property line is 265 feet from the viewer, no trees will be cleared until at the Project perimeter fence which is an additional 610 feet approximately beyond the property line.

No significant, unscreened views of the Project are expected at this location due to 800 feet of vegetative screening. During leaf-on conditions, no views are expected.

3.1.10 LOS 10 – Random Farms Circle, Residence 2 – Distance to Arrays ~1,220 feet (0.2 miles), View Northwest

The LOS viewpoint is in the Random Farms community in the Town of New Castle, NY, approximately 1,220 feet from the nearest solar array along the profile view. The aerial profile shows a forested area to the northwest between the viewer located at Random Farms and the Project.

The profile, taken from the backyard of Residence 2, shows the Project is at a higher elevation than the viewpoint. There is vegetative screening that provides approximately 370, 400, and 125 feet of screening each, in three different areas in series. Although the Project site's property line is 290 feet from the viewer, no trees will be cleared until at the Project perimeter fence which is an additional 900 feet approximately beyond the property line.

No significant, unscreened views of the Project are expected at this location due to a cumulative 895 feet of vegetative screening. During leaf-on conditions, no views are expected.

3.1.11 LOS 11 – Random Farms Circle, Residence 3 – Distance to Arrays ~1,520 feet (0.3 miles), View Northwest

The LOS viewpoint is in the Random Farms community in the Town of New Castle, NY, approximately 1,520 feet from the nearest solar array along the profile view. The aerial profile shows a forested area to the northwest between the viewer located at Random Farms and the Project.

The profile, taken from the backyard of Residence 3, shows the Project is at a lower elevation than the viewpoint. There is vegetative screening that provides approximately 330, 475, and 165 feet of screening each, in three different areas in series. The Project site's property line is 900 feet from the viewer and no trees will be cleared until at the Project perimeter fence which is an additional 580 feet approximately beyond the property line.

No significant, unscreened views of the Project are expected at this location due to a cumulative 970 feet of vegetative screening. During leaf-on conditions, no views are expected.

3.1.12 LOS 12 – Random Farms Drive, Residence 4 – Distance to Arrays ~1,520 feet (0.3 miles), View Northwest

The LOS viewpoint is in the Random Farms community in the Town of New Castle, NY, approximately 1,630 feet from the nearest solar array along the profile view. The aerial profile shows a forested area to the northeast between the viewer located at Random Farms and the Project.

The primary Profile A, taken from the backyard of Residence 4, shows the Project is at a lower elevation than the viewpoint. There is vegetative screening that provides approximately 290 and 360 feet of screening each, in two different areas in series. The Project site's property line is 830 feet from the viewer and no trees will be cleared until at the Project perimeter fence which is an additional 660 feet approximately beyond the property line.

A second LOS along the elevation profile path (Profile B) is located 340 feet further downslope to the northeast. At this location, the highest part of the Project is about eye level with the property. There is vegetative screening that provides approximately 150 and 620 feet of screening each, in two different areas in series. The Project site property line is 480 feet from the viewer and the perimeter fence is another 665 feet away where tree clearing would occur.

No significant, unscreened views of the Project are expected at either of these locations due to a cumulative 650 feet of vegetative screening for Profile A and cumulative screening of 770 feet for Profile B. During leaf-on conditions, no views are expected.

3.1.13 LOS 13 – Random Farms Drive, Residence 5 – Distance to Arrays ~1,520 feet (0.3 miles), View Northwest

The LOS viewpoint is in the Random Farms community in the Town of New Castle, NY, approximately 1,690 feet from the nearest solar array along the profile view. The aerial profile shows a forested area to the north between the viewer located at Random Farms and the Project.

The profile, taken from the backyard of Residence 5, shows the Project is at a higher elevation than the viewpoint. There is vegetative screening that provides approximately 135, 145, and 545 feet of screening each, in three different areas in series. The Project site's property line is 1,030 feet from the viewer and no trees will be cleared until at the Project perimeter fence which is an additional 530 feet approximately beyond the property line.

No significant, unscreened views of the Project are expected at this location due to a cumulative 825 feet of vegetative screening. During leaf-on conditions, no views are expected.

**3.1.14 LOS 14 – 71 Hog Hill Road Property (Submitted June 2022) – Distance to Arrays
~1,340 feet (0.25 miles), View Northwest**

LOS 14 was taken from the house/residence at 71 Hog Hill Road looking towards the southern half of the southern arrays. The house is approximately 1,340 feet from those arrays. The aerial shows that nearly all of the elevation line between the house and the Project travels through approximately 1,050 feet of wooded area until clearing begins at the Project fence line.

LOS 14 shows the house at higher elevation than the solar panels. There will be no views along this sightline from the dwelling to the arrays both at ground level and from the uppermost level of the house due to topographic obstructions. The intervening hill is located approximately 325 feet farther from the house along the profile line. The intervening topography will also block views from the cleared extents of the maintained “yard” around the house, such as the swimming pool.

No views of the Project will exist, because they will be blocked by topography.

**3.1.15 LOS 15 – 71 Hog Hill Road Property (Submitted June 2022) – Distance to Arrays
~1,050 feet (0.2 miles), View Northwest**

LOS 15 Profile 2 was taken from the house/residence at 71 Hog Hill Road looking towards the northern half of the southern arrays. The house is approximately 1,050 feet to the nearest solar panels.

Similar to LOS 14, there will also be no views along the sightline due to topographic obstructions. Here along this elevation line there is approximately 1,010 feet of uninterrupted forested area before tree clearing begins at the Project fence line. The intervening topography will also block views from the cleared extents of the maintained house surroundings such as the swimming pool.

No views of the Project will exist, because they will be blocked by topography.

**3.1.16 LOS 16 – 71 Hog Hill Road Property (Submitted June 2022) – Distance to Arrays
~920 feet (0.15 miles), View Northwest**

LOS 16 Profile 1 was taken from the house/residence at 71 Hog Hill Road looking towards the northern arrays. The house is approximately 920 feet from the arrays. The aerial shows that nearly all of the elevation line between the house and the Project travels through approximately 730 feet of wooded area until clearing begins at the Project fence line.

Similar to LOS 14 and 15, LOS 16 shows the house at higher elevation than the solar panels. However, there will be no views along this sightline from the dwelling to the northern arrays both at ground level and from the uppermost level of the house due to topographic obstructions. The intervening hill is located approximately 300 feet northwest of the house farther along the profile line. The intervening topography will also block views from the cleared extents of the maintained “yard” around the house, such as the swimming pool.

No views of the Project will exist, because they will be blocked by topography.

3.2 Photosimulations Analysis

A more in-depth assessment of Project visibility was requested by the Neighbor residing at 71 Hog Hill Road, located southeast of the Project. During November 2022, several teleconferences occurred between the Applicant and the Neighbor's representatives, concluding in an agreement regarding procedures and methodologies for assessing visibility and producing photosimulations of the Project from the Neighbor's property. The Applicant's visual consultant as well as the Neighbor's representatives walked the Neighbor's property line on November 8, 2022 and established potential viewpoint locations for simulation photographs. The Hog Hill Road property owner was not present during the November 8 site visit. Orange snow fencing and other high-visibility flagging were placed within the Project boundary after the November 8 site visit to indicate solar panel locations. Where the visual flagging was visible or perceived to be potentially visible, camera viewpoint locations were selected by the Neighbor's representatives. Property owner approval of viewpoint locations was confirmed during the "Thanksgiving break". Final photographs were then taken on December 13, 2022 during seasonal leaf-off conditions. Photosimulations for the Project are presented for the agreed upon viewpoints where visibility concerns were expressed. Please see Figure 3, Figure 4, and photosimulations provided in Attachment 4.

Project Visibility from 71 Hog Hill Road

It is previously established through LOS analysis (June 15, 2022 Town of Yorktown Board submittal and Attachment 2) and on-site observations during the November 8, 2022 site visit, that there will not be views of the Project from the vast majority of the Neighbor's property. And importantly, there will be no views of solar panels from the main residence as well as other locations within the recreational landscaped (yard) area of the property, including the tennis court, swimming pool, and pavilion that can be seen in the Attachment 4, Figure 3 aerial map.

There is an existing mesh fence line (approximately 7 feet high) near the property boundary to the northwest (noted in Figure 3) that restricts movement between the two properties. When the Neighbor's property line was walked, observations were made along the fence and documented with gps. Figure 3 illustrates site conditions with the results of the site visit and depicts more specifically, the viewpoint locations where visibility of solar arrays within the Neighbor's property might occur. There are points along the fence where, with a high degree of confidence, the Project will not be seen (represented by a double green line in Figure 3). However, also as noted in Figure 3 (represented by the light green dotted lines) there are two linear areas along the fence where less frequent, intermittent, and very minimal visibility of the Project could be discerned by observation of the formerly placed orange snow fencing and high-visibility flagging through dense vegetation. Figure 3 also identifies a small discrete area at the furthest northwest corner of the property along approximately 125 feet of fencing where visibility of the Project takes place (represented by solid yellow line). Here, screened through vegetation, views of solar panels restricted to the northern array section will be obtained.

Photosimulation Viewpoints 1 and 8 were chosen to represent simulated views from this discrete area.

Photosimulation Viewpoint 9 was chosen to represent a slightly elevated and flatter location than that of Viewpoints 1 and 8 where views, now screened through denser vegetation, to the site were obtained. A viewer is more likely to be standing at Viewpoint 9 than Viewpoints 1 or 8, because the latter are both on a steeper slope and situated at the existing mesh fence that cannot be traversed.

Photosimulation Viewpoint 7 was chosen near a woodland path a bit further back (southeasterly) from the fence. As seen in the topographic inset on the Viewpoint 7 simulation cover page in Attachment 4, when one steps back and away from Viewpoints 1 and 8, the viewer traverses up a slope. It was observed and represented by Viewpoint 7, that views become indiscernible due to denser tree canopy as one moved to higher parts of the hill, even during leaf-off conditions. As such, it can be inferred that at the elevation of Viewpoint 7 and higher, views become less likely due to tree canopy. This was experienced during the visits on the Neighbor's property and is a combined result of gaining elevation (therefore introducing more tree canopy into the sightline) and increasing distance from the object (therefore introducing more vegetative screening between viewer and Project). This distance effect is corroborated with the existing conditions photographed at Viewpoints 4 and 5 in the direction of the southern arrays.

Photosimulation Viewpoints 4 and 5 are shown in Attachment 4 as reference photos for the southeastern side of the property. Please refer to Section 3.2.6 for further discussion on these two locations.

Insets 2 and 3 below illustrate the mesh fence. It is fairly restrictive impeding movement and therefore the simulation viewpoint photos could only be taken at the limits of this barrier. The fence has 1 to 2 inch mesh squares. It was observed that this fencing does provide a level of visual interference in and of itself and has the capacity to blur and diminish detail of objects on the opposing side (Insets 2 and 3). The photographer was not tall enough to see over the 7 foot fence. Due to the small mesh size and to obtain clear camera photos as best as possible, the position of the camera was forced directly on the fence to limit the visual interference of the mesh. Although this would not exactly represent how the view through the fence would normally be experienced, the clearest photographs that showed the least interference on the camera lens from the fence were chosen for simulations.



Inset 2. Existing 7 foot mesh fence at Hog Hill property (view toward Hog Hill property).



Inset 3. Existing Winter Conditions in the direction of the Project (view from Hog Hill property).



Inset 4. Existing Summer Conditions in the direction of the Project (view from Project side of the mesh fence).

Ultimately, the most prevalent views of the Project from the expansive 33-acre property will be confined to the far northwestern corner and in the direction of the proposed northern arrays. In worse-case leaf-off conditions, these views are screened through mature, deciduous trees. The photosimulations from Viewpoints 1, 8 (NW), and 9 represent these conditions. In leaf-on conditions, the Project visibility will significantly diminish or become non-existent. Viewpoints 1, 8, and 9 lie in a less than half-acre square area approximately 600 feet from the residence and accessing them via a straight line from the backyard involves traversing 300 feet of wooded slopes.

No significant, unscreened views of the southern arrays are expected from the Hog Hill property.

3.2.1 Viewpoint 1, View Northwest

This viewpoint location was taken along a 125 foot linear portion of the property where screened views are obtained (see Figure 3, Attachment 4). This view is looking northwest from the camera location towards the northern arrays. Proposed Conditions reveals visibility of the nearest northern arrays approximately 270 feet away screened by existing trees and topography. The level of discernible detail is moderate. The visual clutter of existing trees blocks some of the view, diminishing visual acuity and full visibility. There is a perceptible change in color that sweeps across the photo. However, color values are similar to the landscape (in particular the foreground). This similar color value serves to visually absorb impacts, as opposed to viewing stark, bright objects with high contrast.

3.2.2 Viewpoint 7, View Northwest

Solar arrays are indiscernible at this location. This view is looking northwest of the camera location approximately 485 feet from northern arrays. Proposed Conditions shows a slight lightened area due to Project tree clearing within dense highly fragmented bare-branched trees. Also of importance is that Viewpoint 7 is on higher elevation. As noted in Section 3.2, if one steps back from the fence line in this vicinity one traverses up a slope. It was noted that Project views were not observed as one moved up the slope due to denser tree canopy, even during leaf-off conditions.

3.2.3 Viewpoint 8, View Northwest

Views from Viewpoint 8-Northwest are similar to that of Viewpoint 1. It is along a short 125 foot linear segment of fence line where screened views of northern solar arrays within the property will be obtained. This viewpoint looking northerly is 270 feet from the arrays.

3.2.4 Viewpoint 8, View Southwest

The southern solar arrays are indiscernible this location. This view is looking southwest of the camera location towards the southern solar arrays approximately 420 feet away. Proposed Conditions shows a slight lightened area within the dense highly fragmented bare-branched trees due to Project tree clearing.

3.2.5 Viewpoint 9, View Northwest

Viewpoint 9, approximately 340 feet away from the northern solar arrays is located on slightly higher ground than that of Viewpoints 1 and 8 and is approximately 55 feet further to the southeast than the existing mesh fence. Under leaf-off conditions, very densely screened views of the northern arrays can be seen.

3.2.6 Viewpoints 4 and 5, View Southwest (Existing Conditions Photographs)

Viewpoints 4 and 5 will be treated together as they are proximal to each other with similar elevations and forested existing conditions. No simulations at these two viewpoints are produced, as the existing photo illustrates the condition that the background site cannot be detected behind dense tree branches upon high-resolution photo zoom-in. During the site visit on November 8, 2022, it was agreed that views were not probable from either viewpoint. Figure 3 shows that the sightlines from Viewpoints 4 and 5 travel through the areas at the property line where, with high confidence, no visibility is expected. Therefore, it was decided early on that the focus for further site investigation in December 2022 and subsequent simulation production would be at Viewpoints 1, 7, 8, and 9.

However, in April 2023 the Neighbor's representatives requested an examination of Viewpoints 4 and 5. Preliminary simulation work for both sites using LiDAR data concluded that the density of bare-branched trees would preclude distinguishable arrays and therefore no further simulation work was performed because of this visual limitation. For these two locations, reference and

comparison with Viewpoint 8-Southwest looking towards the southern arrays will be used as the forested character and view is similar. It was established with simulation Viewpoint 8--Southwest that solar panels cannot be seen. Viewpoint 4 has a similar forested area with dense bare-branched trees between the viewpoint and the Project. Viewpoint 4 is 730 feet from proposed panels. Viewpoint 5 has variable distances from the Project that exceed 800 feet.

While existing photos for Viewpoints 4 and 5 show the character of the forested view, please also refer to LOS 14. The LOS helps illustrate the forested area in addition to the photo. Viewpoints 4 and 5 land approximately near the 375-foot mark and 350-foot mark respectively, along the profile line, just at the crest of the same hill that blocks Project views to the residence. One can see at the 360-foot mark there are two blocks of vegetation that obscures views, one consisting of 278 feet and another consisting of 222 feet totaling 500 feet of visual obstruction.

In conclusion, similar to Viewpoint 8-Southwest, views from Viewpoints 4 and 5 are not expected and as noted, no simulation is produced. Dense leaf-off tree branches would obscure the Project. As seen in the Viewpoint 8-Southwest simulation that is closer, only a minimal change in color value can be slightly detected due to clearing of trees and does not reveal Project visibility. However, in order to simulate the clearing of trees at Viewpoints 4 and 5 through such a dense array of branches (a swath of 500 feet), very tedious and careful examination must be made to discern which of those myriad of gray branches must be removed, if at all, from the photograph to depict the proposed absence of trees beginning 730 feet away. Technically, removing leaf-off vegetation such as this is more successful at closer distances or in more open areas where the discerning and parsing of tree branches versus the background is more attainable. At greater distances under these types of forested conditions, the limitations of tree clearing accuracy within the photo is challenged. And, if it is so difficult to discern any background turf or background trees in the photo it would lead one to conclude that visibility of the Project cannot be obtained. It is reasonable to conclude by observing the character of the forest seen in photos for Viewpoints 4 and 5, that visibility would not be greater than what is represented in the Viewpoint 8-Southwest simulation as there is no detection of the ground site past the tree branches when zooming in.

4.0 CONCLUSIONS

4.1 Line of Sight

Attachment 2 LOS profiles 1-13 show that minimal to no views of the Project from the LOS viewpoints are expected. There are no clear open views. In all cases, there is one or more occurrence of intervening vegetation of varying distances along each elevation profile that will screen views. This existing vegetation serves as mitigation in and of itself. Additional coniferous landscape mitigation plantings are also proposed along the Project perimeter fence in three areas along Dell Avenue.

The Attachment 3 Croton VIA photos also support extremely limited to no views even under leaf-off conditions at LOS sites. As those photos demonstrate, forested landscape even without leaves appear as a solid mass that can obstruct views. The photos suggest that even in optimal best-

case visibility conditions, views that might be obtained would be extremely minor through existing vegetative screening from proximal locations.

As noted in the *Resolution Approving Adopting SEQRA Findings for the Rezoning Petition and Proposal for the Croton Overlook Property and Development* dated December 12, 2011, the Town Board of the Town of Yorktown issued a Findings Statement in which it identified “potential for limited visual impact caused by the [Croton Overlook] Project’s roofline” and concluded “that the high tension power lines are presently quite visible from sensitive locations and have a greater existing visual impact than any potential view of the Project’s roofline.”

The Dell Avenue Solar Farm design, with a significantly lower vertical footprint (<10 feet) than the Croton Overlook Development (28 feet tall roofline), includes the preservation of existing trees as natural buffers. Through appropriate siting and mitigation, the Applicant also has reasonably minimized or avoided adverse visual impacts to the maximum extent practical, while also resolving to provide additional year-round evergreen landscape mitigation screening in several areas.

LOS elevation profiles 14, 15, and 16 were produced to address potential views from the house/residence located at 71 Hog Hill Road. The results of this analysis conclude that there will be no views to the Project from the residence nor from the surrounding “yard” area due to intervening topography between the residence and the Project.

4.2 Photosimulations

Photosimulations were provided to depict the visibility, or lack thereof, from the Neighbor’s property at 71 Hog Hill Road.

Photosimulation analysis reinforces on-site observations that there is no section of the Project that remains entirely unscreened with a clear unobstructed open view from the Neighbor’s property. The most prevalent visibility is obtained from one discrete corner of the Neighbor’s property along an approximate 125 foot length of fence line vicinity located at the far edge of the property (see bright yellow line in Figure 3). This represents a small fraction of the nearly 2,300 linear feet of shared property line between the Project and the Neighbor.

The existing mesh fence in this northwest corner effectively bisects a 1-acre square corner of the Neighbor’s property. On the northwest side of this fence section, the extreme corner of the Neighbor’s property is partitioned off from easy access by the existing 7 foot tall mesh. The interior side of this fence section, approximately 600 feet from the main residence, includes Photosimulation Viewpoints VP1, VP8, and VP9. To access this area from the residence via a straight line from the backyard involves traversing 300 feet of wooded slopes. Visibility from this location during leaf-off conditions is seasonally limited to the winter months when there is potential for cold temperature as well as snowy/icy conditions. In leaf-on conditions, the Project visibility will significantly diminish or become non-existent.

Across the remainder of the Neighbor's property, approximately 32 out of 33 acres, the extent of existing wooded forest and/or topographic obstructions ensure no significant views of the Project will be visible in worse-case (leaf-off) conditions.

The Yorktown Zoning Code § 300-81.4(E)(3)(e) states: "Landscape screening and buffering shall be required. A ground-mounted solar energy system shall be fully screened from adjacent residential properties, streets or roads on which it fronts or is visible from, and any other views which the Planning Board determines is necessary."

TRC Companies, the Applicant's environmental consultant for these visual investigations, has been providing Visual Impact Assessments for over 20 years, and for much larger Projects (>150 MW) than the proposed 3.6 MW Project, often pursuant to very stringent and robust Article 10 and 94-c regulations in New York. Visual analysis for this Project has been detailed, diligent, and thorough. Based upon TRC's experience and expertise, the existing topography and densely forested conditions provide visual mitigation of the Project from the Neighbor's property. Any expectation that the solar project will be completely invisible, however, is impractical, unreasonable, and excessive.

It is TRC's professional opinion that the Dell Avenue Solar Farm Project is well-sited and visual impacts to the residents of the Town of Yorktown and neighboring areas should be regarded as either non-existent or not significant.

DELL AVENUE SOLAR FARM

ATTACHMENT 1

**COMPARISON FOOTPRINT BETWEEN CROTON
OVERLOOK AND DELL AVENUE SOLAR FARM**

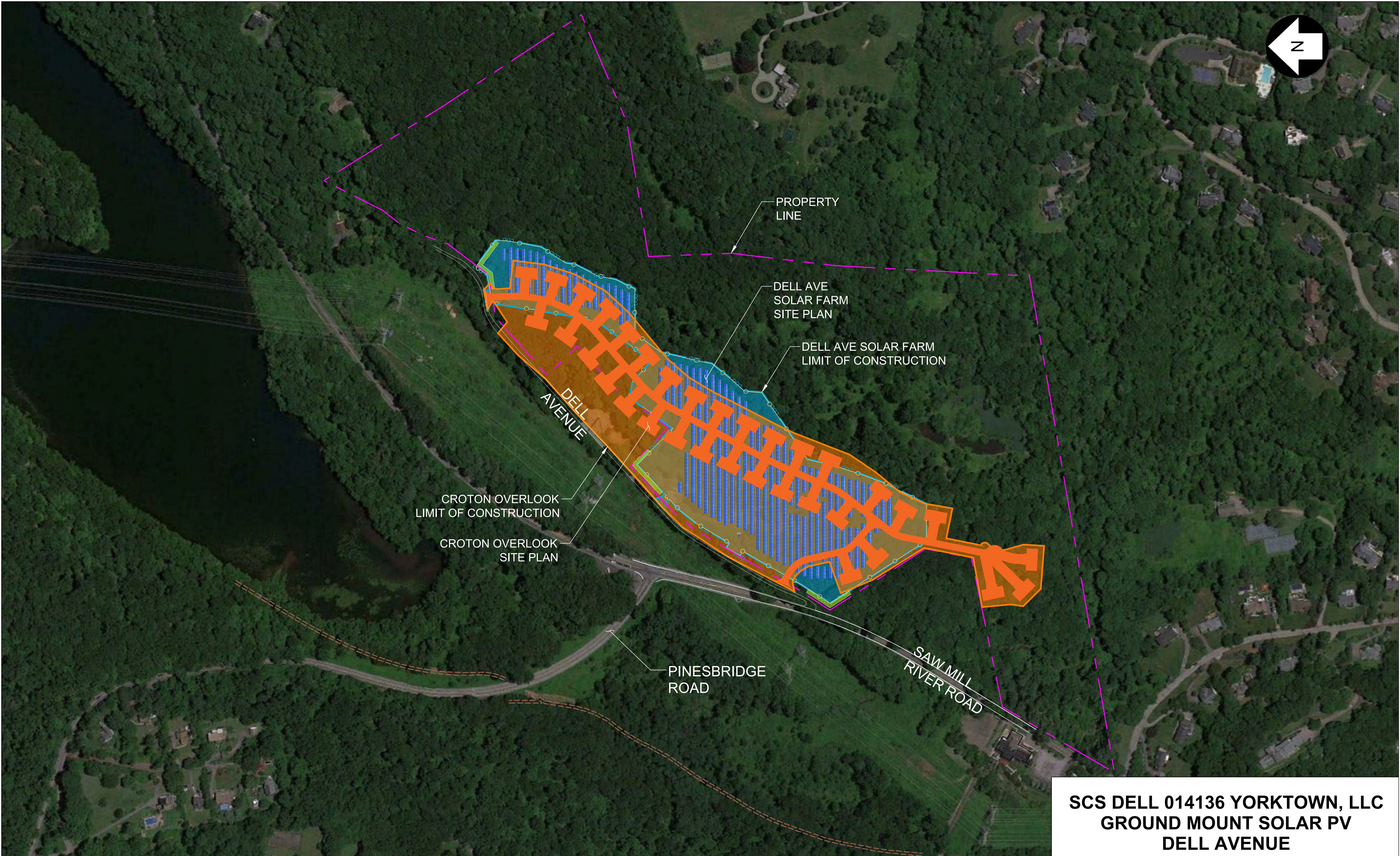


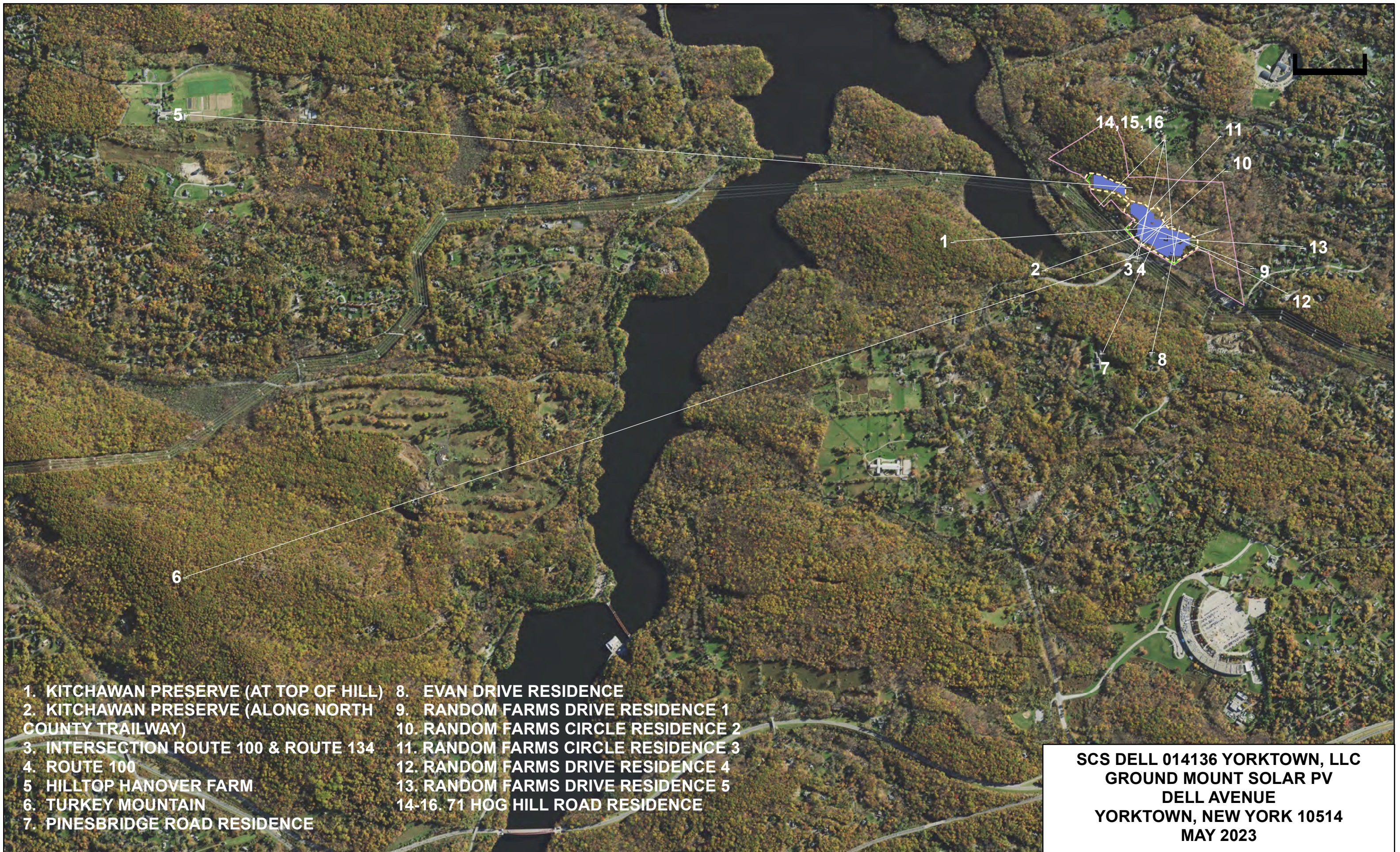
FIGURE 1. CROTON OVERLOOK AND YORKTOWN SOLAR SITE PLANS
PRELIMINARY DRAWINGS (08/01/2022)

SCS DELL 014136 YORKTOWN, LLC
GROUND MOUNT SOLAR PV
DELL AVENUE
YORKTOWN, NEW YORK 10514
AUGUST 1, 2022 ◆ REVISION 0

DELL AVENUE SOLAR FARM

ATTACHMENT 2

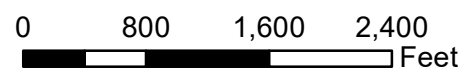
LINE OF SIGHT PROFILES

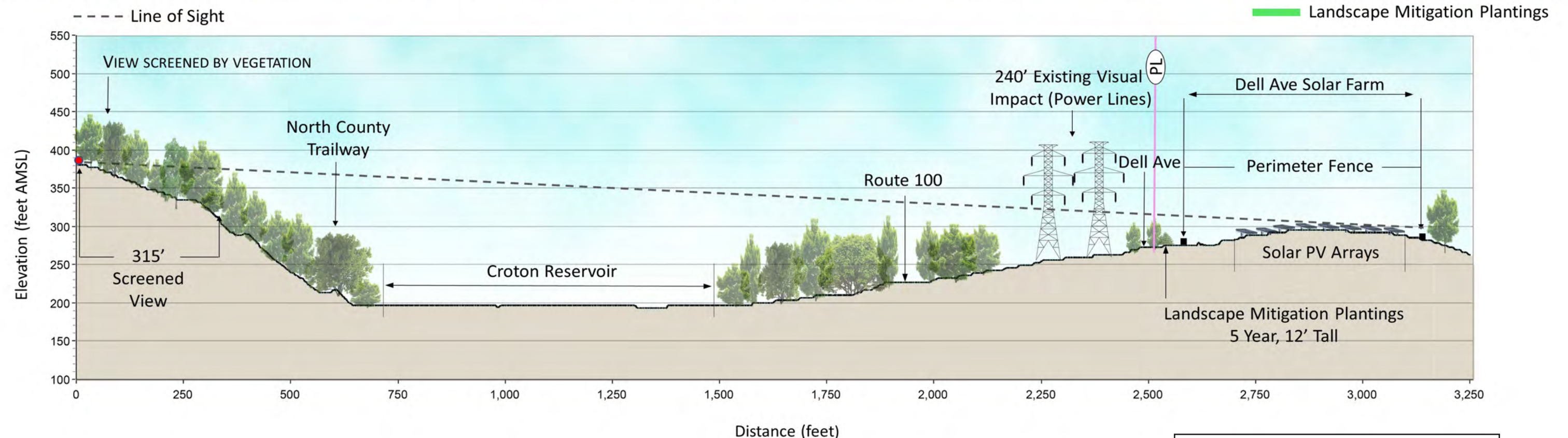
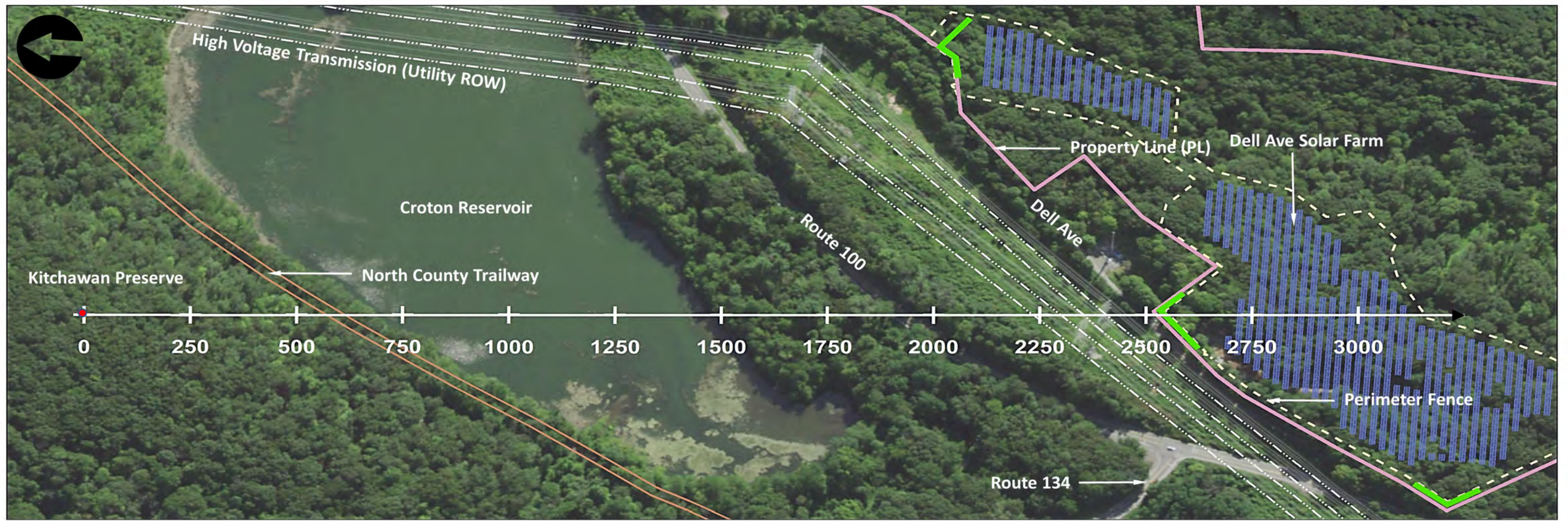


- | | |
|---|-------------------------------------|
| 1. KITCHAWAN PRESERVE (AT TOP OF HILL) | 8. EVAN DRIVE RESIDENCE |
| 2. KITCHAWAN PRESERVE (ALONG NORTH COUNTY TRAILWAY) | 9. RANDOM FARMS DRIVE RESIDENCE 1 |
| 3. INTERSECTION ROUTE 100 & ROUTE 134 | 10. RANDOM FARMS CIRCLE RESIDENCE 2 |
| 4. ROUTE 100 | 11. RANDOM FARMS CIRCLE RESIDENCE 3 |
| 5. HILLTOP HANOVER FARM | 12. RANDOM FARMS DRIVE RESIDENCE 4 |
| 6. TURKEY MOUNTAIN | 13. RANDOM FARMS DRIVE RESIDENCE 5 |
| 7. PINESBRIDGE ROAD RESIDENCE | 14-16. 71 HOG HILL ROAD RESIDENCE |

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 DELL AVENUE
 YORKTOWN, NEW YORK 10514
 MAY 2023**

FIGURE 2: OVERVIEW MAP LINE OF SIGHT PROFILES #1 THROUGH #16

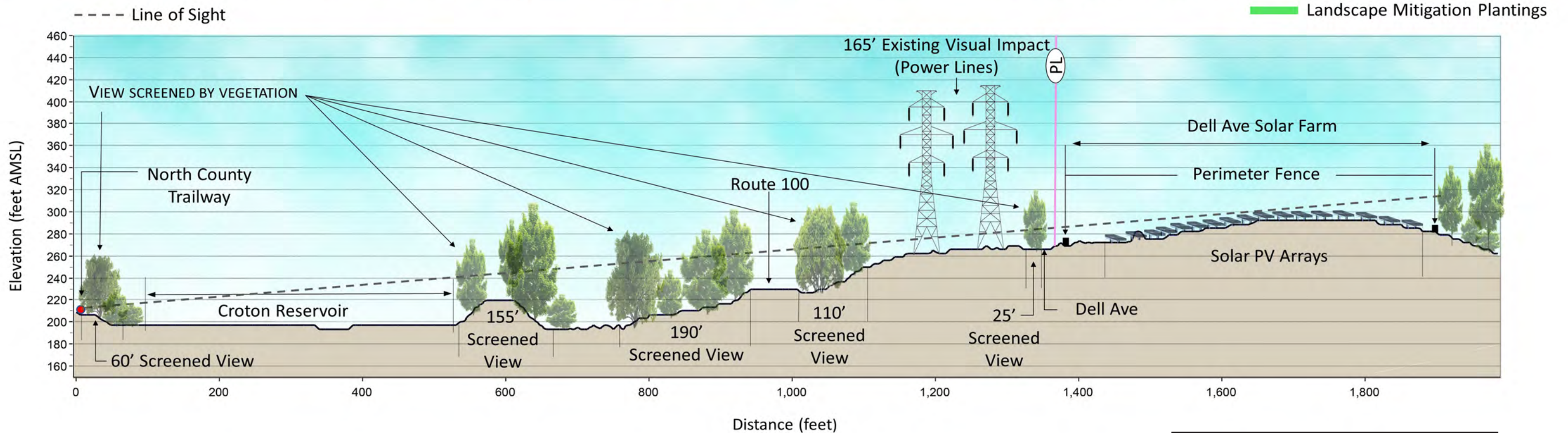
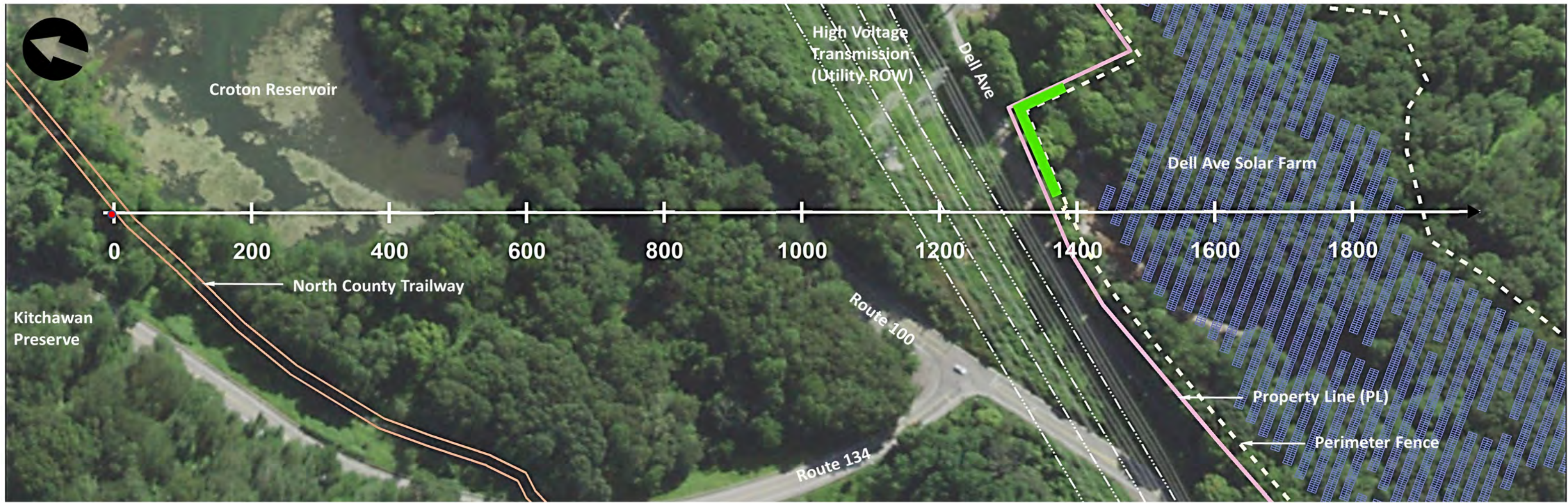


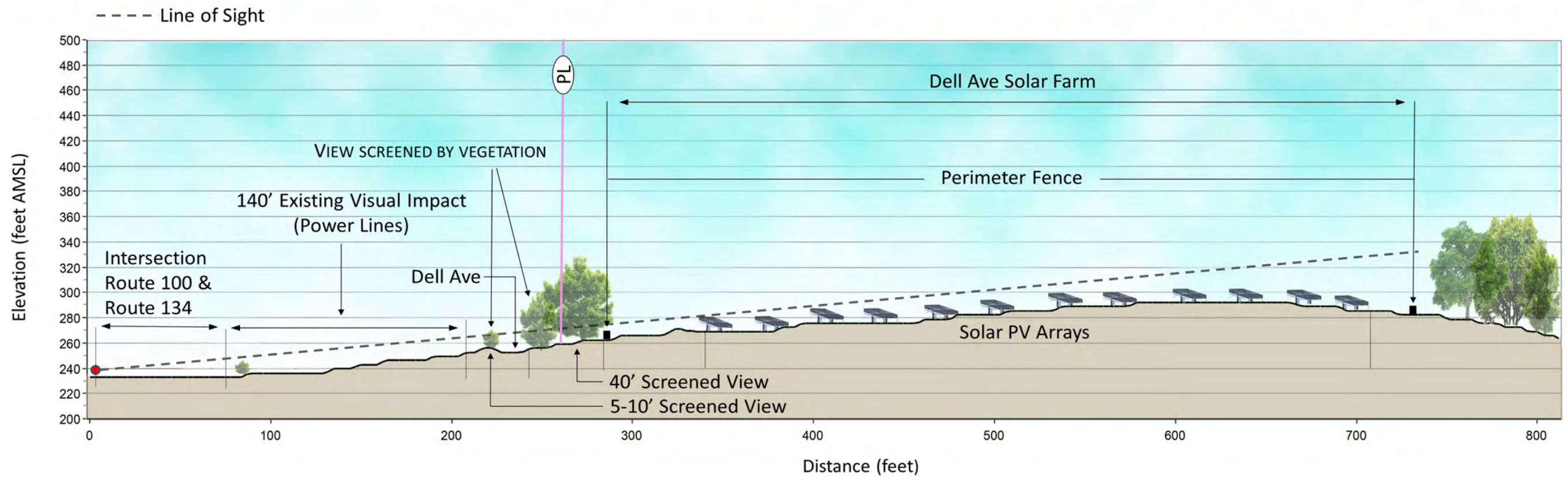
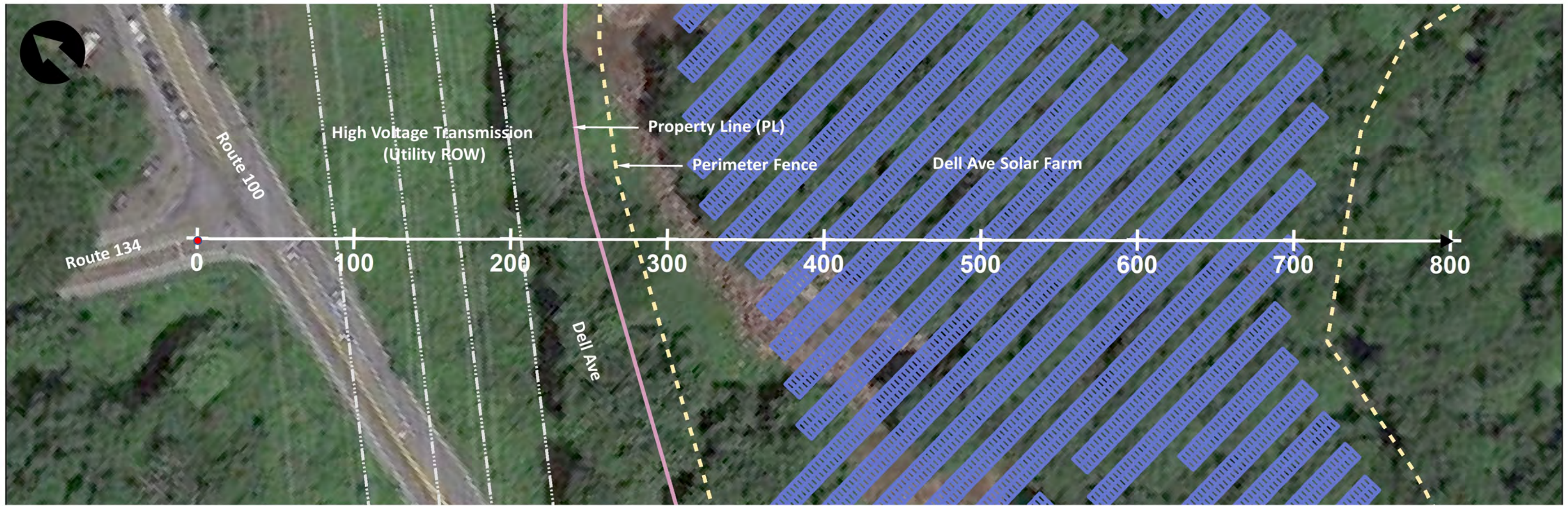


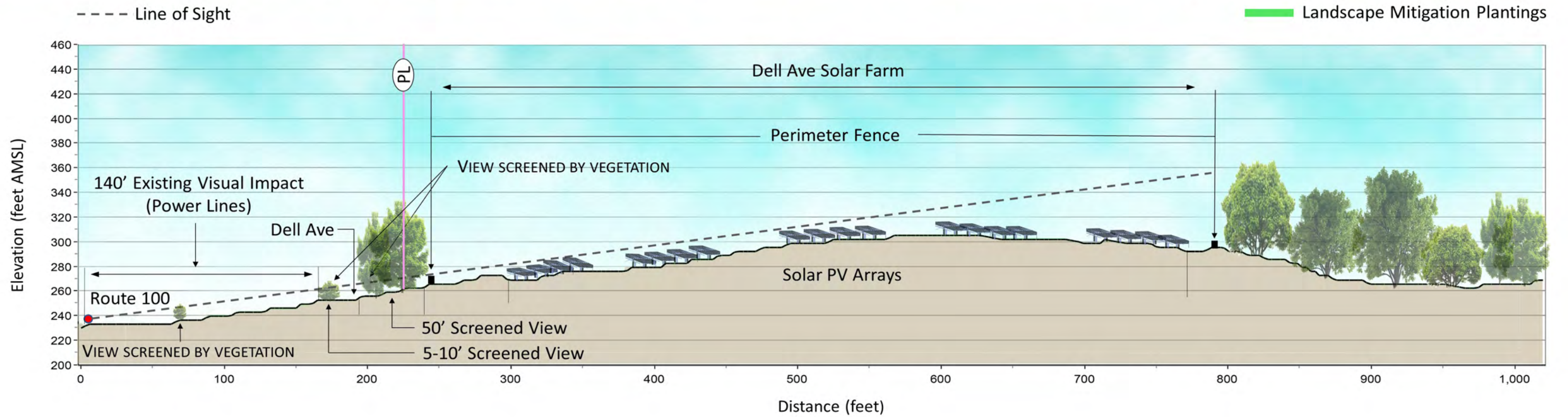
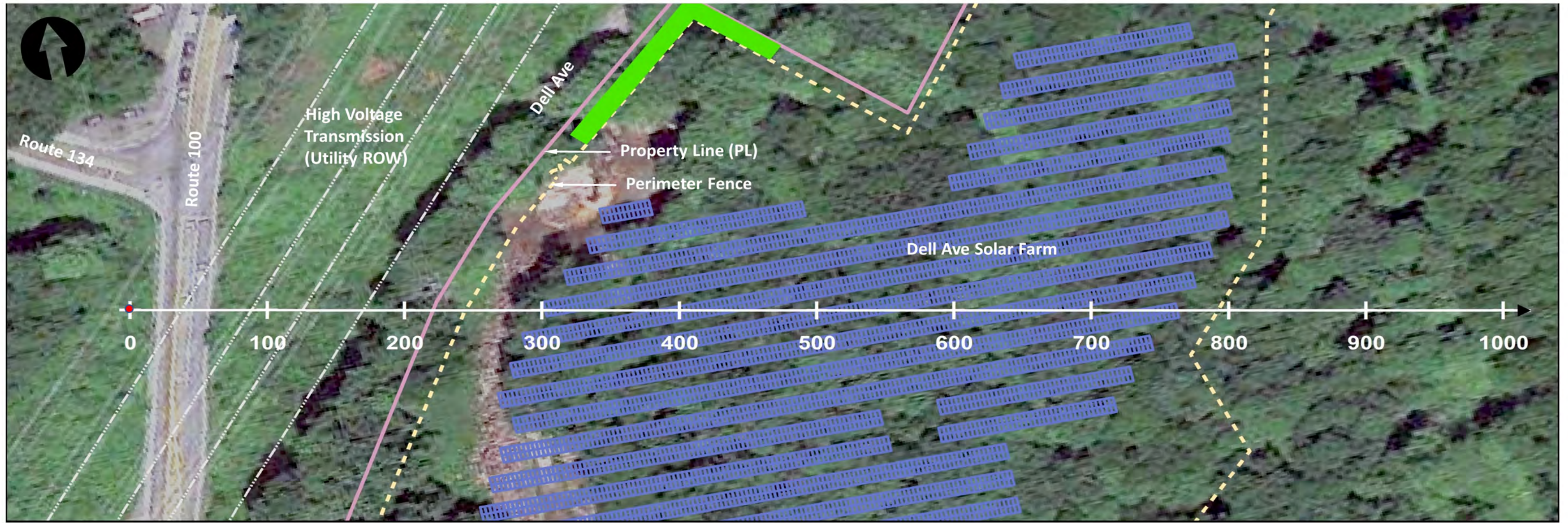
LOS 1- Kitchawan Preserve (top of hill)

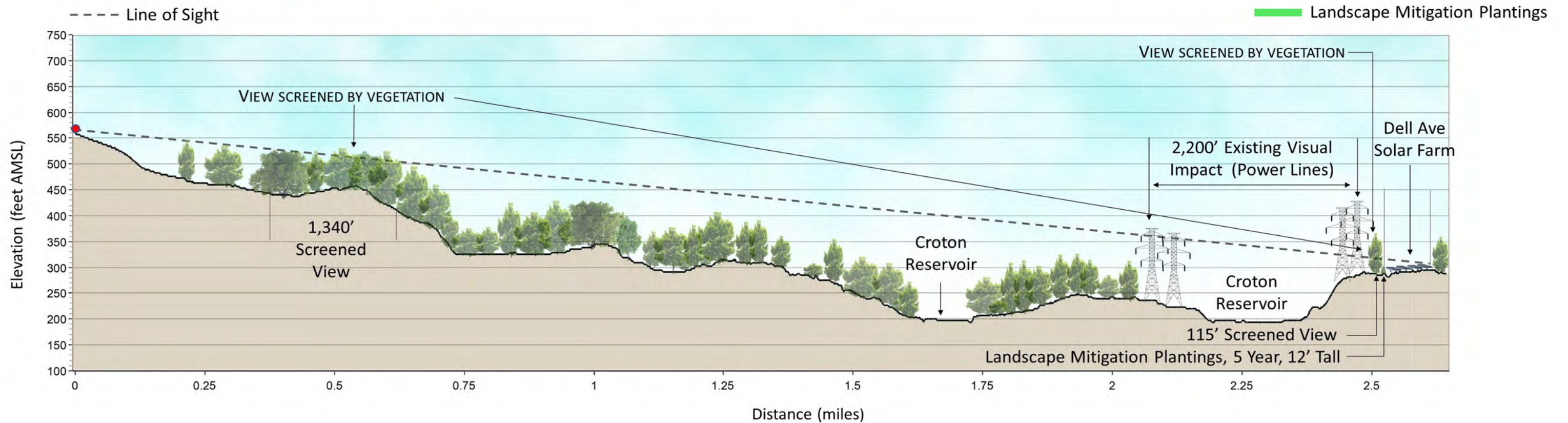
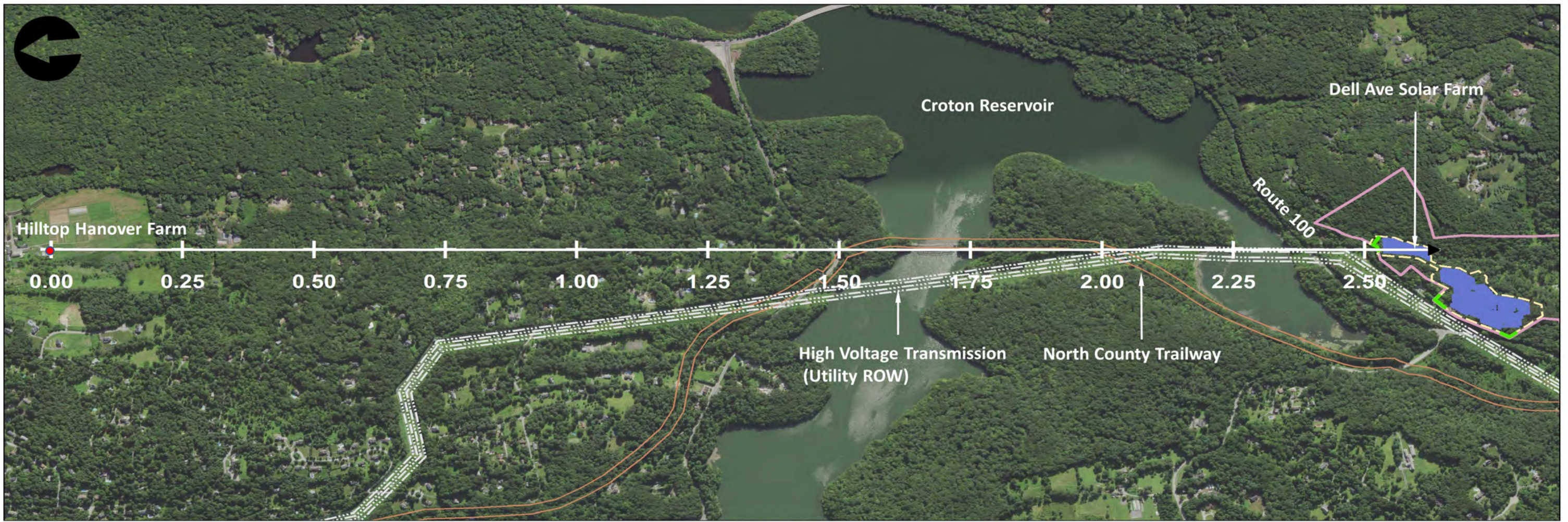
DELL AVENUE SOLAR FARM

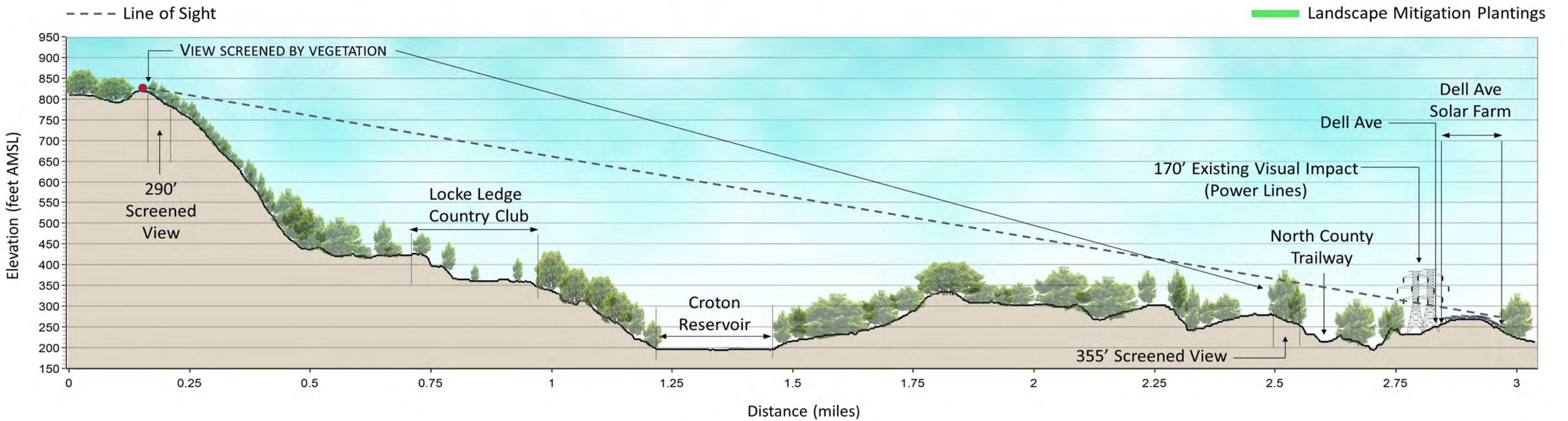
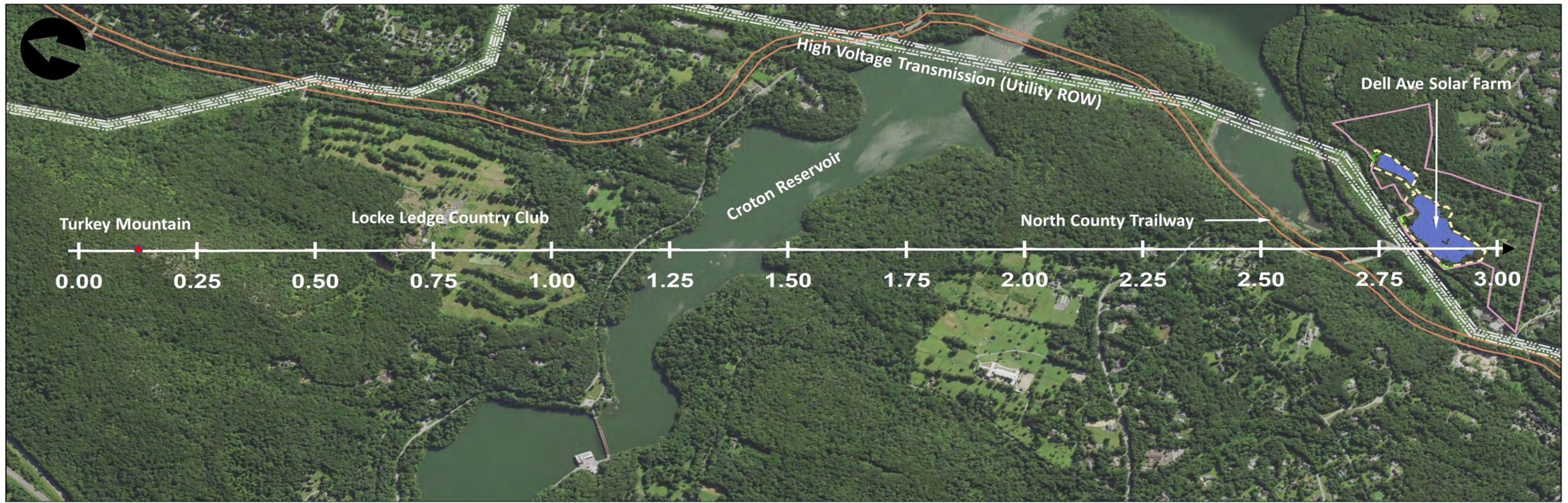
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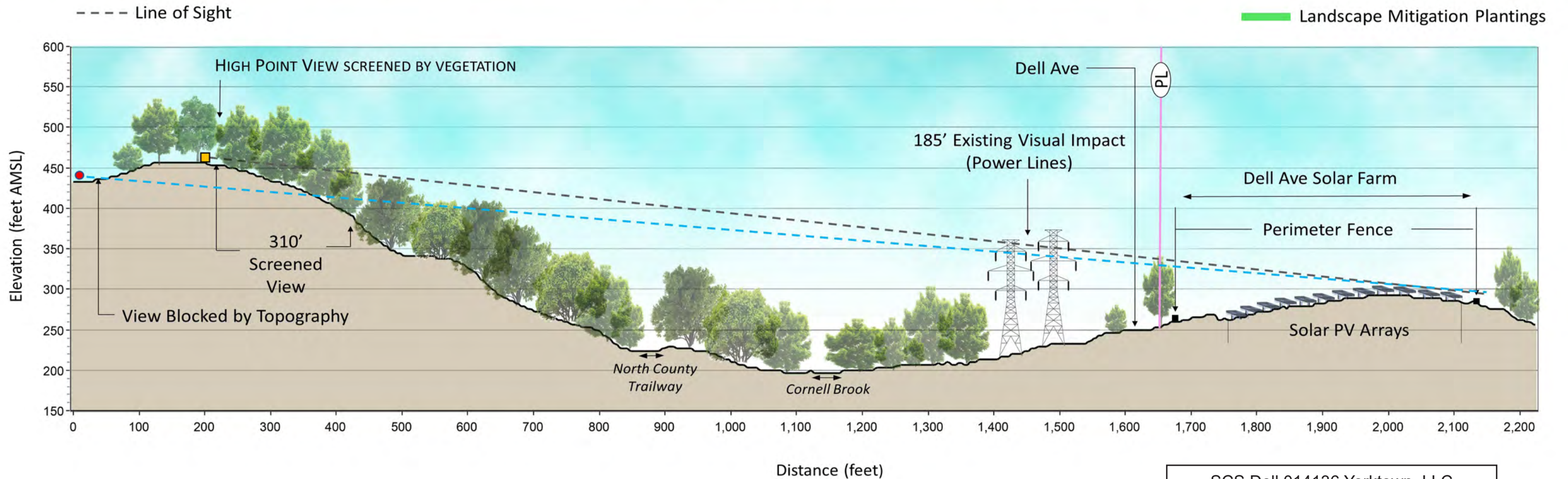


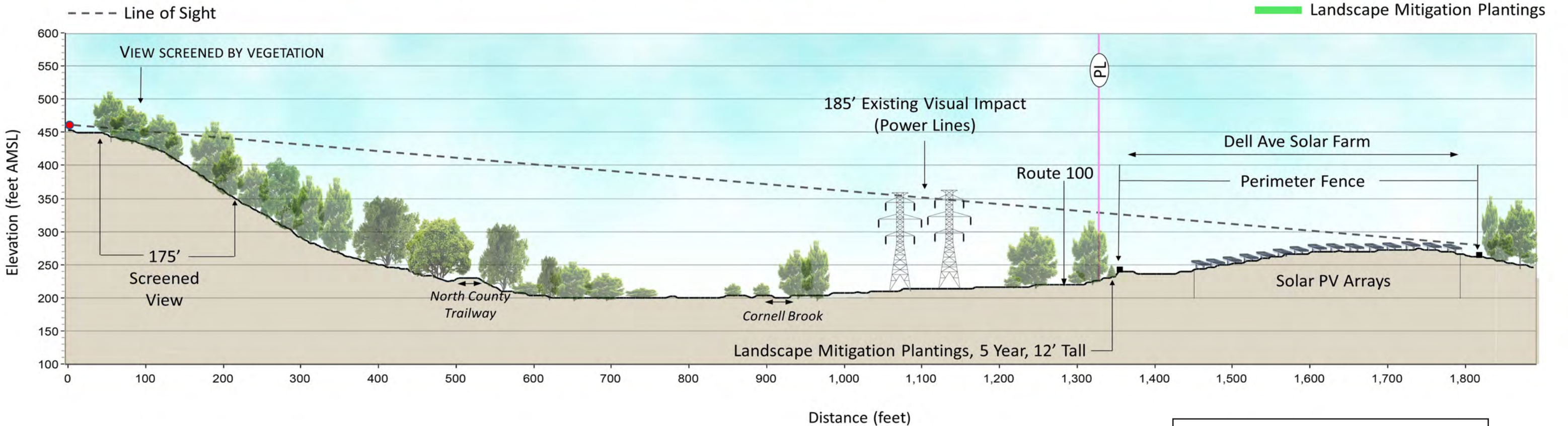


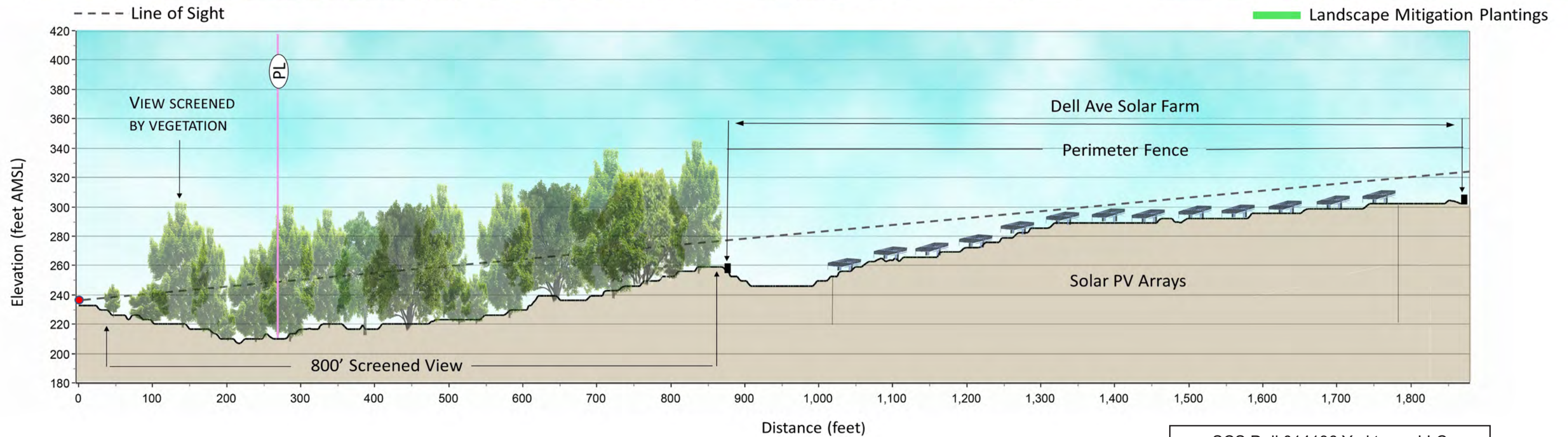
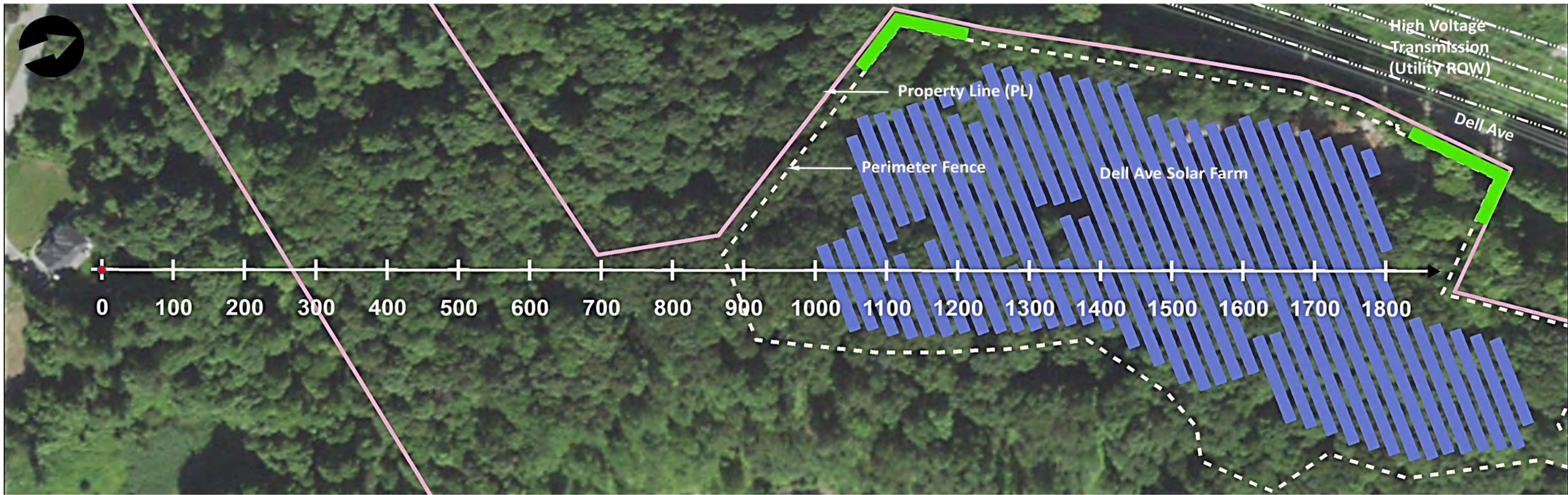








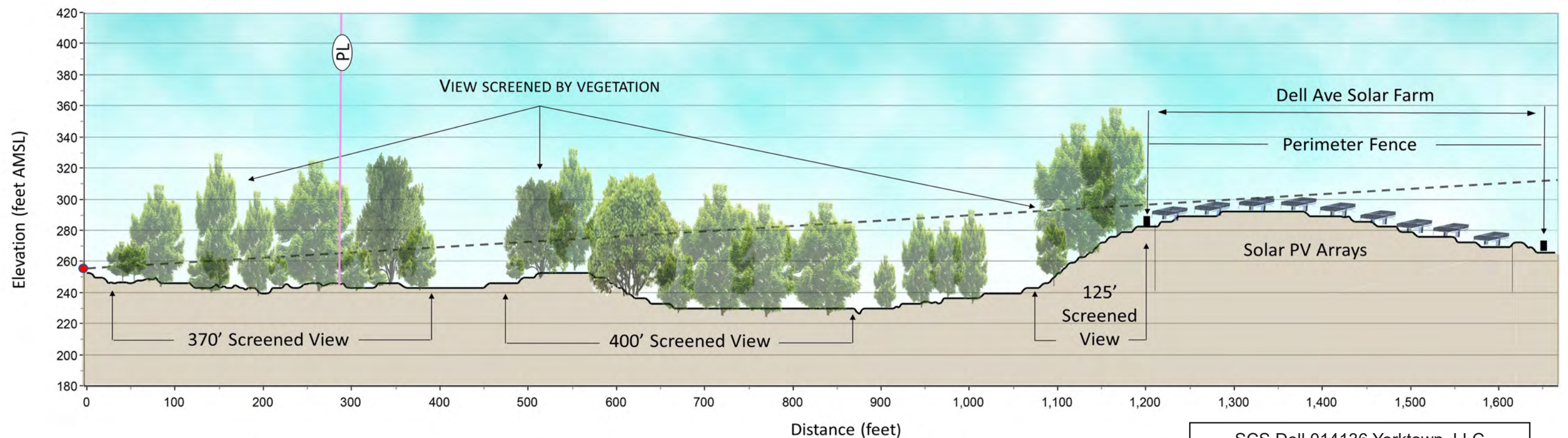


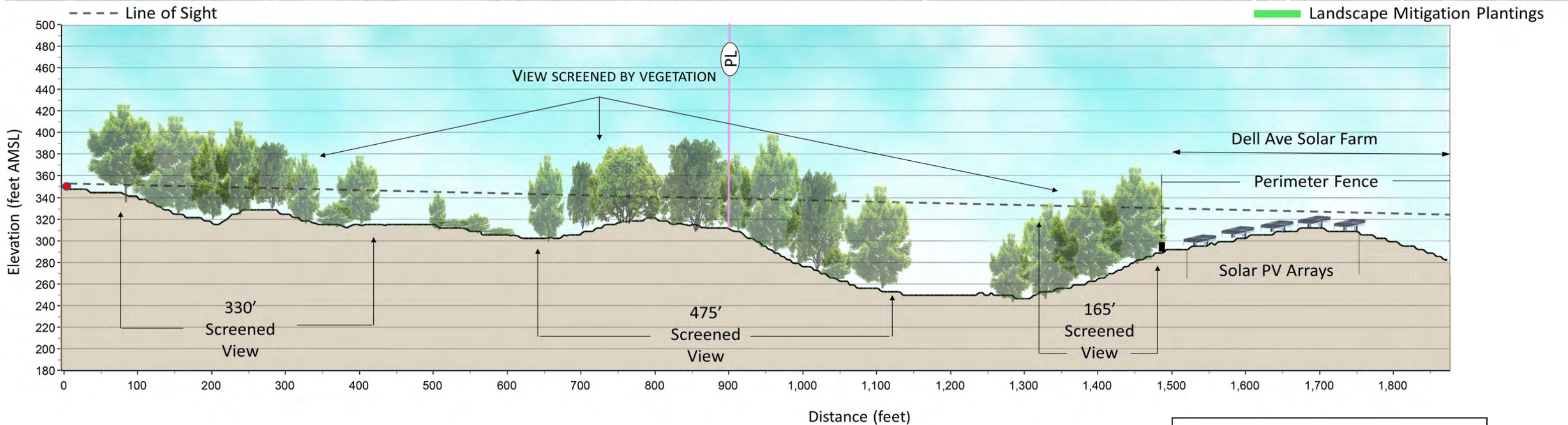
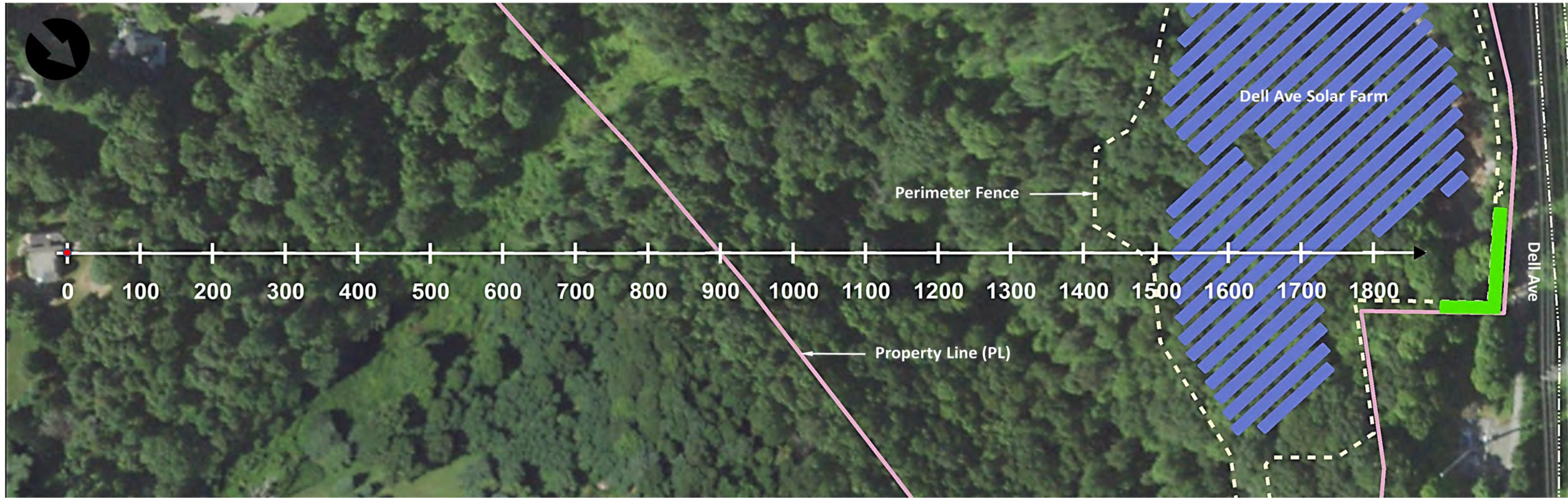


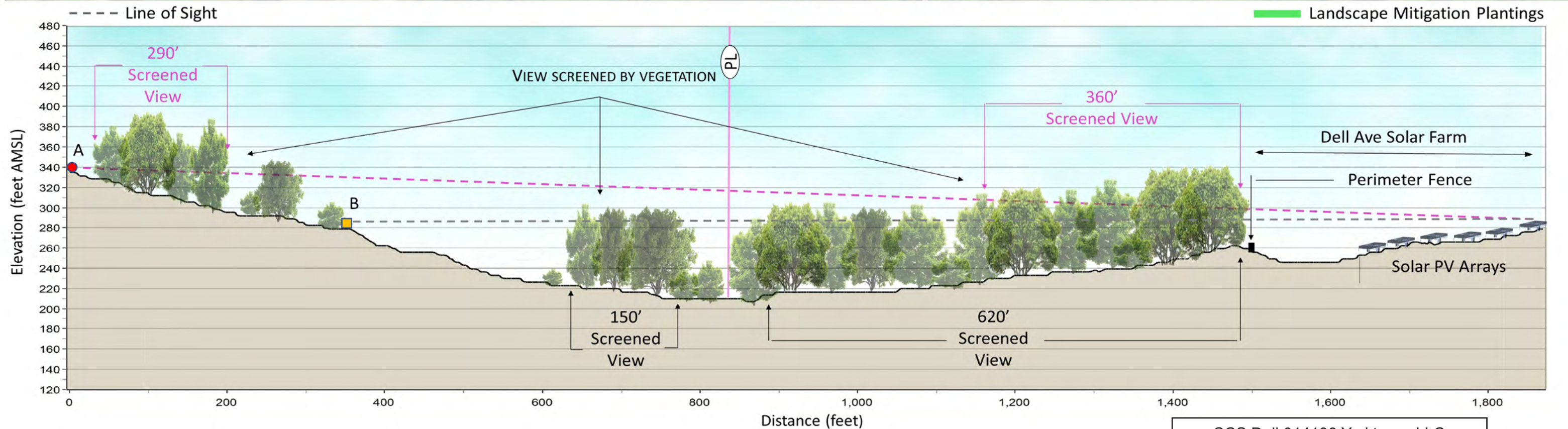
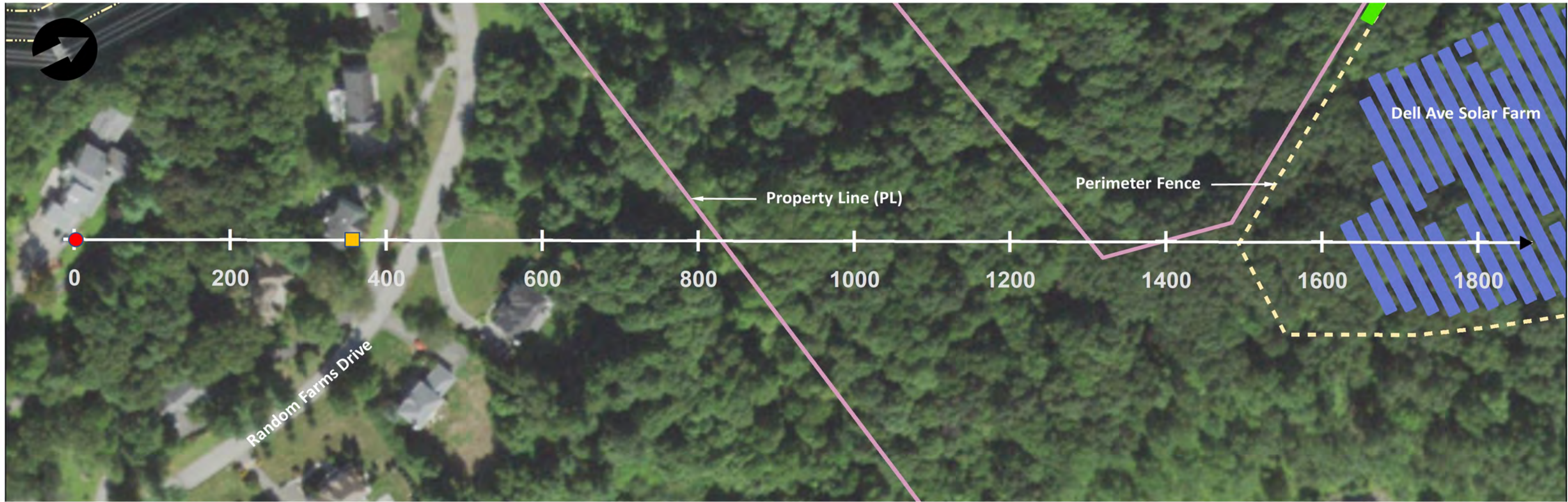


--- Line of Sight

█ Landscape Mitigation Plantings



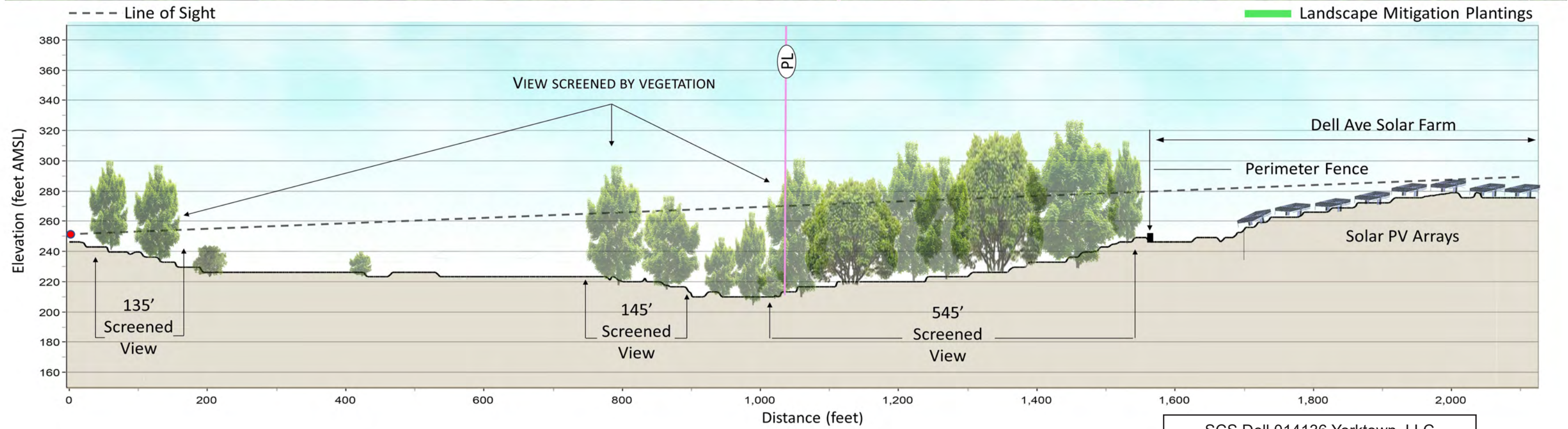




LOS 12 - Random Farms Circle, Residence 4

DELL AVENUE SOLAR FARM

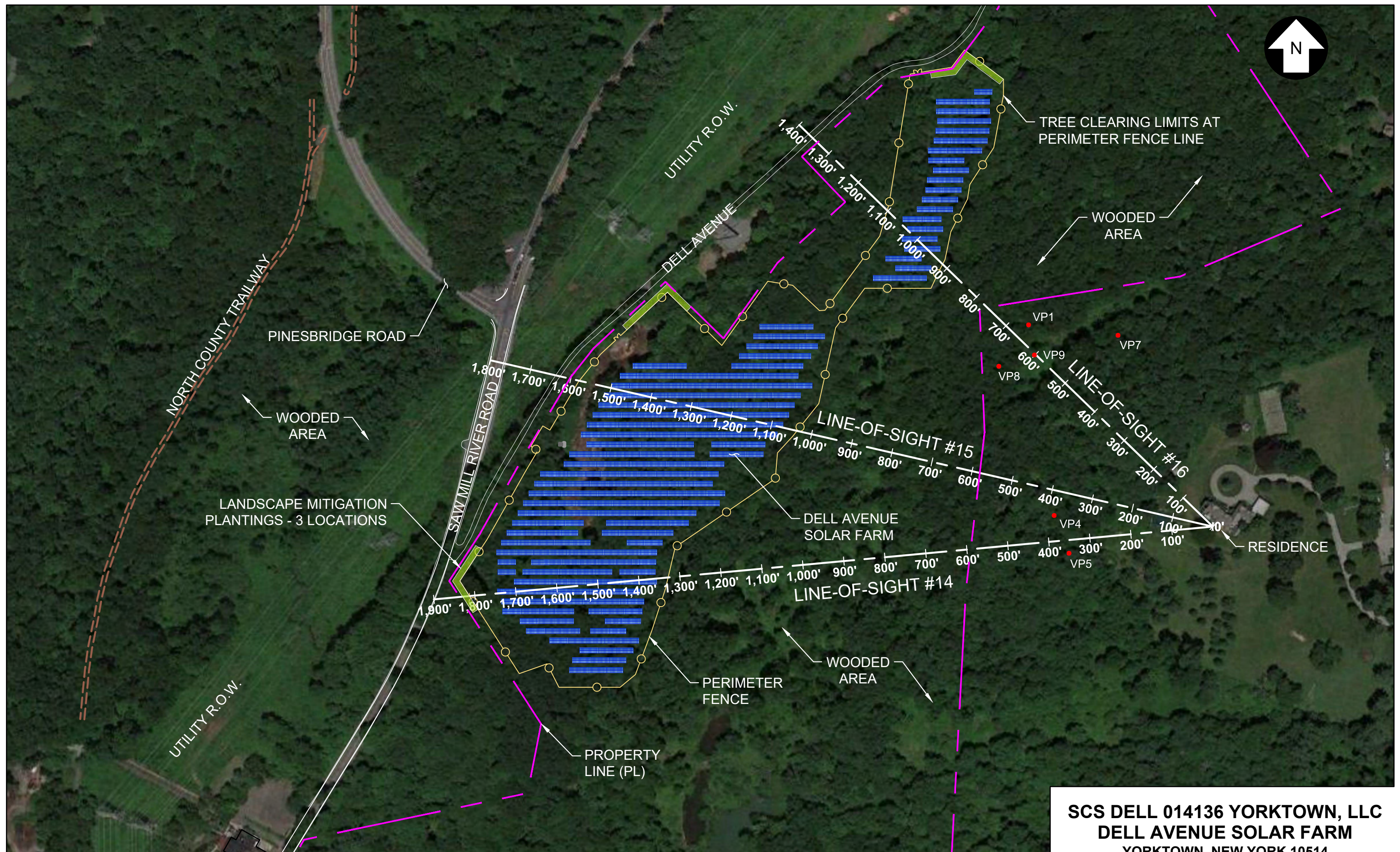
SCS Dell 014136 Yorktown, LLC
Visual Assessment - January 11, 2023



LOS 13 - Random Farms Circle, Residence 5

DELL AVENUE SOLAR FARM

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 Visual Assessment - January 11, 2023



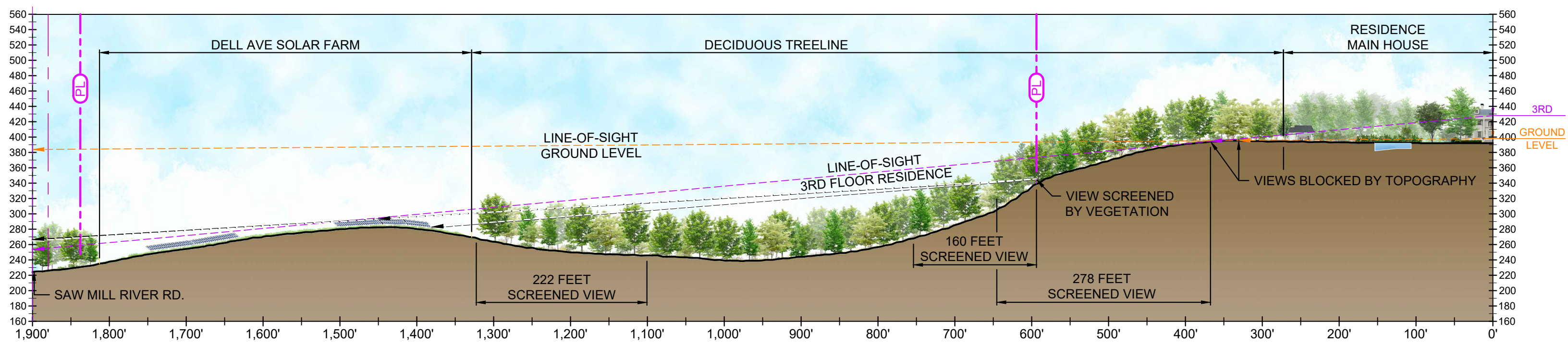
SCS DELL 014136 YORKTOWN, LLC
DELL AVENUE SOLAR FARM
YORKTOWN, NEW YORK 10514
JUNE 14, 2022 ◆ REVISION 0

OVERALL PLAN VIEW: LINE-OF-SIGHT #14, #15, AND #16
JUNE 2022 | REVISED MAY 2023





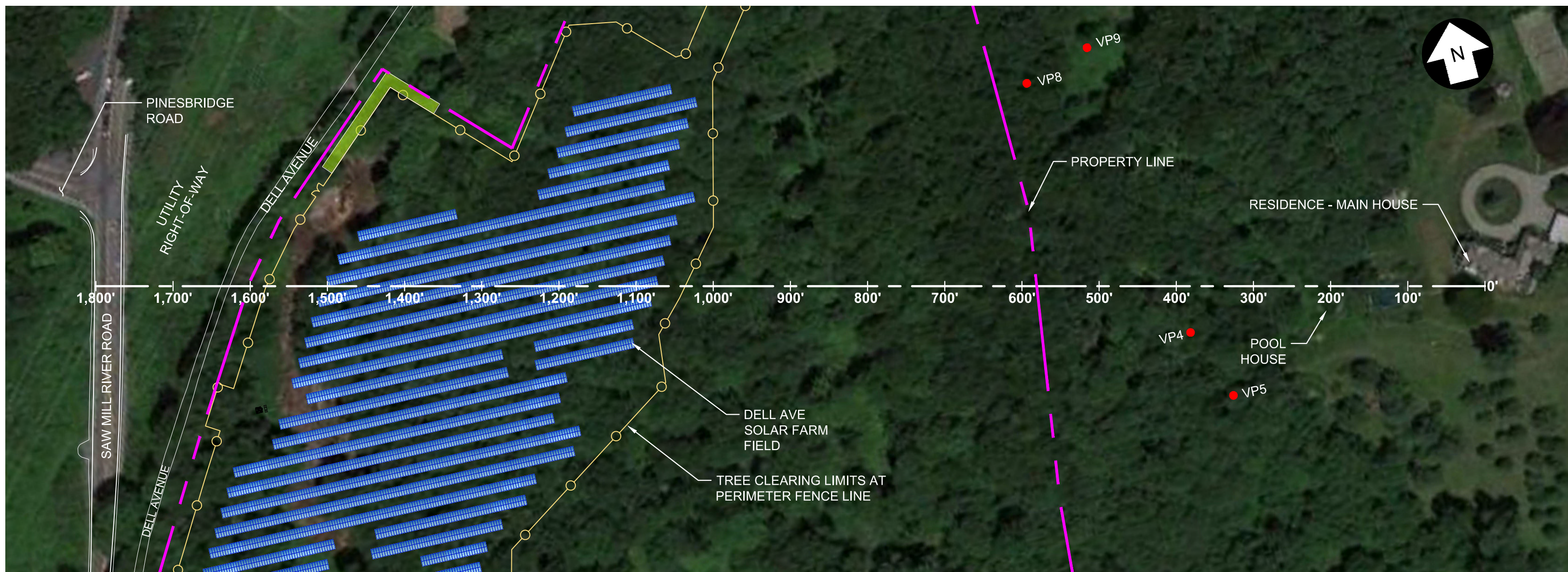
PLAN VIEW: LINE-OF-SIGHT #14 (STA: 0 TO 1,900)



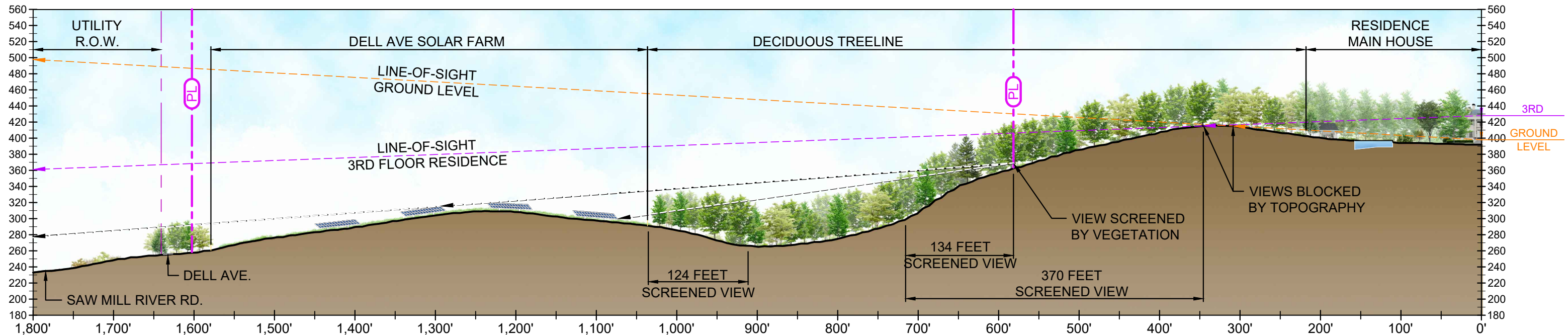
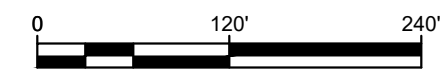
PROFILE VIEW: LINE-OF-SIGHT #14 (STA: 0 TO 1,900)

Horizontal and Vertical Scale - 1 : 1





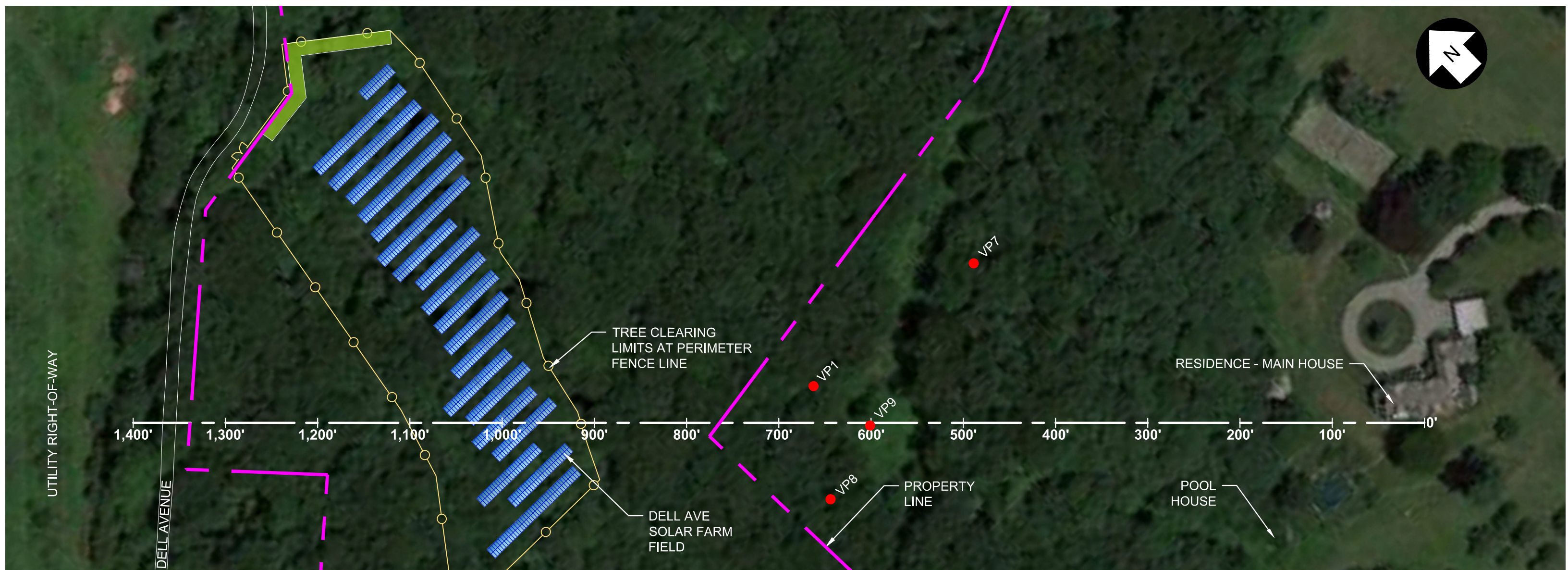
PLAN VIEW: LINE-OF-SIGHT #15 (STA: 0 TO 1,800)



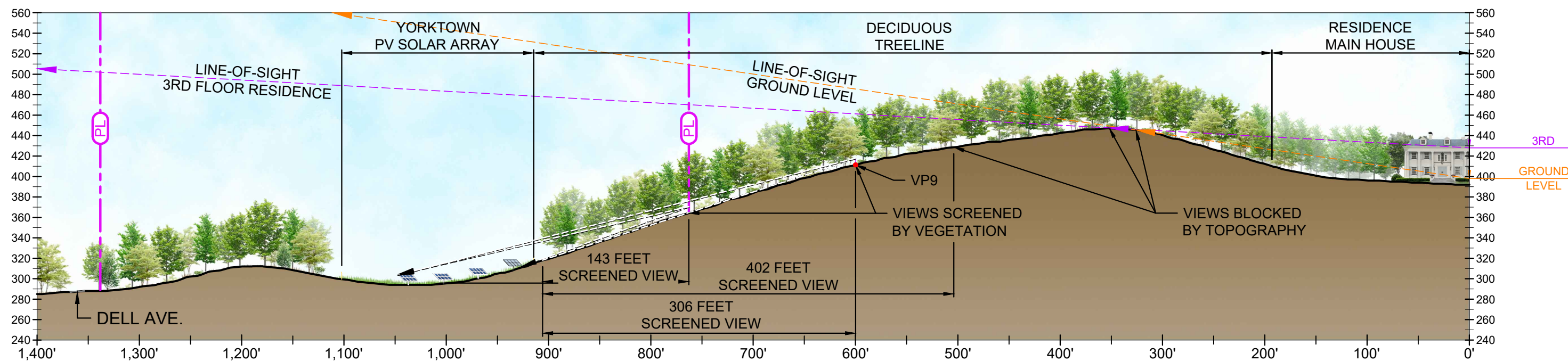
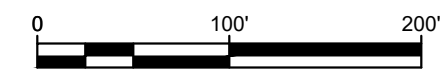
PROFILE VIEW: LINE-OF-SIGHT #15 (STA: 0 TO 1,800)



Horizontal and Vertical Scale - 1 : 1



PLAN VIEW: LINE-OF-SIGHT #16 (STA: 0 TO 1,400)



PROFILE VIEW: LINE-OF-SIGHT #16 (STA: 0 TO 1,400)

