Attachment F

Revised Visual Impact Assessment

Visual Impact Assessment

Case No. 21-00752

October 2021
Revised February 2022

Riverside Solar Project

Towns of Lyme and Brownville, New York

Prepared For:

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

1.0 INTRODUCTION

Riverside Solar, LLC, a subsidiary of The AES Corporation (AES), is proposing to construct, operate, and maintain the Riverside Solar Project (the Facility). Riverside Solar, LLC (the Applicant) is submitting their application under Section 94-c of the New York Executive Law.

1.1 Regulatory Requirement and Methodology

This Visual Impact Assessment (VIA) has been prepared to comply with Exhibit 8 of 19 NYCRR §900.2.9 so that the extent and significance of the Facility's visibility can be determined. This VIA will include the identification of sensitive aesthetic resources, viewshed mapping, photographic simulations, and proposed visual mitigation. Within the framework of the Exhibit 8 requirements, this VIA will address the following:

- The character and visual quality of the existing landscape.
- The visibility of the Facility (above ground elements).
- The appearance of the Facility (photographic simulations) from key locations.
- The nature and degree of visual change resulting from construction and operation of the Facility.
- Identification of those visual resources that will have visibility of the Facility.

By addressing the stated requirements, this VIA will include both a quantitative and qualitative assessment that will allow reviewing agencies and the public to understand the anticipated visibility of the Facility, and potential visual impacts and their significance. The study area (referred to as the "visual study area" or "VSA") for this VIA will extend two miles around the Facility Site.

1.2 Facility Description

The Riverside Solar Facility will have a generating capacity of up to 100 megawatts (MW) and will be located on land leased from owners of private property in the Towns of Lyme and Brownville, Jefferson County, New York. The Facility will comprise of commercial-scale solar arrays (or panels), access roads, electric collection lines, a collection substation, and electrical interconnection infrastructure. Refer to Figure 1 in Attachment 1 for the site plan.

Solar Panels and Arrays: The Applicant intends to utilize a bifacial solar module similar to the Jinko Solar Tiger Pro 72HC-TV 530W Bifacial Module with 3.2 mm Anti-Reflection Coating. The Facility will utilize a single axis tracking system (allows the panels to follow the sun in an east to west direction) such as the DuraTrack HZ v3 by Array Technologies. Technical data sheets have been included in the Appendices 2-1 and 2-2.

The maximum height, at full tilt, of the proposed tracker system will only be sustained for a relatively short period of time during daylight hours as it will make continuous angle adjustments

to follow the sun. For example, it may lay flat near mid-day when the sun is directly overhead resulting in a panel height considerably lower than its maximum height for a substantial amount of time during the day.

For the purposes of this report, it is anticipated that the maximum height of the panels will be eight feet and eleven inches.

Inverters: Inverters will be located throughout the Facility to convert the direct current (DC) electricity generated by the solar modules into alternating current (AC) electricity. Cables from the solar modules are routed to the inverters using a CAB® cabling system or underground lines. The collection lines then convey electricity from the inverters underground to the Facility collection substation and ultimately to the existing electric transmission system. The Applicant intends to use Power Electronics HEM inverters, or a similar make/model. Technical data sheets are included in the Appendix 5-2.

Collection Lines: The 34.5 kilovolt (kV) collection lines will connect the inverters to the Facility collection substation. Collection lines will be installed underground via direct burial and horizontal directional drilling.

Facility Collection Substation: The 34.5 kV collection lines within the Facility Site[1] will collect electricity from the inverters and transport it to a new collection substation, located in the north central portion of the Facility Site, where the voltage will be stepped up to 115 kV. Plan and profile drawings, including a lighting plan associated with the collection substation are included in the Exhibit 5 Appendices.

Point of Interconnection (POI) Facilities: Power from the collection substation will then be transferred 250 feet to the existing National Grid Thousand Island – Coffeen Street #4 Lyme Tap 115 kV transmission line. The collector substation and POI facilities will be transferred to National Grid to own, maintain, and operate.

Access Roads: Roads within the Facility Site used to access the solar panels will follow existing farm roads and trails, where practicable, to minimize the need for new roads and associated land disturbances. The same access roads used during construction will be used during operation of the Facility and will be 20 feet wide and gravel surfaced.

Fencing: Fencing will be placed around the perimeter of the Facility and associated structures as required by the National Electric Code (NEC). Fencing will be chain-link and seven feet in height. Around the perimeter of the substation, the fence will be six feet in height, topped with one-foot barbed wire.

[1] The Facility Site consists of land that is currently leased by the Applicant and can therefore be defined as properties belonging to participating landowners. Facility site does not designate the specific area within the fenced in area, which is referred to as the Facility.

2.0 CHARACTER OF THE EXISTING LANDSCAPE

Characteristics of the existing landscape may be broken down into basic features including landform, vegetation, water, and land use and development. Understanding the characteristics of the landscape is imperative to understand how a proposed development may affect or change it.

The Facility is located approximately 0.5 miles east of Sawmill Bay and 8.7 miles northwest of the City of Watertown. The VSA is rural in nature and primarily consists of forested lands, wooded wetlands, open land that also includes agricultural uses (hay/pasture and cultivated crops), transportation uses (e.g., New York State [NYS] Route 12E), as well as rural residential land (e.g., Village of Chaumont). The Facility is located within AR (Agricultural and Rural Residential), WO (Wind Overlay) and AR-2 (Agricultural Residential 2) zoning districts for the Towns of Lyme and Brownville, respectively.

Various views of the rural character and the nature of roadways found within the VSA are contained in the Existing Landscape Photolog (Attachment 3).

Landform

The Towns are located within the Ontario Lowland physiographic region, which can be characterized as having highly variable terrain comprised of glacial tills typical of the eastern shore of Lake Ontario. However, the landscape within the VSA generally appears to be relatively flat or gently sloping. Elevations range from approximately 250 feet above sea level (ASL) along Chaumont Bay upwards to approximately 415 feet ASL in the northeast section of the VSA in the vicinity of Depauville Road. Also, along the Chaumont River, steep terrain is noticeable from the water's edge to the south towards County Route 179. Within the Facility Site, the elevation ranges between 270 and 361 feet ASL.

Vegetation

Historically, forest vegetation within this region of New York State was dominated by beech, sugar maples and smaller amounts of white oak, basswood, hemlock, pine, elm, and white ash. Although forests once covered the entire region, agricultural uses and land development resulted in a significant amount of vegetation removal; only scattered second growth woodlots remain. These species are also visible within hedgerows, fallow fields, and lands generally not suitable for development or agricultural uses (e.g., ravines, wetlands).

Water

Water is an integral part of the landscape, specifically within the western edge of the VSA. Caumont Bay (including Sawmill and Guffin Bays) provides a gateway to Lake Ontario and the St. Lawrence River (Thousand Islands region); offering individuals with a variety of passive and active recreational opportunities. East of the Bay's irregular shaped shoreline and adjacent lands, water resources become less noticeable and dominant.

Outside the Bay, the second most noticeable resource is likely to be the Chaumont River. Approximately 2.6 miles[2] of the River is in the northwest portion of the VSA. It has a westerly flow that empties into the Chaumont Bay and exhibits a varying width from approximately 80 to 470 feet within this section.

In addition, the VSA contains additional water resources such as Horse Creek, Guffin Creek, scattered wetlands, streams, and ponds. Generally, these are less noticeable within the landscape.

Land Use and Development

The VSA is rural in nature and as such dominated by forest and agriculture. In this setting, development is generally seen along transportation corridors and within community settings (e.g., villages, hamlets, roadside).

Transportation

Although limited in number, different types of transportation corridors, or roadways, are evident. These roadways range from the two-lane paved state route that sees a higher number of users to the narrower one-lane gravel road accommodating a limited number of users.

The primary roadway within the VSA is NYS Route 12E, which is a two-lane asphalt rural highway that travels in a north-south direction. Route 12E is approximately 36 miles in total length (nearly 5.6 miles are within the VSA) connecting the Village of Brownville from the south and terminating in the Village of Clayton. This roadway is identified as a minor arterial by New York Department of Transportation (NYSDOT)[3] therefore providing higher travel speeds and minimal disruptions to traveling vehicles. In addition, this roadway is also part of the 518-mile Great Lakes Seaway Trail that extends from the Pennsylvania/Ohio State border to Rooseveltown, New York[4].

In addition to NYS Route 12E, a small segment of NYS Route 180 as well as numerous county and local roads traverse the area in a variety of directions. These roadways are generally lightly traveled and include, but are not limited to: Case Road, Depauville Road, Moffatt Road, Morris Tract Road, Old Town Springs Road, Pillar Point Road, Smith Road, Walrath Road, Weaver Road, County Route 59 (North Shore Road), County Route 125, and County Route 179. These account for the largest percentage of total roadway miles within the VSA. They tend to be shorter in length (relative to region) and primarily facilitate direct access to property owners with many driveways and access points. Roads are typically two-lane (stripped or not) with asphalt pavement, and some being narrow gravel surfaced (seasonal) roads with limited shoulder and

[2] Measured from the VSA boundary to the Route 12E bridge.
[3] Existing roadways fall into three functional classifications (arterial, collector, and local) as defined by NYSDOT Office of Technical Services. https://gis.dot.ny.gov/html5viewer/?viewer=FC
[4] https://www.fhwa.dot.gov/byways/byways/2488

roadside treatments. In addition, some of these roadways may experience roadside vegetation in close proximity to the travel lanes.

To assist in further describing the rural nature of the area and thus providing an understanding of the quantity of viewers by road travel, annual average daily traffic (AADT)[5] counts are presented in Table 1 for roadways available from the NYSDOT *Traffic Data Viewer* [6]. As identified, NYS Route 12E has the highest AADT between NYS Route 180 and County Route (CR) 59. The least traveled road based on the information available is Morris Tract Road. For perspective, Interstate 81 in Watertown area has an AADT of 25,704.

Table 1. Available Traffic Data within the Visual Study Area

Route/ Road Name	From	To	AADT
NYS Route 12E	NYS Route 180	County Route (CR) 59	5,425
NYS Route 12E	CR 59	CR 125	4,348
NYS Route 12E	CR 125	CR 179	5,287
NYS Route 12E	CR 179	CR 8	4,791
NYS Route 12E	CR 8	CR 57	2,786
CR 8 (Millens Bay Road)	Root Road	NYS Route 12E	1,119
CR 179 (Old State Route)	NYS Route 12E	CR 54	437
Morris Tract Road	Chaumont Village Line	Brownville Town Line	222
CR 54 (DePaulville Road)	Witt Road	Morris Tract Road	598
CR 54 (DePaulville Road)	Morris Tract Road	Factory Street	654
CR 125	NYS Route 12E	Begin 18 PAVT	448
CR 125	Begin 18 PAVT	Chaumont Village Line	386
Pillar Point Road	NYS Route 12E	Moffett Road	227

[5] AADT is a measure used primarily in transportation planning and transportation engineering. Traditionally, it is the total volume of vehicle traffic of a highway or road for a year divided by 365 days.
[6] https://www.dot.ny.gov/tdv

Community/Residential

The highest amount of development is seen within the waterfront community of the Village of Chaumont (the Village). The Village is located on Chaumont Bay within the Town of Lyme and is part of what is known as the "Golden Crescent" – an area along the lakeshore that runs from Cape Vincent to Sackets Harbor. This small village is characterized by a well-defined downtown area where most commercial uses are along Route 12E, with residential neighborhoods located to the south. Uses within the Village consist of residential (permanent and seasonal), religious, educational, recreational, and commercial. The density of development within the Village is moderate and drops significantly outside the municipal boundary as it quickly transitions to agricultural land. No portion of the proposed Facility is located within the Village.

Outside the Village, development (i.e., residential and commercial) within the Towns of Lyme and Brownville is scarce and generally found to be along roadways. Both Towns contain a significant amount of agricultural and forested land.

Overall, the VSA contains a limited number of residents. Populations are identified below and are sourced from The U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates:

Table 2. Population Data within the Visual Study Area

Municipality	Population	Population Density[7]
Town of Brownville	6,213	105
Town of Clayton	4,969	60
Town of Lyme	2,303	41
Village of Chaumont	827	841

Existing Energy Infrastructure

Infrastructure of varying heights, materials and configurations may be seen within the VSA. These may consist of the following:

[7] Number of residents per square mile.

- Transmission structures vary from single wooden poles (as seen along roadsides) carrying electricity to local customers to large structures carrying high voltage lines. Adjacent to the Facility is a National Grid Lyme to Lyme Tap 115kV line utilizing wooden H-frame structures of various heights. The associated substation is approximately 1.4 acres in size and located along County Route 179 (1.65 miles west of the proposed substation).

- Convergent Energy + Power Project – This is a 23MW solar development located on approximately 139 acres of a 236.5-acre parcel of land located along County Route 179 (adjacent to the National Grid substation identified above). The project consists of a ground mounted photovoltaic system, battery storage, and needed infrastructure to connect to the existing electrical grid.

Convergent Energy + Power Project from County Route 179.

3.0 DISTANCE ZONES

Three zones, the distance between the Facility fence line and observer, are identified as: foreground, middleground, and background. These distance zones are based on definitions contained in *The U.S. Forest Service Landscape Aesthetics – A Handbook for Scenery Management* (U.S. Forest Service Handbook) (1995). Although the effects of distance are dependent on the characteristics of the landscape (topography, vegetation, etc.), each zone provides guidance to the level of visual detail and acuity of objects. Distance zones have been reasonably modified from the U.S. Forest Service Handbook to accommodate the required VSA, as well as considerations such as the size (height) of the Facility, and the level of anticipated visibility.

As it is expected that far-reaching vistas will be limited to a low-profile project, the following Distance Zones have been identified:

- Foreground (up to 0.5 miles from the viewer): This is the closest distance at which details, such as textures and color, of the landscape and the solar panels can be seen. Individual landscape forms are typically dominant, and individual panel strings and racking system detail may be seen. Scale of the proposed Facility when compared to the immediately surrounding landscape is at its highest.

  Due to the low-profile of the proposed facility, as part of the Foreground, locations immediately adjacent (within 300 feet) to the Facility may be considered to be within the Immediate Foreground distance zone. This is to be considered as part of the overall Foreground distance zone, but as described by the U.S. Forest Services, this is where the detail and contrast may be at its highest.

- Middleground (0.5 to 2 miles from the viewer): At this distance, individual tree forms and buildings can still be distinguished. However, the middleground is defined as the point where the texture and form of individual plants are no longer visibly acute in the landscape. In some areas, atmospheric conditions can reduce visibility and shorten the distance normally covered by each zone. Solar panels lose their level of detail and are seen as a contiguous mass of form and/or color. Contrasts of color and texture lessen as colors take on a bluish hue and details begin to merge.

- Background (2 to 5 miles from the viewer to the horizon): At the extent of background distances, texture disappears, and color flattens but large light and dark patterns of vegetation or open land due to shape or color are distinguishable and ridgelines and horizon lines are the dominant visual characteristics. Landscapes are simplified and are viewed in groups or patterns. Solar panels can be detected as a distant form and color change but are not as discernible.

Although the VSA is limited to two miles, the description of the Background distance zone is still provided above, as it is important to recognize the progression of visual acuity that occurs from the Foreground to Background.

4.0 LANDSCAPE SIMILARITY ZONES

Landscape Similarity Zones (LSZs) are areas of similar landscape and character based on patterns of landform, vegetation, water resources, land use, and user activity. These zones provide additional context for evaluating viewer circumstances where relationships between viewer groups and visual experience can be made. For example, a viewer's experience will be different in a forested area compared to open water. Viewer groups, as well as potential viewer frequency and duration of view can also be related to the specific LSZ they are within.

GIS land cover classification datasets from the 2016 United States Geological Survey (USGS) National Land Cover Dataset (NLCD) were used for an initial establishment of LSZs as they provide distinct and usable landscape categories. These NLCD land cover groupings were then refined based on aerial photo interpretation and general field review. This effort resulted in the definition of five LSZs as depicted in Table 3 and on Figure 1, Attachment 2, and include the following:

Agricultural Landscape Similarity Zone – This LSZ is characteristic of open land, including that which is used for row crops, hay or pasture, or left fallow. These lands are relatively flat to rolling and may contain small, wooded areas, and hedgerows. Development would be limited and sparsely located; single family homes and farmsteads (including barns and silos) make up the majority of built structures and are likely found along the County Routes or local roads that bisect this LSZ. Where available, structures, hedgerows, vegetated lined waterways/ravines, and woodlots can screen views, whether short or long distant, toward to the proposed Facility.

Agricultural Land along Case Road.

Residential dwellings in close proximity (e.g., along Case Road and Weaver Road) to the Facility may have a higher likelihood of receiving open views, long in duration, of the Facility. This will be especially true should there be no roadside vegetation providing some level of screening. Views from those using the local roadways may be partial or open but will be fleeting and visibility will be dependent on the road.

Agricultural lands are most often privately owned and while they may be abundant in a particular area the numbers of the viewing public is likely low. In addition, this LSZ includes the Bay Breeze Golf Links as it has a similar appearance to the agricultural fields.

Forested Landscape Similarity Zone – This LSZ includes mature deciduous and coniferous woodlands in uplands, wetlands, or other undevelopable parcels of land. Forested areas are typically large tracts of land likely owned by private entities or the State. Those forested lands owned by public entities (e.g., New York State Department of Environmental Conservation [NYSDEC]) may offer the public with recreational activities such as hunting, nature viewing, hiking, camping, etc. Development will be limited and likely found along roadways.

Views may be very limited as opportunities for outward viewing of the surrounding landscape will be minimized by the tree canopy or large tree groupings. It should be noted that views through the vegetation may be available during leaf-off conditions but is likely to be confined to areas along the edge of this LSZ.

Village Landscape Similarity Zone – This LSZ solely consists of the Village of Chaumont, which is the primary residential and commercial center in the VSA. The Village is characterized by built structures and streets. The structures and vegetation (e.g., street trees, site landscaping) that are seen within the community generally results in views that are short in distance. Views (open or partially screened) of the surrounding landscape are more readily available the closer one gets to the municipal boundary; this may occur through foreground vegetation or as a result fewer structures. An open view to the Chaumont Bay is seen where Route 12E crosses the Chaumont River.

Transportation Corridor Landscape Similarity Zone – This LSZ includes NYS Route 12E (and the immediately adjacent land), which is the major thoroughfare through the western portion of the VSA. As the most heavily traveled road, it will receive a high number of transient users experiencing a variety of views. In addition to a higher rate of speed (45 miles per hour outside the Village of Chaumont), those using Route 12E will encounter an increased number of vehicles, thus the focus of the driver will be on navigating the roadway. The view along the corridor will include pavement, wide shoulders, vehicles, and roadside structures and vegetation (where available). There will also be views of the surrounding landscape, however it will be fleeting or short in duration.

Village of Chaumont Downtown from NYS Route 12E / Great Lakes Seaway Trail (top photo) and Residential Area along Washington Street (bottom photo).

New York State Route 12E.

Open Water Landscape Similarity Zone – This LSZ includes water bodies located within the western portion of the VSA - namely the Chaumont, Guffin and Sawmill Bays (together referred to as the Chaumont Bay). Large water bodies are by nature very open and may afford views to the nearby landscape. A variety of recreational opportunities may be found that includes boating and (ice) fishing; the potential duration of a particular view may be contingent on the user activity. For instance, those fishing may experience views for a longer duration of time versus those enjoying a boat ride.

Chaumont Bay from the NYS Route 12E / Great Lakes Seaway Trail.

View's inland is limited by waterfront vegetation, development, and topography. Outside the shoreline development contributed by that within the Village of Chaumont, residential structures (single-family residences, and seasonal cottages and camps) of varying scale and density are also visible. Generally, all of the shoreline structures take advantage of water views.

This LSZ also contains the Chaumont River. Although it does not appear to offer much in the way of public access or recreational opportunities, it is a notable water feature. Should an individual be on the River, they are not likely susceptible to long distant views to the adjacent landscape as a result of the adjacent vegetation and topographic changes; rivers are located at low valley elevations where higher topography on either side could block views to the nearby landscape. Views would likely be up and down river.

Table 3 summarizes the percentage of LSZs in the VSA.

Table 3. Percentage of Landscape Similarity Zones within 2-Mile Visual Study Area

	Foreground Distance Zone		Middleground Distance Zone			
LSZ	**Square Miles**	**Percent of LSZ within the VSA**	**Square Miles**	**Percent of LSZ within the VSA**	**Total Square Miles of LSZ**	**Total Percent of LSZ in VSA**
Agricultural	5.55	17.0%	13.70	41.95%	19.25	58.94%
Forested	1.92	5.88%	9.33	28.57%	11.25	34.44%
Village	0.09	0.28%	0.17	0.52%	0.26	0.80%
Transportation Corridor	0.06	0.18%	0.19	0.58%	0.26	0.80%
Open Water	0.02	0.06%	1.63	4.99%	1.64	5.02%
Totals	**7.64**	**23.40%**	**25.02**	**76.61%**	**32.66**	**100.00%**

Based on the above Table, it is clearly identified that the Agricultural and Forested LSZ's are co-dominant and occupy 58.9% and 34.4% of the land within the VSA, respectively. In addition, they also occur in similar percentages to each other throughout each of the two Zone's. In comparison the Village and Transportation Corridor each represents 0.8% of the land.

5.0 SCENIC RESOURCE INVENTORY

An inventory of publicly available and accessible local, county, state, and federally recognized visual resources were identified within a two-mile VSA. These resources were collected using various sources including local and state websites, town, county and agency reports, mapping, GIS data, and site visits.

In identifying appropriate resources, TRC utilized the following categories that are outlined in the regulations:

1) Landmark landscapes;
2) Wild, scenic or recreational rivers administered by NYSDEC, APA or Department of the Interior;
3) Forest preserve lands;
4) Scenic vistas specifically identified in the Adirondack Park State Land Master Plan;
5) Conservation easement lands;
6) Scenic byways designated by the federal or state governments;
7) Scenic districts and scenic roads, designated by the Commissioner of Environmental Conservation;
8) Scenic Areas of Statewide Significance;
9) State parks;
10) Historic sites listed or eligible on the National/State Registers of Historic Places[8];
11) Areas covered by scenic easements, public parks or recreation areas;
12) Locally designated historic or scenic districts and scenic overlooks; and
13) High-use public areas.

[8] TRC was provided listed and eligible historic sites (referred to as "sites") by the SHPO; these sites were identified by SHPO and the Register of Historic Places (NRHP). The status of Freeman Cemetery is yet to be determined as a State and/or National historic resource. For additional information relating to the cultural and historic resources, please refer to Exhibit 9 of the Application as well as the Historic Architectural Resources Survey and Effects Report (included as Appendix 9-3) for greater detail on the cultural resources investigations and results.

As part of this effort, the Comprehensive Land Use Plans for the Village of Chaumont (2010) and Town of Lyme (2010) were reviewed to specifically identify potential sensitive areas or applicable scenic (aesthetic) resources. Based on the review of these documents, a common theme presented itself in that select local roads (NYS Route 12E, Morris Tract Road), water views (particularly of Chaumont Bay), and open views of the countryside were of importance. However, specific views of significance are not readily identified in the existing landscape to the casual observer (maps contained in the comprehensive plans gave general locations), and as noted, protection of such vistas must be balanced with development (employment opportunities, revenue, etc.) and environmental needs.

In addition to the research undertaken by TRC, an information request was sent out to representative from the Towns of Brownville and Lyme, Jefferson County, the NYS State Historic Preservation Office (SHPO), and the Office of Renewable Energy Siting (ORES). These agencies were contacted via email on April 26, 2021 and/or May 5, 2021 and provided a preliminary visual report that included the extent and findings of the preliminary visibility study, at that point in time. As part of this outreach, it offered an opportunity for the agencies to append additional visual resources of concern and suggest those locations of interest for the development of simulations. Two of the agencies provided feedback, the Town of Lyme on May 13, 2021, and ORES on May 21, 2021. In addition, the Applicant and TRC meet with representatives from the Town of Lyme on May 24, 2021 and subsequent correspondence occurred on June 2, 2021 and June 30, 2021. Additional resources and areas of concern were provided and are included in Table 4.

5.1 Scenic Resource Inventory

Table 4 lists 44 resources that adhere to the categories identified above and have been confirmed through feedback by the Town of Lyme. The location of each resource is numerically referenced on the below table and shown on Figures 2 and 3 in Attachment 2.

Table 4. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
Scenic Byways						
1	NYS Route 12E / Great Lakes Seaway Trail[3]	Towns of Brownville and Lyme, Village of Chaumont	State	0.15 mi (792 ft)	T	Yes
Historic Sites						
	Historic Districts – Listed[4]					
2	Chaumont Historic District	Town of Lyme	State	0.5	V	No

Table 4. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
	(USN 04548.000116)			(2,640 ft)		
	Historic Sites – Listed (outside of the listed district)					
3	Chaumont House (USN 04548.000003)	Village of Chaumont	State	0.87 (4,594 ft)	V	No
4	George House (USN 04548.000037)	Village of Chaumont	State	0.64 (3,379 ft)	V	No
5	George Brothers Building (USN 04548.000038)	Village of Chaumont	State	0.4 (2,112 ft)	V	No
6	Grange Hall and Dairymen's League (USN 04548.000039)	Village of Chaumont	State	0.37 (1,954 ft)	V	No
7	Leray-Clark House/Evans-Gaige/Dillenback (USN 04548.000001)	Village of Chaumont	State	0.76 (4,013 ft)	V	No
8	Cedar Grove Cemetery (NR90PR04351)	Village of Chaumont	State	0.60 (3,168 ft)	V	No
	Historic Sites - Eligible					
9	27375 Washington St. (USN 04548.000071)	Village of Chaumont	State	0.66 (3,485 ft)	A	No
10	St. Paul's ME Church (USN 04548.000034)	Village of Chaumont	State	0.59 (3,115 ft)	V	No
11	11792 NYS Route 12E (USN 04548.000100)	Village of Chaumont	State	0.73 (3,854 ft)	V	No
12	27587 Water St. (USN 04548.000124)	Village of Chaumont	State	0.93 (4,910 ft)	V	No
13	27605 Water St. (USN 04548.000123)	Village of Chaumont	State	0.91 (4,805 ft)	V	No
14	Barnes Bay Cemetery (USN 04548.000123)	Village of Chaumont	State	1.17 (6,178 ft)	A	No
15	27707 Water St. (USN 04513.000122)	Town of Lyme	State	0.85 (4,488 ft)	V	No
16	New Cedar Grove Cemetery (USN 04548.000196)	Village of Chaumont	State	1.99 (10,057 ft)	A	No
17	Freeman Cemetery	Town of Brownville	Federal / State	0.07 (370 ft)	A	No

Table 4. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
44	27490 Washington Street (USN 04548.000119)	Village of Chaumont	State	0.62 (3,274 ft)	V	No
Public Parks or Recreation Areas						
18	Veterans Memorial Public Park (under construction)	Village of Chaumont	Local	0.34 (1,795 ft)	A	No
19	Lyme Central School and Playing Fields	Village of Chaumont	Local	0.78 (4,118 ft)	V	No
20	NYS Chaumont Boat Launch	Village of Chaumont	State	1.38 (7,286 ft)	W	No
21	Village of Chaumont Public Beach	Village of Chaumont	Local	1.24 (6,547 ft)	A	No
22	Local Park	Village of Chaumont	Local	1.16 (6,125 ft)	V	No
23	G. Spence Donaldson Memorial Field	Town of Lyme	Local	0.04 (211 ft)	A	Yes
24	Walt Putnam Memorial Field	Town of Lyme	Local	1.83 (9,662 ft)	A	No
25	Memorial Park	Village of Chaumont	Local	0.42 (2,218 ft)	V	No
26	Chaumont Barrens Preserve	Towns of Clayton and Lyme	Local	0.4 (2,112 ft)	F	No
27	Limerick Cedars Preserve	Town of Brownville	Local	1.1 (5,808 ft)	F	No
28	Snowmobile Trails (trail C5J)	Towns of Brownville, Clayton and Lyme, Village of Chaumont	State	0.0	All	Yes
32	Bay Breeze Golf Links	Town of Lyme	Local	1.68 (8,870 ft)	A	No
38	Lyme Lane	Village of Chaumont	Local	0.78 (4,118 ft)	A	No
39	Chaumont Bay	Town of Lyme	Local	1.54 (8,131 ft)	W	No
High-Use Public Areas						

Table 4. Inventory of Aesthetic Resources within the Two-Mile Visual Study Area

Map ID	Resource Name	Municipality	Resource Type (Federal, State, or Local)	Distance to Facility Site (miles)	LSZ[1]	Potential Visibility [2]
29	Village of Chaumont	Village of Chaumont	Local	0.00	V	Yes
30	Bearup Marine / Crescent Yacht Club	Village of Chaumont	Local	0.69 (3,643 ft)	A	No
31	Chaumont Bay Marina	Village of Chaumont	Local	0.99 (5,227 ft)	V	No
33	Chaumont River RV Park & Campground	Town of Lyme	Local	1.13 (5,966 ft)	F	No
34	Sportsman Hideaway Campground	Town of Lyme	Local	1.86 (9,821 ft)	F	No
35	Chaumont Yacht Club	Village of Chaumont	Local	0.44 (2,323 ft)	A	No
36	Lyme Rod and Gun Club	Town of Lyme	Local	0.59 (3,115 ft)	A	Yes
37	Chez Heron[5]	Village of Chaumont	Local	0.48 (2,534 ft)	V	No
Other						
40	Independence Point	Town of Lyme	Local	1.37 (7,234 ft)	A	No
41	Morris Tract Road[6]	Village of Chaumont, Towns of Lyme, Brownville, and Clayton	Local	0.00	A	Yes
42	County Route125	Village of Chaumont and Town of Lyme	Local	0.22 (1,162 ft)	A	Yes
43	Hart Road / Park Drive	Village of Chaumont, Town of Lyme	Local	0.77 (4,065 ft)	F	No

[1] *A = Agricultural, F = Forested, V = Village, T = Transportation Corridor, W = Open Water*

[2] *Expected visibility is based on LiDAR-based viewshed analysis results that include topography, trees, and buildings per §900-2.9 (b)(1), as it is the most reasonable and accurate depiction of landscape conditions.*

[3] *Route 12E is also a designated bikeway. Similarly, to other roadways it will cross various LSZ's.*

[4] *The Chaumont Historic District is comprised of, and represents, a grouping of historic sites. These sites include, but are not limited to the Copley House, and the McPhearson House. Both of which were identified by the Town of Lyme, as well as the Chez Heron facility (its appearance is that of a limestone castle), and the Lyme Rod and Gun Club.*

[5] *The Chez Huron is found within the Historic Copley House, which is located and represented within the Chaumont Historic District. The Chez Huron, like the Lyme Rod and Gun Club, is highlighted separately as it was identified by the Town of Lyme as of local importance.*

[6] *Morris Tract Road, and County Route 125 and the Hart Road/Park Drive corridors are local roads of scenic quality based on the Village of Chaumont and Town of Lyme Comprehensive Land Use Plans, respectively.*

Of those visual resources identified within the VSA, seven will have the potential to view the proposed Facility and are further discussed below in Section 9.1.3. These include:

- NYS Route 12E / Great Lakes Seaway Trail;
- The C5J Snowmobile Trail;
- The G. Spence Donaldson Memorial Field;
- Lyme Road & Gun Club;
- Village of Chaumont;
- Morris Tract Road; and
- County Route 125.

Based on Table 4, only two of the resources with visibility are to be considered as a statewide concern. Resources that were found as not having visibility based on the viewshed mapping were removed from further analysis.

Given that the character of the VSA is mostly rural in nature, it is important to recognize that visibility of the Facility may be possible from locations that do not meet the threshold of aesthetic resources and are therefore not represented in Table 4. Additional locations of visibility have been identified along roadways adjacent to the Facility. These representative roadways[9] may be of interest to the local residents and include Case Road, County Route 59, and Weaver Road.

6.0 VIEWSHED ANALYSIS, LINE-OF-SIGHT PROFILES, AND PHOTOGRAPHIC SIMULATION – METHODOLOGY

6.1 Viewshed Analysis

Typically, the first step in identifying the possibility for Facility visibility within the identified VSA is to complete viewshed maps[10]. A viewshed analysis is a computerized GIS analytical technique that illustrates the predicted visibility expected for a project and allows one to determine if and where a project can geographically be seen. The results of the viewshed analysis can be combined with other sensitive location information such as historic places, national forests, or state parks, etc. in order to understand potential Facility visibility at sensitive receptors.

[9] All roadways are not included, select roadways were identified in order to provide representation.

[10] Sometimes this has been referenced as a "zone of visual influence" or "ZVI".

6.1.1 Methodology

In completing the necessary viewsheds, Light Detection and Ranging (LiDAR) point cloud data from the NYSGPO Jefferson Black River 2010, and FEMA Great Lakes Area 2014 LiDAR datasets and obtained from the New York State GIS Program website was used. 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.

Control points, at a height of eight feet eleven inches (representing the panel height), were placed in a 200-foot grid pattern throughout the area where the panels are being proposed. For each of the specified control points, GIS software (ESRI Spatial and 3D Analyst) identified where there would be an unobstructed line of site, or view, between that point and an observer at 6 feet in height. This process was run twice, once for topography only, and once to include vegetation and structures; all of which are contained in the LiDAR dataset. The final resulting output identified those areas from which viewers would potentially see all or some part of the proposed solar panels.

1. Two viewshed analyses were completed in order to account for predicted visibility of the solar panels within the VSA including:

    - Screened Viewshed: This is the primary visibility analysis performed for this VIA, as it incorporates screening caused by topography, vegetation, and the buildings. The results provide the reader of this VIA with the most reasonable and realistic depiction of Facility visibility.
    - Topography-Only Viewshed: As part of the viewshed process, a topography-only (also known as “bare earth”) viewshed was completed. This analysis is not recognized as being a realistic interpretation of the existing landscape and potential Facility visibility, as it does not take into account structures and vegetation. Despite this limitation, it can be a useful tool in identifying how much of the Facility is screened solely by terrain. In addition, it should be recognized that even during leaf-off conditions, screening will still occur from evergreen and deciduous trees (sight lines to objects may be fully or partially screened). This is not to ignore that there may be visibility through bare-branched trees; specifically, when in close proximity to the Facility and there is sparsely located vegetation between the two.

2. One additional viewshed analysis was completed for the collection substation.

    - Collection Substation: A screened viewshed was produced using the same methodology as that of the solar panels. This analysis accounted for the tallest components of the substation including: a 63-foot one inch interconnection takeoff (together with lightning masts mounted to the top of the structure), one 45-foot-tall lightening mast, and a three pole 45-foot-tall dead-end structure that is located on the north side of the existing

transmission line. It is expected that these taller elements are suitable in representing the shorter components contained in the substation.

6.1.2 Assumptions and Limitations of the Viewshed Analysis

The viewshed analysis identifies cells that contain elevation information and computes the differences along the terrain surface between an observer and a control point (e.g., a solar panel). Therefore, certain factors in the interpretation of results need to be considered:

1. The analysis, because of its computerized aspect, assumes that the observer has perfect vision at all distances. Therefore, it is important to be cognizant of the fact that there may be limitations of human vision at greater distances; atmospheric/meteorological conditions, such as haze or other inclement weather conditions, may impair visibility. Additionally, an object will appear smaller and less detailed with increased distance, thus having less visual impact in most instances.

2. Because an area, or specific point, may be identified as having visibility, it is important to understand that the entire Facility will not be seen. To assist the reader in understanding this, the viewshed map was completed using a color gradient - the yellow colored areas represents more visibility, while the purple color represents less visibility.

3. The viewshed map does not illustrate how much of each panel is visible (panel top versus the entire panel). For example, visibility may only be a result of glimpsing a portion of the Facility over treetops or between gaps of trees.

4. A viewer would not see the panels if standing amongst trees in forested areas as the tree canopy would preclude outward-looking views.

6.2 Line-of-Sight Profiles

Three line-of-sight (LOS) profiles were completed for the collection substation from Case Road, the Snowmobile Trail, and the Chaumont Historic District/NYS Route 12E. These profiles can provide the viewer with information that assists in examining the reasons why Facility components may have impeded views or no views. The underlying topography of a sight line, in addition to vegetative obstructions can be produced, as well as an estimated amount of visibility of an object if it is visible.

Elevation data obtained for the Facility was prepared by Thew Associates PLLC, based on an instrument survey, and supplemented with publicly available LiDAR/Digital Elevation Models from the U.S. Geological Survey (USGS). Autodesk Civil 3D 2018 was used to produce the linear elevation profiles sampled across select sight lines for bare earth topography and for vegetation. Section 9.2.2 provides a discussion of results and Attachment 5 contains the profiles.

6.3 Photographic Simulations

Site visits were made to obtain photos during leaf-on and leaf-off conditions on September 18, 2020, March 19, 2021, and May 24, 2021. Except for one location, the photos selected for simulations were collected during leaf-off conditions to depict worst-case scenario. In capturing these images, the photographer attempted to provide the most unobstructed view possible in areas where the screened viewshed map identified potential visibility. A digital SLR full frame Canon EOS 5D Mark II with a 50mm lens setting was used in undertaking this effort.

6.3.1 Simulation Methodology

To create the photographic simulations of the Facility, TRC utilized Autodesk Civil 3D 2020 (CAD) to extract the proposed Facility layout (site plan and grading) that was prepared by TRC Engineering, the design engineers for the Facility. This data was interfaced with Autodesk 3DS Max 2020 (MAX) visualization software to construct a three-dimensional (3D) model of the proposed Facility at the precise, coordinate (x, y, z) location at which the Facility is physically proposed.

For the purposes of this VIA, the proposed panels were built as bifacial single-portrait trackers with a height of eight feet-eleven inches (8.9 feet) above ground surface with the axis oriented east-west.

To appropriately position the Facility on terrain or the ground surface, a 3D topographic surface was generated in GIS from publicly available LiDAR data, noted in Section 6.1.1, and a final 3D surface was compiled to incorporate proposed grading. Facility components were then assigned to the ground surface in MAX with elevational attributes, respectively.

The 3D model was further developed to position a 3D camera at coordinates of each simulated viewpoint location, extracted from GPS data recorded during the site visit. A photograph is then overlayed into the 3D camera's perspective and a 3D environment is constructed from existing conditions using LiDAR data. Each 3D camera is then adjusted to match the identical settings of the DSLR camera used during the field effort, along with minor adjustments to the camera's target and roll, which results in the 3D environment mirroring the photograph's environment. At this point, the recorded date and time of the photograph is entered into a physical daylight system, which calculates and renders a CGI (Computer-Generated Image) with accurate placement of shadows, materials and highlights casted from the facility of true lighting conditions seen in the photograph.

The CGI is superimposed within the photograph using Adobe Photoshop. Any final editing is completed to demonstrate any proposed actions, such as removal of vegetation, in addition to the removal of Facility components that fall behind existing features (e.g., removing the proposed Facility that falls behind structures, vegetation, topography, etc.).

For the simulations that may contain mitigation, a CAD version of the proposed landscaping plan obtained directly from the TRC Landscape Architect was imported into the MAX modeling

environment where, subsequently, each proposed tree and shrub species was then translated and built into the 3D model, growth heights are assigned and placed in with the Facility along the fence line according to the landscape plan.

6.3.2 Viewpoint Selection for Photographic Simulations

Integrating the results of the resource inventory, the competed site visits, and the viewshed analysis assisted in identifying candidate locations for the completion photo simulations. In addition, the LSZs, lighting conditions, view angles, and distance zones were also considered. It is important to note that not all locations with visibility is to be simulated, rather representative locations need to be identified.

Potential visibility, as noted by the viewshed results in Figures 2 and 3 of Attachment 2, guided the candidate locations for simulations viewpoints[11]. The screened viewshed shows that the most prominent visibility of the Facility is within the Foreground distance zone, with some minor predicted visibility in the Middleground. As visibility is predominantly within close proximity to the Facility, the majority of the representative locations are found along local roadways (e.g., Morris Tract, Weaver and Case Roads), as well as NYS Route 12E and the G. Spence Donaldson Memorial Field.

As previously identified, TRC reached out to various agencies in order to provide an opportunity to suggest additional and reasonable candidate locations for the completion of photographic simulations. Based on this effort, a series of vantage points were identified for consideration. As a result of all the available data and correspondence with agencies, a total of 12 viewpoint locations were chosen for the development of simulations.

Correspondence is included in Attachment 6.

7.0 ADDITIONAL APPLICABLE VISUAL CONCEPTS TO CONSIDER: VIEWER CHARACTERISTICS

Visual sensitivity is dependent upon user or viewer attitudes, the amount of use, and the types of activities in which people are engaged when viewing an object. Overall, a higher degree of visual sensitivity is correlated with areas where people live, and with people who are engaged in certain outdoor recreational activities or participating in scenic driving. Conversely, areas of industrial or commercial use are considered to have low to moderate visual sensitivity because the activities conducted are not significantly affected by the quality of the environment.

The following concepts are applied when evaluating the visual landscape and assessing the importance of a viewpoint location if it falls in an area of visibility.

[11] Only those that are publicly accessible are to be considered.

Viewer group – The type of viewers will vary within the VSA and will view the landscape differently. Viewer groups include:

- *Local Constituency*: People living in the local area and/or surrounding communities who interpret the significance of where they live and interact with others. These people may include local residents, workers, travelers, and members of groups to which the local area is important in different ways. These individuals, apart from local travelers, may have a longer duration of views.

- *Commuter Constituency*: People who use or are generally restricted to travel corridors (i.e., NYS Route 12E) that are destination oriented, or traveling through the VSA. These people generally have transient, short duration views.

- *Visitor or Recreational Constituency*: Individuals who visit the area to experience its natural appearance, cultural landscape qualities, or recreational opportunities. Visitors may be of local, regional, or national origin. Duration of views may be contingent on the activity.

Context of viewer – The viewer group and associated viewer sensitivity are distinguished among viewers in residential, recreational/open space, tourist, commercial establishments, and workplace areas, with the first two having relative high sensitivity.

Number of viewers – The number of viewers is established by the amount of people estimated to be exposed to the view. In comparing viewing locations to each other, one can consider if the area is a high public use area or if it is a location that is less frequently visited or more inaccessible where the public is not expected to be present (such as marshes or swamps).

Duration of view – Duration of view is the amount of time a viewer would actually be looking at a particular site. Use areas are locations that receive concentrated public-use viewing with views of long duration such as residential back yards. Recreational long duration views include picnic areas, favorite fishing spots, campsites, or day use in smaller local parks. Comparatively, automobile drivers and snowmobilers will likely encounter a shorter, more rapid transient experience as a person transitions from one linear segment to the next but will encounter more visually varied experiences.

Viewer activities – Activities can either encourage a viewer to observe the surrounding area more closely (hiking) or discourage close observation (commuting in traffic).

Atmospheric conditions – Air pollution, natural haze and precipitation all affect visibility and should be considered. In addition, light conditions should be considered as the direction and amount of light can affect intensity, reflection, shadow, form, and texture.

Assessing contrast – In assessing the contrast of the Facility within the context of the existing landscape, the Bureau of Land Management (BLM) describes such compatibility in terms of form,

line, color, texture, and size or scale. It should be noted that all of these are affected by such things as atmospheric conditions and distance. For example, the color of a proposed project may appear similar to its surroundings during hazy weather conditions, or the size of a project may not appear as dominant within the landscape the further away a viewer may be positioned.

- Form – Contrasts result when a proposed project appears to change or interrupt the shape and mass of existing landforms. The magnitude of change is dependent on how dissimilar the introduced forms are to those already seen within the landscape.
- Line – Contrasts result from changes in the existing edge types (e.g., hilltop), its interruption, or the introduction of new lines. An undeveloped area at a distance may be mostly horizontal lines comprised of distant ridges or forest treetops as well as forest and field interfaces.
- Color – Contrasts result when new colors are introduced into the landscape that are dissimilar to those that are existing (e.g., green colors of vegetation, or blue colors of the sky).
- Texture – Contrasts are usually the result of comparing the differences in the material, density, and patterns of new elements with its surrounding. Texture and the level of discernible detail decreases with distance. Objects at distance may appear as one homogenous texture or shape.
- Size or Scale – Contrast is directly related to its size and scale as compared to the surroundings in which it is located. A project may appear dominate or subordinate within a landscape.

8.0 VISUAL IMPACT RATING

TRC has developed a visual impact rating form for use in comparing Facility photo simulations as required by Section 94-c. This form is a simplified version of various federal agency visual impact rating systems. It includes concepts and applications sourced from:

- U.S. Bureau of Land Management (BLM), Handbook H-8431: Visual Contrast Rating, January 1986 (USDOI, 1986).
- Visual Resources Assessment Procedure for U.S. Army Corps of Engineers, March 1988 (Smardon, et al., 1988).
- National Park Service Visual Resources Inventory View Importance Rating Guide, 2016 (NPS, 2016c).
- USDA Forest Service, Landscape Aesthetics: A Handbook for Scenery Management. USDA Forest Service Agriculture Handbook No. 701, 1995 (USDA, 1995).

Depending on the Facility location, a variety of VIA guidance and established procedures exist, as noted above; these apply to management of federal lands that fall under a specific agency such as the U.S. Forest Service or Bureau of Land Management. These documents vary in regard to agency specific rating systems or procedures, and often begin with the evaluation of existing conditions such as scenic quality or presence of sensitive resource locations.

TRC has developed this form for efficient and streamlined use with projects that undergo state environmental permitting processes. This methodology has been previously approved and accepted for numerous projects being reviewed through the New York State Article 10 of the Public Service Law for numerous Article 10 projects of similar size. As a basis of the prescribed methodology, it is assumed that visual resource inventories, development of LSZs, viewshed analyses, and photo simulations have already been performed for the Facility according to regulatory requirements or other visual policy. This form was developed to be used as a numerical rating system for selected viewpoint locations subjected to the completion of photo simulations and is meant to accompany the Facility VIA.

For evaluating visual change, there are three parts to the form. Part 1 is the *Visual Contrast Rating,* which compares the Facility's contrasts against compositional visual elements of within the existing view from a selected vantagepoint. This includes contrasts against the existing and natural environment such as vegetation, water, sky, landform, or structures. The higher the rating total the higher the contrast. Part 2 is the *Viewpoint Sensitivity Rating*. This section incorporates the concepts in Section 8.0. It rates the sensitivity of the viewpoint location which inherently considers the importance of the location (if it falls within a visual resource area), viewer groups, duration of view, if it is a high use area, or if there is the presence of water. The higher the rating total, the more sensitive the viewpoint is. Part 3 does not rate change but is an overall *General Scenic Quality of the View* which rates the view of existing conditions only, without the influence of the Facility.

Please refer to Attachment 7 for more comprehensive guidelines on how the contrast ratings were assessed and applied within each category.

The rating scale is as follows:

Rating Scale	
0	None
0.5	
1	Weak
1.5	
2	Moderate
2.5	
3	Strong

Degree of Contrast Criteria

None The element contrast is not visible or perceived.

Weak The element contrast can be seen but does not attract attention.

Moderate The element contrast begins to attract attention and begins to dominate the characteristic landscape.

Strong The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

9.0 VISUAL IMPACT ANALYSIS RESULTS

9.1 Viewshed Results and Discussion

A series of viewshed maps were completed for the solar panels and the collection station. These may be seen in Attachment 2 and are further discussed below.

9.1.1 Viewshed Summary

Screened Viewshed – Solar Panels

The viewshed map and associated analysis illustrates potential screening caused by the existing topography, vegetation, and structures (e.g., residential and commercial) found within the VSA. It shows that Facility visibility is expected to be limited, with most occurring within the Foreground distance zone. To quantify the amount of land with visibility, the analysis identified that only 14.05% of the land will have a possibility of either a full or partial view of the Facility. Of this amount, 30.1% of visibility occurs on properties owned by participating landowners.

As noted in Table 5, and Figures 2 and 3 in Attachment 2, most of the visibility occurs within one-half mile, or the Foreground, of the Facility. This is likely occurring due to the open agricultural land surrounding the Facility, resulting in visibility along adjacent roadways (Case Road, Weaver Road, Morris Tract Road, NYS Route 12E, etc.) and properties (residential or other).

Many outward views beyond the Foreground distance zone are screened by forested areas (including hedgerows) and natural changes in topography. This is evident as the possibility for visibility abruptly drops in the Middleground distance zone where it is anticipated that 2.51% of the land will have views of the Facility – this equates to approximately 0.8 square miles of the VSA. The majority of visibility can be expected within agricultural fields or other types of open land, with a minimal amount seen along roadways such as NYS Route 12E, Guffin Bay Estate Road, Walrath Road, Ransom Road, and Weaver Road.

The Facility has been sited outside the Village of Chaumont, which contains a higher concentration of aesthetic resources and potential viewers, but the low profile of the panels combined with the existing vegetation, structures and landform prevents visibility.

Table 5. Percent Visibility (Screened) of Panels within Each Distance Zone

Distance Zone	Total Area Comprising Distance Zone Square Miles	Visibility Within Distance Zone Square Miles	Percent of Square Miles With Visibility in Each Distance Zone	Percent of Visibility Within the Two Mile VSA
Foreground (0-0.5 Miles)	7.63	3.77	49.41%	**11.54%**
Middleground (0.5-2.0 Miles)	25.03	0.82	3.28%	**2.51%**
Total	**32.66**	**4.59**	**N/A**	**14.05%**

Topography Only – Solar Panels

The viewshed and associated analysis illustrates that 79.24% of the VSA (see Table 6, and Figure 4 in Attachment 2) will have visibility of some portion of the solar panels. While this should not be perceived as a realistic representation of visibility, it is still a useful tool in understanding the influence of the terrain and its screening potentials.

Despite its limitations, it does illustrate that the topography is fairly level within most of the VSA; thus, it is not varied enough to screen views. However, there are areas that are expected to be screened and these generally include: the Chaumont River corridor (including Old Town Springs Road, and portions of the Village of Chaumont and Historic District), lowlands in the vicinity of NYS Route 180, the intersection of Depaulville and Van Alstyne Roads, and within Chaumont Bay in close proximity to the shorelines.

Table 6. Percent Visibility (Topography Only) of Panels within Each Distance Zone

Distance Zone	Total Area Comprising Distance Zone Square Miles	Visibility Within Distance Zone Square Miles	Percent of Square Miles With Visibility in Each Distance Zone	Percent of Visibility Within the Two Mile VSA
Foreground (0-0.5 Miles)	7.63	7.50	98.30%	**22.96%**
Middleground (0.5-2.0 Miles)	25.03	18.38	73.43%	**56.28%**

Table 6. Percent Visibility (Topography Only) of Panels within Each Distance Zone

Distance Zone	Total Area Comprising Distance Zone Square Miles	Visibility Within Distance Zone Square Miles	Percent of Square Miles With Visibility in Each Distance Zone	Percent of Visibility Within the Two Mile VSA
Total	**32.66**	**25.88**	**N/A**	**79.24%**

9.1.2 Visibility of the Solar Panels within the Identified Landscape Similarity Zones

The extent of each Landscape Similarity Zone within the VSA is summarized in Table 7 and Figure 1 in Attachment 2. The Table also identifies the percentages of visibility as it occurs within each LSZ and is then further discussed below.

Table 7. Percent Visibility of Panels within Landscape Similarity Zones Within the Visual Study Area

Landscape Similarity Zone	Total LSZ Sq Miles Within the Two Mile VSA	LSZ Sq Miles of Visibility	Percent of Visibility within Each LSZ, Based on the Screened Viewshed	Percent Visibility within the Two Mile VSA
Agricultural	19.25	4.30	22.34%	**13.17%**
Forested	11.25	0.21	1.87%	**0.64%**
Village	0.26	0.004	1.35%	**0.021%**
Transportation Corridor	0.26	0.06	23.08%	**0.19%**
Water	1.64	0.01	0.67%	**0.03%**
Total	**32.66**	**4.58**	**N/A**	**14.05%**

Using the Table above, one can begin to distinguish, or make assumptions about which viewer types may experience visibility of the Facility. For example, those within the Village and Water LSZ's will essentially have no views of the Facility. Therefore, these individuals (residents, recreationalists, etc.) are not anticipated to be affected by the Facility. The Forested and

Transportation Corridor LSZ's will also have limited visibility within 0.64% and 0.19% of the VSA, respectively.

The highest percentage, 13.17% of the VSA, with possible visibility is within the Agricultural LSZ. Where it is anticipated that a relatively low number of viewers (residents and commuters) will be affected by or have visibility of the Facility. The overall small number of potential viewers is supported by the identified population found in Table 2[12], as well as the average daily traffic counts found Table 1. In addition, this LSZ predominantly consists of land being cultivated for crops, hay, or pasture, therefore much of this farmland is infrequently visited and not accessible to the public[13]. However, residents in this LSZ may have long term visibility if they live adjacent to the Facility. In this case, should there be sensitivity, it is anticipated that it may lessen over time due to continual exposure.

The LSZ with the highest number of potential viewers appears to be the Transportation Corridor LSZ. Although it only accounts for a small portion of the VSA (0.8%), it does accommodate upwards of 5,425 vehicles a day. This LSZ coincides with NYS Route 12E and it should be noted that users of the corridor (commuters, travelers, and recreationalists) will only have a potential of view the Facility between the Village of Chaumont and Town of Brownville municipal boundaries. In addition, there are many instances where users may not comprehend the visibility of the Facility due to road speed, orientation, and concentration of navigating the corridor.

9.1.3 Visibility of the Solar Panels on Identified Visual Resources

Aesthetic Resource Inventory

The screened viewshed indicates that the only resources listed in Table 4, per the guidelines, which may have visibility of the Facility include:

- NYS Route 12E / Great Lakes Seaway Trail;
- The C5J Snowmobile Trail;
- The G. Spence Donaldson Memorial Field;
- Lyme Road & Gun Club;
- Village of Chaumont;
- Morris Tract Road; and
- County Route 125.

A further description of these resources and potential visibility is found below:

[12] Only a portion of the identified population within each Town may be found within the VSA.
[13] The land belongs to private individuals who may not access parts of their properties at all times.

NYS Route 12E / Great Lakes Seaway Trail – The Great Lakes Seaway Trail (the Seaway Trail) coincides with NYS Route 12E and bisects the western portion of the VSA in a north-south direction. In addition, this corridor is also designated as a bikeway making it suitable for vehicular users and cyclists. The Seaway Trail is a 518-mile scenic route paralleling Lake Erie, the Niagara River, Lake Ontario, and the St. Lawrence River connecting the Ohio/Pennsylvania (PA) State line (west of Erie, PA) to the U.S./Canadian border at Massena, New York. The Seaway Trail is noted as one of "America's Byways"[14] and is known for its unique landscape, scenic coastline, and its historical significance.

This resource, to be considered as a statewide concern, is located 0.15 miles from the proposed Facility Site[15]. It is anticipated that varying visibility[16] will occur along a section of the roadway, specifically between the southern Village of Chaumont municipal boundary and just east of Moffat Road. Intermittent views at the fringe of the visibility will begin to be steadier as the traveler is perpendicular to the Facility. However, there are many factors where users may not comprehend, or experience reduced visibility of the Facility due to road speed, orientation, and concentration of navigating the corridor.

Snowmobile Trail – The C5J trail, which is part of the NYS Snowmobile Association, bisects the VSA and Facility Site. This seasonal trail connects the Village of Chaumont to the Villages of Cape Vincent and Alexandria Bay by using public/private land, short segments of roadways (NYS Route 12E and Morris Tract Road), and the existing National Grid 115kV transmission line. The trail is maintained by the Thousand Islands Snowmobile Club and may receive funds from the State in any given year.

The snowmobile trail, which can be considered as a resource of statewide concern, is located adjacent to the proposed Facility Site. It is anticipated that views will be transient in nature with varying visibility occurring between Morris Tract Road and just west of Weaver Road. Intermittent views may occur at the fringe of the visibility but is likely to be more open and direct within the Facility site as the Trail runs parallel and in close proximity to the Facility. Towards the west end of the Facility, a segment of the Trail will be displaced, thus needing to be re-routed.

G. Spence Donaldson Memorial Field – The Field, located in the Town of Lyme, offers limited recreational opportunities as it has one softball field. There is currently minimal obstruction (i.e., vegetation and buildings) between the user and Facility, thus resulting in open and direct views. Visibility of the Facility may be reduced, or a lack of attention given to it, as a result of participating in an event (playing and watching), as well as the time of day. Should the game be played after sunset, visibility of the field hosting the panels will be reduced. It is important to note that the field is only being used sporadically during the season of play.

[14] U.S. Department of Transportation

[15] Distances are measured from the closest points, regardless of visibility. Measurements are from the resource to the boundary of the Facility Site

[16] Varying visibility may contain open or filtered views, or the number of visible panels could differ.

This local resource is located 211 feet from the proposed Facility Site. It is anticipated visibility will occur throughout the Property. With minimal obstruction it is anticipated that there will be open and direct views to the northwest set of panels.

Lyme Rod and Gun Club – The Club, located in the Town of Lyme, offers limited opportunities for those seeking such a facility. The Club hosts weekly competitions as part of the Norther Tier Trap League during the months of April through September. While there are limited times available to use the facility, it does offer the opportunity to host events.

This local resource is located 0.59 miles from the proposed Facility Site. It is anticipated that most events will occur during evening hours and facing away from the Facility. Likely the greatest chance to view the Facility is while exiting the Club parking lot. It is also anticipated that should the field east of County Route 125 (Guffins Bay Estate Road) go fallow or be used for crops, visibility of the Facility will be further reduced or screened during the growing season.

Village of Chaumont –The Village, located in the Town of Lyme, as previously identified contains the highest density of development and population. This small waterfront village offers a residential setting and a variety of year-round services.

A portion of the Village's northeast municipal boundary is located adjacent to the proposed Facility Site[17]. It is anticipated that individual establishments within this local resource could attract tourists to this region. Views of the Facility from within the Village are screened. However, there is a possibility for views, mostly discreet, to occur at the NYS Route 12E municipal boundary and along the northeast boundary which bisects Morris Tract Road. With the exception of the G. Spence Donaldson Memorial Field, these views appear to be either fleeting or on private property.

Morris Tract Road – Morris Tract Road runs in a northeast-southwest direction connecting the Village of Chaumont with Depauville Road, north of the Facility. Although this is a local roadway, it has been identified as having scenic value in the Village of Chaumont Comprehensive Land Use Plan (2010). Its importance is likely based on views of the agricultural fields and operations.

Views of the Facility will occur sporadically along this local resource between Van Alstyne Road (vicinity of) and the G. Spence Donaldson Memorial Field; where visibility does occur, a fewer number of solar panels will likely be observed at a distance of approximately one-half mile (i.e., no panels are located adjacent to the road). As many of the views will likely be discreet and of short duration, there may be factors where users may not comprehend, or experience reduced visibility of the Facility due to road orientation and concentration of navigating the corridor. However, as described above there may be visibility, within a closer distance, in the area of the G. Spence Donaldson Memorial Field. Even in this area, for those using the road, views are likely to be short and affected by the factors identified above.

[17] Although it borders the Facility Site, the Village downtown core is not.

County Route 125 – CR 125 is a loop road on Point Salubrius, originating and terminating at NYS Route 12E, west of the Facility. Although this is a local resource, it has been identified as having scenic value in the Town of Lyme Comprehensive Land Use Plan (2010). Its importance is likely based on views of the agricultural fields and Bay.

Views are available in the vicinity of the Lyme Rod and Gun Club. It is anticipated that visibility of the Facility it will be limited and minimal; should the field east of the roadway go fallow or be used for crops, visibility of the Facility will be further reduced or screened during the growing season.

Other Resources

Although not part of the Aesthetic Resource Inventory, it is important to recognize that visibility of the Facility may be possible from locations that do not meet the tolerance of an aesthetic (or scenic) resource. Given the rural nature of the VSA, additional locations of visibility have been identified along roadways adjacent to the Facility. These representative locations may be of interest to the local residents as they may be used for travel, or they may live in a roadside setting along these specific roads. Those that have been identified include:

- Weaver Road;
- County Route 59; and
- Case Road.

The screened viewshed identifies visibility along these roadways, County Route 59 has limited opportunities to view the Facility, however Case Road and Weaver Road will have an opportunity for an increasing amount of Facility visibility. The amount of visibility seen along Case and Weaver Roads is likely due to its relatively close proximity to the Facility, combined with open land with an unobstructed view (i.e., lack of screening by vegetation [roadside or other]). Weaver Road, north of Case Road, is the only segment (approximately 1,200 feet) of roadway with panels proposed on both sides.

Some of the views experienced along these roadways may be intermittent and temporary in nature (as seen by travelers), while others may result in views that are long in duration (as seen by landowners with views of the Facility). While the residents may be exposed to the Facility for longer periods of time, it is anticipated that sensitivity of the Facility will diminish over time due to continued exposure. In addition, it should also be noted that the panels closer to a viewer will likely limit, or screen, those panels further in a distance, thus reducing the number of overall panels which are visible.

9.1.4 Viewshed Results for Collection Substation

A viewshed map for the tallest components of the substation and the interconnect was completed and is included as Attachment 2 Figure 4. This analysis was based on five points: a 63-foot one inch interconnection takeoff (together with lightning masts mounted to the top of the structure), one 45-foot-tall lightening mast, and a three pole 45-foot-tall dead-end structure that is located on

the north side of the existing transmission line. The results of the screened analysis shows that most visibility will occur within the Foreground distance zone, along portions of the snowmobile trail (the existing transmission corridor), within the Facility Site that is already occupied by the panels, and within privately owned fields. Upon review of the viewshed map, it can be seen that these structures are visible in a similar geographic area as to the panels, yet to a lesser extent. When visible, it will also likely be seen in context to the existing transmission structures. Most views of these structures occur to the east and south of the Facility; there will be visibility along Case Road, Weaver Road, and even less visibility along roadways such as Morris Tract Road, County Route 125, and NYS Route 12E. As noted in Table 8, the limited visibility seen within the Foreground distance zone is further reduced in the Middleground distance zone, where it is anticipated that these structures will only be visible within 0.44 square miles, or 1.76% of this Zone.

Table 8. Percent Visibility (Screened) of the Substation within Each Distance Zones

Distance Zone	Total Area Comprising Distance Zone Square Miles	Visibility Within Distance Zone Square Miles	Percent of Visibility Within Distance Zone	Percent of Visibility Within the Two Mile VSA
Foreground (0-0.5 Miles)	7.63	1.54	**20.18%**	**4.72%**
Middleground (0.5-2.0 Miles)	25.03	0.44	**1.76%**	**1.35%**
Total	**32.66**	**1.98**	**N/A**	**6.07%**

9.2 Photographic Simulation and LOS Results and Discussion

The discussion of predicted visibility in Section 9.1 focuses on relative quantities of visibility (how much is seen and where) in an effort to understand and objectively assess the amount of visual change in the landscape. To further illustrate potential Facility visibility, a series of simulations and line-of-sight profiles were completed.

Photographic Simulations

Simulations of the Facility from representative vantage points have been developed to provide representative or typical views of the proposed Facility. These simulation locations were chosen based on a variety of factors including: predicted visibility based on the viewshed mapping, providing an adequate representation of the Facility, and accommodating requests from the Town of Lyme and ORES. Due to a lack of identified visibility outside of the immediate surroundings, many of the chosen locations are representative of what the community may experience from

local roadways. Where possible, attention to residents and residential groupings with expected views located near the Facility was given priority.

To illustrate the anticipated change within the landscape because of the Facility, simulations were prepared from twelve selected viewpoints, as identified in Table 9. The simulations are further discussed below.

Table 9. Photographic Simulation Locations

Photo Viewpoint ID	Location (Aesthetic Resource ID, as applicable)	Municipality	Approximate Distance to Facility	Landscape Similarity Zone	Camera Orientation
6	Morris Tract Road (Aesthetic Resource Number 41)	Lyme	0.66 miles	Agricultural	South-southeast
11	Case Road	Lyme	200 feet	Agricultural	North-northeast
13	Case Road	Lyme	366 feet	Agricultural	West
16	Case Road	Lyme	293 feet	Agricultural	Northeast
29	NYS Route 12E / Great Lakes Seaway Trail (Aesthetic Resource Number 1)	Lyme, Chaumont	983 feet	Transportation Corridor	Northeast
30	NYS Route 12E / Great Lakes Seaway Trail (Aesthetic Resource Number 1)	Lyme	0.19 miles	Transportation Corridor	North-northeast
37	Weaver Road	Brownville	596 feet	Agricultural	East-southeast
40	Morris Tract Road (Aesthetic Resource Number 41)	Lyme	0.36 miles	Agricultural	Southwest
42	County Route 125 (Aesthetic Resource Number 42)	Lyme	0.69 miles	Agricultural	East-northeast
44	County Route 59	Brownville	1.37 miles	Agricultural	Northwest
45	NYS Route 12E / Great Lakes Seaway Trail (Aesthetic Resource Number 1)	Lyme	0.65 miles	Transportation Corridor	Northwest
49	G. Spence Donaldson Memorial Field (Aesthetic Resource Number 23)	Lyme	342 feet	Agricultural	Southeast

Photographic Simulation Discussion

The following section discusses the anticipated visibility of the Facility from various representative viewpoints from around the VSA, mostly within close proximity to the Facility and within the Agricultural LSZ, unless otherwise identified. Simulations are presented as sets of Existing and Proposed Conditions and can be found in Attachment 5. Proposed mitigation vegetation is shown at 10-years' worth of growth and illustrated in the simulations where the landscaping is proposed. All simulations represent the panels in their upright position to depict a worse-case scenario, it should be recognized that they may be at different heights throughout the day as it tracks the sun (e.g., panels may be in a horizontal position at mid-day).

9.2.1.1 Viewpoint 6: Morris Tract Road

This viewpoint located in the Town of Lyme, approximately 0.66 miles north of the Facility, is adjacent to a residential dwelling. Those who typically use this roadway are likely to be residents, workers, and local commuters. This view contains a series of agricultural/open fields separated by hedgerows. Vegetation (trees and scrub/shrub) located in the immediate foreground and in the middle of the image consist of deciduous species, with a grouping of evergreens. Vegetation in the distance is deciduous with no visible evergreens. Colors are dominated by natural browns and blue, seen in the vegetation and fields, and sky, respectively. The fields, hedgerows, and distant vegetation form individual horizontal lines; singular trees (or small groupings) within the hedgerows and the H-frame structures from the National Grid Thousand Island – Coffeen Street #4 Lyme Tap 115 kV transmission line provide vertical elements throughout the image.

With the Facility in place, visibility of the panels and modifications to the existing tree line are noticeable but are not a prominent change. Assisting in its lack of visibility is the Facility's low-profile which does not allow the screening of distant landscape or cresting of the horizon. The panels tend to blend into the background, even with their darker appearance. As the Facility is not highly noticeable, it does little to change the character of the landscape. The panels may be further screened from the viewer due to leaf-on conditions of the hedgerows that are visible between the viewer and Facility.

9.2.1.2 Viewpoint 11: Case Road

This viewpoint located in the Town of Lyme, is approximately 200 feet south of the Facility, adjacent to a cluster of residential dwellings. Those who typically use this roadway are likely to be residents, workers, and local commuters. This view contains a manicured lawn and gravel driveway in the immediate foreground, followed by agricultural/open fields. Vegetation in the distance is deciduous with few visible evergreens. Case Road and the driveway introduce gray asphalt pavement and gravel, respectively; this is seen against the natural gray and brown colors of the field and trees; and blue sky. The fields, driveway, and distant vegetation form individual horizontal lines; the existing H-frame transmission structures and the road marker provide vertical elements.

With the Facility in place, the open land is now occupied by solar panels surrounded by galvanized fencing. The placement of the Facility mimics the existing horizontal line that was previously seen

in the field, yet it creates a series of vertical and angular lines due to the proposed fencing and panels. The rural character of the view has been altered as the clearly man-made facility introduces new materials, textures, and colors to the existing field character. The Facility is consistent in scale with the surrounding landscape due to its low-profile, which does not extend above the roadside marker and limits screening of the background forested land and transmission line. Although the southern edge of the Facility is gray in appearance, similar to that of the roadway and driveway, its remaining darker appearance caused by shading makes it appear as a dominant feature in view.

In addition to the panels and fencing, portions of the substation and interconnect are visible in the distance. While the top portions of the shorter components are visible, the take-off and the terminal dead-end structures are most noticeable. These introduce new vertical elements within the view that appear against the forested land in the background. While the lighter color of these structures make them more noticeable, they are a small portion of the overall Facility, and are similar in appearance and style to the existing transmission structures.

Mitigation plantings are planned along the property line adjacent to a small grouping of residential dwellings. As the plantings mature, their screening value will increase. Although the plantings will screen the Facility there will be views where landscaping is lacking adjacent to Case Road. The vegetation will also add new natural colors and textures softening the horizontal expanse of the Facility. The proposed mitigation seen by motorists will be intermittent and of short duration, while longer durations will be experienced by residents.

9.2.1.3 Viewpoint 13: Case Road

This viewpoint is located in the Town of Lyme, approximately 366 feet east of the Facility and is adjacent to a residential dwelling. Those who typically use this roadway are likely to be residents, workers, and local commuters. This image contains a portion of a manicured lawn, a dirt access road, and an unmanaged land buffer in the immediate foreground, followed by agricultural/open fields. Vegetation in the distance is deciduous with few visible evergreens likely within the mass of trees. Colors within the view are dominated by natural browns and blues. The field edges, utility lines, and a portion of the distant vegetation form individual horizontal lines; the utility pole, the immediate foreground trees and the distant communications tower provide vertical elements within the landscape.

With the Facility in place, the open land is now occupied by solar panels and fencing that conforms to the underlying contours. The Facility screens distant views from the observer, crests the horizon, and introduces a series of new vertical and angled lines. Although the Facility is set back from the road edge, the rural character of the view has been altered as the darker (somewhat similar to the color of the sky), clearly man-made facility is visible and introduces different materials, textures, and colors to the existing field character. With the facility extending length wise it appears as a prominent or co-dominant element within view; however, this is lessened due to its low-profile being seen with the large trees visible within the image.

Mitigation plantings are planned along the proposed fencing, providing screening from the roadway and area residents. As the plantings mature, their screening value will increase, however there will be views of the Facility where they are lacking. The vegetation will also add new natural colors and textures as the Facility is softened and the horizontal expanse of the Facility appears to be minimized. Views of the mitigation by motorists will be intermittent and of short duration, while longer durations will be experienced by residents.

9.2.1.4 Viewpoint 16: Case Road

This viewpoint is located in the Town of Lyme, is approximately 293 feet southwest of the Facility and is adjacent to a farm and garden center. Those who typically use this roadway are likely to be residents, workers, and local commuters. This image contains an agricultural/open field bordered by mostly deciduous vegetation in the distance. Colors consist of natural browns and greens of the field and trees, and blues seen within the sky. The fields and distant vegetation form individual horizontal lines; the existing H-frame transmission structures and individual trees provide vertical elements (some more noticeable than others).

With the Facility in place, the open land is now occupied by solar panels surrounded by fencing. The placement of the Facility mimics the existing horizontal line that was previously seen in the field yet creates a series of vertical lines due to the proposed fencing and panels. Although the Facility is set back from the road edge allowing the retention of an increased amount of open land, the rural character of the view has been altered. This darker, clearly man-made facility introduces different materials, textures, and colors into the existing field character. As the Facility extends length wise and deep into the field, it appears as a prominent, or co-dominant, element within view; however, due to its low-profile it does not extend above the tree line leaving the existing transmission towers and vegetation visible.

Mitigation plantings will provide screening of the Facility; as the plantings mature, their screening value will increase. The plantings will add interest to the view as shown on the simulation. The proposed vegetation will add new natural colors and textures as the panels and fencing will soften, and the expanse of the Facility appears to be lessened. Views of the mitigation by motorists will be intermittent and of short duration, while longer durations will be experienced by residents.

9.2.1.5 Viewpoint 29: NYS Route 12E

This viewpoint located in the Town of Lyme, approximately 983 feet west of the Facility, is adjacent to the Village of Chaumont municipal boundary. Although those who use this highway are likely to be concentrating on the road conditions and focusing down road, there are views to the surrounding landscape. This image illustrates a representative view, within the Transportation Corridor LSZ, that contains an open field in the immediate foreground with a mixture of scrub/shrub material visible against a backdrop of trees that screens distant views. The lower quarter of the image introduces gray asphalt pavement against the dominant natural gray and brown colors of the field and trees; the blues seen in the sky are co-dominant. The roadway, field, scrub/shrub material and trees all form individual horizontal lines bisecting the of the image;

vertical elements include wooden fence posts and individual trees seen throughout. The vegetation within view generally consists of deciduous species, but scattered evergreens are likely.

With the Facility in place, it is largely screened by the existing dense scrub/shrub hedgerow that is seen bordering the foreground field. It may be possible to see the Facility through thinning gaps of the vegetation resulting from plant die-back, which may occur over time, as well as the tops of the panels just above the vegetation due to specific view position/orientation. The most notable change within the landscape is that of the required tree removal. Although a horizontal tree line still exists, it is lower on the horizon. Overall, the Facility does little to change the character of the landscape.

There is minor visibility of the substation and interconnect. A portion of the take-off structure is visible in the distance, and although faint in appearance, the light color of the structure may be seen against the forested land in the background. This occupies a very small portion of the overall Facility and scene and, are similar in appearance and style to the existing transmission structures.

Although it is not anticipated that there will be significant visibility, in part due to the existing hedgerow and distance between the observer and Facility, mitigation plantings are being proposed behind portions of the scrub/shrub hedgerow. The proposed vegetation will be instrumental in screening the Facility, should the existing hedgerow be compromised, or additional views are evident once the Facility is in place. The plantings as shown in the mitigation simulation are seen as vertical elements against the deciduous dominated tree stand. As a result, the vegetation will add new natural colors and textures within the view. Views of the mitigation seen by motorists will be intermittent and of short duration.

9.2.1.6 Viewpoint 30: NYS Route 12E

This viewpoint located in the Town of Lyme is approximately 0.19 miles south of the Facility. Although those who use this highway are likely to be concentrating on the road conditions and focusing down road, there are views to the surrounding landscape. This representative view, within the Transportation Corridor LSZ, contains agricultural/open fields separated by a hedgerow. Vegetation in the foreground and in the distance are deciduous with little evergreens visible. With the exception of the gray asphalt pavement, colors in view are dominated by natural browns and blues. The roads edge, fields and distant vegetation all form individual horizontal lines; distinct vertical elements appear to be lacking.

With the Facility in place, it is mostly screened by the existing dense scrub/shrub hedgerow that is seen bordering the foreground field. The Facility will be visible where the scrub/shrub falls below the height of the proposed panels as witnessed on the left side of the image. Additional visibility may be possible through thinning gaps of the vegetation that result from plant die-back, which could occur over time. Although a new horizontal line may be introduced into the landscape, the Facility does little to change the character of the landscape.

In addition to the panels and fencing, portions of the substation and interconnect are visible in the distance. While the top portions of some components are visible, the terminal dead-end structure is most noticeable (the take-off structure is located behind an existing tree, limiting visibility). Although faint in appearance, the lighter color of the structures may be seen against the forested land in the background. This occupies a very small portion of the overall Facility and are similar in appearance and style to the existing transmission structures.

Although it is not anticipated that there will be significant visibility, in part due to the existing scrub/shrub hedgerow and distance between the observer and Facility, mitigation plantings are being proposed. The proposed vegetation will be instrumental in screening the Facility, should the existing hedgerow be compromised, or additional views are evident once the Facility is in place. Those panels that are visible above the scrub/shrub will begin to disappear as the screening value of the plantings are noticed. Within 10 years, the plantings screen the majority of the Facility in view, this includes the substation, however the dead-end structure and conductors will remain visible. The proposed vertical evergreens will be seen against the deciduous dominated tree stand in the background, as a result, they will add new natural colors and textures within the landscape. Views of the mitigation plantings seen by motorists will be intermittent and of short duration.

9.2.1.7 Viewpoint 37: Weaver Road

This viewpoint is located in the Town of Brownville, approximately 596 feet west of the Facility, adjacent to a residential dwelling. Those who typically use this roadway are likely to be residents, workers, and local commuters. This view contains a manicured lawn, a play structure and shed within the immediate foreground, followed by agricultural/open fields. There are noticeable hedgerows and distant vegetation which is deciduous with few visible evergreens. In addition, there is a mound of tires intermixed with the hedgerow that is clearly visible. Colors are dominated by a light-colored blue sky, and the natural browns seen within in the fields. The field edges, and distant horizon form horizontal lines; individual trees and structures within the foreground provide vertical elements within the landscape.

With the Facility in place, the open land is now occupied by solar panels surrounded by fencing. The placement of the Facility mimics the existing horizontal line that was previously seen; new vertical lines due to the proposed fencing and panels are present, but faint in appearance. Although the Facility is set back allowing the retention of an increased amount of open land, the rural character has been altered as the darker, clearly man-made facility is visible rising above the distant tree line introducing different materials, textures, and colors. It is also observed that the Facility does crest a portion of the horizon. The color of the Facility, while in contrast with the sky, does appear to be similar to that of the hedgerows, tire mound, and other vegetation (individual or grouping) seen on site. The Facility does not appear as a highly dominating element within this view; it is consistent in scale with the visible structures or vegetation being taller than the Facility's low-profile.

9.2.1.8 Viewpoint 40: Morris Tract Road

This viewpoint is located in the Town of Lyme, approximately 0.36 miles northeast of the Facility, adjacent to a farm operation and residential dwelling. Those who typically use this roadway are likely to be residents, workers, and local commuters. This view contains an open field bordered by a deciduous tree line. The field, transmission line conductors, and the tree line provide defined individual horizontal lines; the existing H-frame transmission structure and communication tower provide vertical elements. Colors within the view are dominated by natural browns and blues, with the introduction of a gray roadway bisecting the lower right corner of the image.

With the Facility in place, a portion of the panels and modifications to the existing tree line are noticeable. The panels are seen toward the center of the view where they are lighter in color (similar to that of the sky's horizon), when compared to the foreground field and distant tree line. Assisting in its lack of visibility is the Facility's position behind vegetation, and its low-profile that does not allow for the screening of the distant landscape or cresting of the horizon. While the Facility does introduce a horizontal line, it does imitate that of the field edges. The rural character of the view has been altered as the clearly man-made facility is visible and introduces different materials, textures, and colors, however these changes do not significantly alter the landscape setting. The Facility is also seen in the same view of the existing transmission corridor and communications tower. It should be noted that the panels may be further screened from view due to leaf-on conditions or further growth of the hedgerows that are visible between the observer and Facility.

Although mitigation plantings have not been planned for this view, those located in other areas will be visible behind the Facility. The proposed evergreen trees are noticeable within the mitigation simulation and although no screening occurs, the green color of the vegetation may be noticeable. Should the plantings be observed, they will likely be seen as a part of the existing vegetation.

9.2.1.9 Viewpoint 42: County Route 125

This viewpoint is located in the Town of Lyme, approximately 0.69 miles southwest of the Facility and is in close proximity to the Lyme Rod and Gun Club. Those who typically use this roadway are likely to be residents, workers, and local commuters. This view contains an area of scrub/shrub that separates the edge of the roadway and an agricultural field. Trees are mostly seen as a mass, with a few noticeable individuals, in the distance, and consist of deciduous vegetation with a grouping of evergreens. Colors are dominated by a light-colored blue sky and the browns seen within in the fields; scattered light-colored structures are at the far edge of the field. The distant vegetation and field form individual horizontal lines; vertical elements are not strongly represented. Dwellings and accessory structures seen in the distance tend merge into the surrounding landscape.

With the Facility in place, the simulation shows that it will be difficult to distinguish the panels and modifications to the existing tree line. Located in the center of the view, a small portion of the

panels are seen just above the cultivated field. Assisting in its lack of visibility is the distance between the observer and the Facility, and its low-profile. The panels also take on a grayish hue, consistent with the landscape seen at that distance. The minor appearance of the Facility makes it one small element within the overall landscape as it blends in with the visible development. As the Facility is not highly noticeable, it does little to change the rural character.

Similarly, to the panels and fencing, portions of the substation are just as indistinguishable. The top portions of the shorter components, as well as the terminal dead-end and take-off structures may be seen within this view. Visibility is faint in appearance, yet the lighter color of the structures may be seen against the forested land in the background. This facility sits behind scrubby roadside vegetation, but if visible will occupy a very small portion of the overall Facility and scene, and will be similar in appearance and style to the existing transmission structures.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are being proposed in association with NYS Route 12E and may be visible from this vantage point. As they mature, the plantings will screen the majority of the Facility in view, this includes the substation, however the take-off and dead-end structures and conductors may still be visible. The proposed evergreens, providing year-round screening, will blend into the existing landscape and will be seen against a deciduous dominated tree stand in the background. The evergreen vegetation which will add a new natural color and texture within the view, if noticeable. Views of the mitigation for observers in this area will likely be intermittent and of short duration.

In addition to the proposed mitigation, it should be recognized that when crops are grown to a sufficient height within the foreground field, views of the Facility will be further limited. This will be contingent on growing season (summer/fall months) and type of crop (corn versus soybeans).

9.2.1.10 Viewpoint 44: County Route 59

This viewpoint is located in the Town of Lyme, approximately 1.37 miles southeast of the Facility, adjacent to a cluster of residential dwellings. Those who typically use this roadway are likely to be residents, workers, and local commuters. The view from in front of a residential dwelling contains a manicured lawn and hedgerow in the immediate foreground, an agricultural/open field in the middle, and a distant landform and vegetation; vegetation within this view consists of deciduous species. Colors are dominated by natural browns and sky blues. The field, distant vegetation, and the roofline of the dwelling in the immediate foreground form individual horizontal lines; with the exception of the foreground dwelling, vertical elements are not strongly represented. Dwellings and accessory structures seen in the distance tend merge into the surrounding landscape.

With the Facility in place, the simulation shows that it will be difficult to distinguish the panels and modifications to the existing tree line. Located just to the right of the foreground structure, a small portion of the panels are faintly seen just below the background ridgeline. Under these conditions, the panels take on a grayish hue, blending into the adjacent colors. The Facility appears as a minor element and is seen as one small element within the overall landscape blending in with the

visible development. As the Facility is not highly noticeable, it does little to change the character of the landscape.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are proposed in association with NYS Route 12E and may be visible from this area. As the plantings mature they will screen portions of the Facility in view, and may be seen against the deciduous dominated tree stand in the background. Although the evergreen vegetation appears to blend into the existing landscape, they will add a new natural color and texture within the view (if noticeable). Views of the mitigation plantings, as seen by observers in this area will likely be intermittent and of short duration, with views from resident's long term. It is anticipated that long term exposure will result in the plantings viewed as part of the existing forested land.

9.2.1.11 Viewpoint 45: NYS Route 12E

This viewpoint is located in the Town of Lyme, approximately 0.65 miles southeast of the Facility. Although those who use this highway are likely to be concentrating on the road conditions and focusing down road, there are views to the surrounding landscape. This image illustrates a representative view, within the Transportation Corridor LSZ, containing agricultural/open fields in immediate foreground that are separated by a hedgerow; in the further distance is another field. Vegetation in the foreground and those the distance is deciduous with no visible evergreens. Except for the gray asphalt pavement and the scattered light-colored structures, colors are dominated by natural browns visible in the fields and vegetation, and the blues seen within the sky. The fence, fields, and distant vegetation all form individual horizontal lines; the road edge, individual trees, utility poles along Case Road, and the numerous fence posts provide a series of vertical elements located throughout the view. The residential dwellings visible within the view tend blend into the surrounding vegetation.

With the Facility in place, it is partially screened by the existing dense scrub/shrub hedgerow that is seen bordering the far field. The Facility will be visible where vegetation is lacking or dips below the height of the proposed panels. The panels create a new horizontal line that is introduced into the landscape and may provide a contrast with the surrounding colors. However, it is important to note that the sky makes up a large portion of this view and that the coloration of the panels may blend in with the sky under certain conditions.

Although it is not anticipated that there will be significant visibility of the Facility, mitigation plantings are proposed and evident. The proposed vegetation will be instrumental in screening much of the visible Facility. The plantings from this view are evident in the mitigation simulation, and with the distance between the observer and Facility the plantings blend with the existing vegetation. Views of the mitigation plantings that are seen by motorists will be intermittent and of short duration.

9.2.1.12 Viewpoint 49: G. Spence Donaldson Memorial Field

This viewpoint is located in the Town of Lyme, approximately 342 feet northwest of the Facility. This particular location is from behind the field backstop where benches and a bleacher have been placed for spectators. The view shows an open field with mature trees outlining it in the distance. The field and trees provide defined horizontal lines, while there is a vertical definition at either side caused by vegetation or a built structure. The vegetation within view generally consists of deciduous species. Colors are dominated by the greens of the field and vegetation, and blues visible in the sky. Not clearly evident, or just outside this rural view, is an existing access road and lattice style communication tower. It should be noted that this leaf-on, early summer photograph was obtained at the request of the Town of Lyme.

With the Facility in place, the open land and a portion of the existing vegetation seen in the distance is now occupied by the solar panels. The panels and fence conform to the underlying contours mimicking the existing horizontal line that were once evident in the field. The rural character of the view has been altered as the clearly man-made facility is visible, crests a portion of the horizon, and introduces different materials, textures, and colors; thus changing the appearance of the rural character. The dark color of the panels is in contrast of the blue sky. As the Facility extends length wise it appears as a prominent element within view; however, it is consistent in scale with the existing features. In addition, the proposed access road draws attention to the viewer due to its curvilinear form and contrasting color with the panels.

It is anticipated that this view of the Facility will be evident to those utilizing the Field. Duration of view will be contingent on user activity - those participating in a sport may be preoccupied with the activity than the landscape around them, compared to a spectator who may notice the landscape and view the Facility for a longer duration. While there is a possibility for a higher number of viewers at this location during events, it should also be considered that the season of play does not include late fall, summer, and early spring months, use of the Field is more likely on the weekends or in the evening, and users will not be their every day. These considerations reduce the overall number of potential viewers.

Mitigation plantings, which are planned along the property line, will provide screening of the Facility; as the plantings mature, their screening value will increase. The proposed vegetation will add new natural colors and textures as the panels and fencing will softened, and the horizontal expanse of the Facility is minimized. Views of the mitigation plantings for those using this resource will be available during the length of the activity and will therefore be temporary in nature.

9.2.2 Discussion – Line of Sight Results

Profiles were completed to illustrate the proposed substation from Case Road and the Snowmobile Trail (C5J), and of the solar panels from the Chaumont Historic District and Trail. Each profile was selected to illustrate how the landscape setting affects visibility and the relationship of Facility components may have to one another in that specific instance. In addition, these profiles assist in confirming visibility, or lack thereof.

Table 10. Line-of-Sight Profiles

ID	Location	Municipality	Approximate Distance to Facility	Landscape Similarity Zone
LOS 1	Case Road and Snowmobile Trail (Resource 28)	Town of Lyme	1,480 feet to the substation and 350 feet to the panels in LOS 1a, and 230 feet to the substation and 670 feet to the panels in LOS 1b	Agricultural
LOS 2	Chaumont Historic District and NYS Route 12E (Resource Numbers 2 and 1, respectively)	Village of Chaumont	3,080 feet to the panels	Village
LOS 3	Snowmobile Trail (Resource Number 28)	Town of Lyme	280 feet to the panels in LOS 3a and 100 feet in LOS 3b	Agriculture

The two profiles are discussed below and contained in Attachment 4.

9.2.2.1 LOS 1 – Case Road and Snowmobile Trail (C5J)

The collection substation and interconnection facilities will be located on land adjacent to the National Grid Thousand Island – Coffeen Street #4 Lyme Tap 115 kV transmission line right-of-way. The height of the existing H-Frame transmission structures adjacent to the interconnection are approximately 78 and 66 feet in height, east and west respectively. This compares to the tallest proposed structures within the substation, namely the takeoff at 63 feet one inch and lightning mast at 60 feet; many of the substation components are at a height of (approximately) 25 feet or less.

While there are four simulations that show potential views of the substation, the LOS 1a profile was completed to illustrate its relationship with the proposed solar panels, existing transmission line, and the existing vegetation, as applicable from this particular location along Case Road. The profile demonstrates that the vegetation will likely provide screening of the substation during leaf-on seasons. Should visibility occur, particularly during leaf-off months, much of the substation will be screened by the panels themselves, thus it will be seen as a small component of the overall Facility. Although the panels will be seen at an angle, those panels beyond the first several rows will begin to be screened, by the panels themselves.

In addition, the seasonal Snowmobile Trail may also be found on this LOS profile. As highlighted on LOS 1b, the Trail coincides with the transmission corridor and will have a view of the existing transmission infrastructure and the Facility. The profile demonstrates that the substation will be unobscured, as well as the first several rows of panels. Although the panels will be seen at an

angle, those panels beyond the first several rows will begin to be screened, by the panels themselves. LOS 2 – Chaumont Historic District and NYS Route 12E

This LOS profile was completed to demonstrate the available screening from within Chaumont Historic District, originating from NYS Route 12E. As illustrated in this particular profile, existing vegetation within the vicinity of NYS Route 12E and along Horse Creek will provide screening of the Facility during leaf-on seasons, and likely during leaf-off conditions due to the thickness along the Creek and the general layering of the vegetation. Should visibility exist, the proposed mitigation plantings will also provide a layer of screening, one which contains evergreen trees. This LOS is a very discreet profile between structures located in the Village of Chaumont, one which is unlikely to be comprehendible by travelers and others within the Village setting.

9.2.2.2 LOS 3 – Snowmobile Trail (C5J)

A supplemental LOS profile was undertaken for the seasonal Snowmobile Trail, due to its unique location where it bisected two sets of panels. This Trail is located within an existing transmission corridor and will have views of the existing H-frame structures and the proposed Facility in both directions. As illustrated on LOS 3a and 3b, the fence and panels will be visible. The panels will be seen at an angle, and it is illustrated that after the couple sets of panels, they will begin screening those located further away from the user.

9.3 Visual Impact Rating Results

Simulations illustrating representative views of the Facility, without mitigation, were rated in order to evaluate contrasts under worse-case conditions. In doing so, it is understood that proposed vegetative mitigation will moderate or minimize perceived visual impacts. For further information regarding the effects of mitigation please refer to Section 9.2, and the simulations illustrating post-construction mitigation presented in Attachment 4.

In completing this effort, three panelists evaluated and rated the simulations; Panelists 1 and 2 have been trained in the field of landscape architecture (one which is licensed), and Panelist 3 has been trained in the visual arts with a Bachelors of Fine Arts and a minor in art history, as well as having an environmental background with an M.S. in Soil Science. All three individuals have successfully completed ratings on previous project applications. A description of the methodology used in the rating process is contained in Attachment 7, as well as panelist qualifications, and the completed evaluation forms for each simulated viewpoint.

Table 11 (below) summarizes the scores and averages for Part 1 Visual Contrast, Part 2 Viewpoint Sensitivity, and Part 3 Existing Scenic Quality. Trends from the rating results can be obtained for the simulations and locations with the strongest or weakest visual change in relation to each other can be assessed. Mean deviations are also calculated to gauge how much variation occurs between panelist evaluation results.

Table 11. Visual Impact Rating Results

VP	Location	Contrast Rating Panelist 1			Contrast Rating Panelist 2			Contrast Rating Panelist 3			Avg Part 1	Mean Dev* Part 1	Avg Part 2	Mean Dev* Part 2	Avg Part 3	Mean Dev* Part 3
		Part 1	Part 2	Part 3	Part 1	Part 2	Part 3	Part 1	Part 2	Part 3						
6	Morris Tract Road	4	10	1	3.5	12.5	2.5	5.5	10.5	2	**4.3 VW****	0.8	**11.0 WM**	1.0	**1.8 M**	0.6
11	Case Road	14	6.5	1	18.5	5.5	2	18	4.4	1.5	**16.8 M**	1.9	**5.5 W**	0.7	**1.5 WM -M**	0.3
13	Case Road	17	6	1	19.5	4	1	18	4	1.5	**18.2 MS**	0.9	**4.7 W**	0.9	**1.2 WM**	0.2
16	Case Road	15.5	5	1	21	4.5	2.5	17.5	4.5	2	**18.0 MS**	2.0	**4.7 W**	0.2	**1.8 M**	0.6
29	NYS Route 12E	3	14	1	10.5	14.5	2	5.5	11	2	**6.3 W**	2.8	**13.2 M**	1.4	**1.7 M**	0.4
30	NYS Route 12E	7.5	14.5	1	8.5	11	1.5	4.5	11.5	2	**6.8 W**	1.6	**12.3 M**	1.4	**1.5 WM -M**	0.3
37	Weaver Road	15	5	1	15.5	3.5	2	13.5	4	0.5	**14.7 M**	0.8	**4.2 W**	0.6	**1.2 WM**	0.6
40	Morris Tract Road	10	13	1	12.5	9.5	1	14.5	10	1	**12.3 WM**	1.6	**10.8 WM**	1.4	**1.0 W-WM**	0.0
42	County Route 125	4	14.5	1	1.5	12	1.5	3.5	14.5	1	**3.0 VW**	1.0	**13.7 M**	1.1	**1.2 WM**	0.2
44	County Route 59	11	10	1	4	9	1.5	4	8.5	1	**6.3 W**	3.1	**9.2 WM**	0.6	**1.2 WM**	0.2

Table 11. Visual Impact Rating Results

VP	Location	Contrast Rating Panelist 1			Contrast Rating Panelist 2			Contrast Rating Panelist 3			Avg Part 1	Mean Dev* Part 1	Avg Part 2	Mean Dev* Part 2	Avg Part 3	Mean Dev* Part 3
		Part 1	Part 2	Part 3	Part 1	Part 2	Part 3	Part 1	Part 2	Part 3						
45	NYS Route 12E	3.5	11	1	4.5	10.5	1.5	4	11	2	**4.0 VW**	0.3	**10.8 WM**	0.2	**1.5 WM -M**	0.3
49	G. Spence Donaldson Memorial Field	18.5	11	1	18.5	9	1.5	19.5	7.5	1.5	**18.8 MS**	0.4	**9.2 WM**	1.2	**1.3 WM**	0.2

*Mean Dev = mean deviation

**VW-very weak, W=weak, WM= weakly moderate, M=moderate, MS=moderately strong, S=strong

9.3.1 Part 1 Contrast Rating

Part 1 Contrast Rating, described in Attachment 7, rates the proposed visual change against existing conditions with respect to compositional elements such as newly introduced lines, shapes, colors, Facility scale, and broken horizon lines. Under Part 1, there are nine categories to rate, where the total rating ranges from 0 to 27. When the rating contrast scale outlined in Section 8.0 is rescaled to account for the averages found in Table 11, with respect to the nine categories, the scale is as follows:

Contrast Rating Scale	
0	None
0 - 4.5	Very Weak
4.5 - 9	Weak
9 - 13.5	Weakly Moderate
13.5 - 18	Moderate
18 - 22.5	Moderately Strong
22.5 - 27	Strong

Three simulations, viewpoints (VP) 13 and 16 on Case Road and VP49 at G. Spence Donaldson Memorial Field, were identified as having a moderately strong Part 1 Contrast Rating. These locations achieved rating averages of 18.2, 18.0, and 18.8, respectively. Each have clear unobstructed views of the Facility and range from 274 to 356 feet from the fence line. Proximity and high visual acuity in addition to new color, shape, and line that contrasts with the existing landscape contribute to the high ratings for these simulations. Broken horizon lines are observed at VPs 13 and 49 which also increases their contrast results.

The next set of simulations with lower contrast results, rating weakly moderate to moderate, include VP11 at Case Road, VP37 at Weaver Road, and VP40 at Morris Tract Road with rating averages of 16.8, 14.7, and 12.3, respectively. Distance to the fence line is more varied as VP11 is 212 feet away, VP37 is 596 feet away, and VP40 is 1,901 feet away. These three simulations show that new Facility components are introduced into view. VP11 is proximal but the panels do not interrupt the horizon line. VP37 is farther away but is partially screened by existing vegetation while panel colors are also visually absorbed due to similar adjacent leaf-off vegetative hues. VP40 is distant and the panels do not provide high Facility contrast. However, tree clearing that changes the horizon line is observed, as well as a partial view to the Facility.

The remaining six simulations have rating averages that are considered to be weak (VPs 29, 30, and 44) and very weak (VPs 6, 42, and 45). These viewpoint locations range in distances of 948 feet to 7,339 feet (1.4 miles) from the Facility fence line. Longer distant partial views to the panels, as well as existing intervening vegetation along sight lines help explain the weak and very weak rating results for this set of simulations. Facility siting and large road offsets influence the diminished visibility, which is particularly important for viewers along the nearby NYS Route 12E

/ Great Lakes Seaway Trail (Seaway Trail). VPs 29, 30, and 45 are from the Seaway Trail and were determined to have weak and very weak contrasts. Facility offsets minimize the perceived size and scale of the panels while its siting is such that intervening vegetation seen along the Seaway Trail will screen much of the view.

Mean deviations were calculated to observe the level of variance between the panelists within each simulation evaluation. Mean deviations ranged between 0.3 and 3.1, thus there is general agreement between the panelists. However, the greatest difference of opinion occurred with the simulation completed for VP44; the Part 1 Project Contrast for this location rated as weak yet resulted in the highest mean deviation of 3.1. Review of the completed evaluation forms indicate that one panelist consistently rated the contrasts within this simulation at least one point higher for most of the Part 1 categories as compared to the other panelists. It appears panelist opinion also varied the most regarding contrast changes when assessing VPs 16 and 29. VP29 has a mean deviation of 2.8. While the Facility is barely discernible at this location because of existing intervening vegetation, differences of opinion appear to occur in assessing the level of contrast that the proposed tree clearing provides. VP16 has a mean deviation of 2.0; in reviewing the evaluation forms one panelist consistently rated most Part 1 categories a half point lower as compared to the other two panelists.

9.3.2 Part 2 Viewer Sensitivity

There are eight categories under Part 2 to rate where the total rating ranges from 0 to 24. When the rating contrast scale outlined in Section 8.0 is rescaled to account for the averages found in Table 11, with respect to the eight categories, the scale is as follows:

Contrast Rating Scale	
0	None
0 - 4	Very Weak
4 - 8	Weak
8 - 12	Weakly Moderate
12 - 16	Moderate
16 - 20	Moderately Strong
20 - 24	Strong

Part 2 of the contrast evaluation form considers viewer sensitivity, particularly if the viewpoint falls within or has a view of an existing visual resource. It also accounts for the character of viewer groups such as number of viewers, duration of view, presence of existing development, etc.

Table 4 indicates that there will be few views of the Facility from listed visual receptors. Therefore, most of the simulated locations emphasize viewer groups related to community roadway travelers or residences. Included with roadway travelers was a focus to provide simulations of representative views along NYS Route 12E / Great Lakes Seaway Trail, County Route 125, and

Morris Tract Road, the two latter roadways are recognized as local roads of scenic interest. Rating averages range from 4.2 to 13.7 and thus weak to moderate. Viewpoints 29 and 30 (both along the Seaway Trail), and VP 42 County Route 125 are the exceptions that had a moderate average rating. The higher ratings (10.8 to 13.7) of all the locations simulated are attributed to locations along a designated scenic roadway. VP49 at G. Spence Donaldson Memorial Field, a local recreational resource listed in Table 4 has a rating of 9.2. Remaining viewpoints are on local roads near residences.

Mean deviations for Part 2 Viewer Sensitivity show variance ranging between 0.2 and 1.4., and results show common agreement as these ratings are generally less subjective. Review of the evaluation forms suggest that in some instances there were slight differences of opinion on how panelists rated existing development, the duration of view, or the numbers of viewers based the location of the viewpoint and abundance of residences in the area.

9.3.3 Part 3 Scenic Quality

Part 3 Scenic Quality is a standalone single rating that assesses the overall scenic quality of the existing conditions for each simulated location in order to establish a baseline condition (see Attachment 5). For this rating, there is no evaluation of visual change, only a simple appraisal of the scenic quality of the view - a rating of 1 is weak, 2 is moderate, and 3 is strong.

Scenic quality for the simulated viewpoints was generally rated as weak/weakly moderate to moderate with averages ranging from 1.0 to 1.8. However, weak or moderate rating averages do not fully imply that views are not attractive, restful, or important to the community. Although there are rural, restful, unchaotic and harmonious pastoral views of open fields with little development, panelists felt that they were average, typical of the region, and did not offer a high degree of visual interest such as landscape diversity, show distinct focal points that enhance scenic quality or offer other types of outstanding views (for additional information refer to Attachment 7). Most simulations have a similar large horizontal shape in each view consisting of level foreground-midground fields in the bottom third of the image, a band of background trees in the middle, and the upper third of the photos showing sky. However, the intent was to provide simulations of the Facility from some visual resources and present representative views of what the community would experience from residences and roadways.

Mean deviations for Part 3 are comparatively very low, ranging between 0.0 and 0.6. This suggests the panelist's opinions on scenic quality regarding each simulation are very similar with little difference of opinion.

10.0 MINIMIZATION AND MITIGATION PLAN

Mitigation measures may be implemented in order to reduce, or minimize, potential visibility and generally consists of proper siting and design, and vegetative plantings. These strategies are outlined below and supplement those identified in Exhibit 8.

When a solar facility is decommissioned and removed, the land can be returned to other productive use, including farming. In this way, a solar lease can be a way to preserve land for potential future agricultural use. Until this situation arises, large-scale solar projects can be made less visible from roads or other public vantage points by through the use of mitigating strategies. Techniques such as using low profile equipment, taking advantage of natural topographic and vegetative screening, increasing road setbacks, siting against tree lines, and avoiding the use of overhead interconnection lines where possible.

10.1 Mitigation and Minimization Measures

10.1.1 Screening

The primary mitigation measure to soften and screen the Facility is through the use of a thoroughly developed landscape plan. The Applicant has provided such a plan as part of Appendix 5-1 of Exhibit 5 of the Application and landscape screening measures are further discussed in Section 10.3 herein.

10.1.2 Architectural Design

Due to the nature of the Facility (e.g., panels, racking system, fencing, substation), architectural design options as a visual mitigation technique are minimal. Facility components are standard to a commercial scale solar project. The Facility will not have an operations and maintenance (O&M) building; therefore, visibility of such a structure is not included in part of the analysis. However, in order to minimize visibility of the Facility's collection substation and interconnect, these components have been sited at least 1,480 feet from Case Road, which is the nearest year-round publicly accessible area, and much of these elements are also screened by the panels themselves, from this corridor. The substation will contain a steel control building that will be painted a light gray, appearing to be coordinated with other components (e.g., bussing) within the substation. Visibility of these features will be minimized.

10.1.3 Visual Offsets

A visual offset would require the improvement to an existing "eye-sore", or similar, not associated with the Facility. For instance, the removal of a dilapidated barn. There are no proposed visual offsets being proposed in addition to the other measures being offered.

10.1.4 Relocation or Rearranging Facility Components

The siting of the Facility has been done in such a manner that relocation, or rearranging components, will not effectively reduce visibility. The Facility layout is restricted to available land, on leased or purchased parcels, after consideration of environmental and engineering restrictions. In addition, the Facility has been sited to meet or exceed setback requirements identified by ORES, and the Towns of Lyme and Brownville. Exhibit 5 (Design Drawings) provides additional

detail regarding setbacks and the distances used for this Facility. These setbacks are applicable to proposed components such as solar panels, inverters, and the collection substation.

When evaluating the location of the Facility, the following should also be recognized:

- The Facility has been located at least 800 feet from the NYS Route 12E. This allows for 1) an increased setback distance between the corridor and Facility, and 2) the Facility is sited in a manner that takes advantage of screening provided by existing vegetation, as seen from the corridor.

- The Facility is generally sited far from many of the listed visual resources.

- The Facility is sited in a manner that will take advantage of existing screening so that visibility will be minimized or eliminated from the core downtown area of the Village of Chaumont; thus, reducing potential visibility by a relatively larger number of viewers.

- The collection substation is located adjacent to the existing transmission line to minimize the distance between the two features, and consolidate like structures and land uses. The collection substation is located approximately 3,500 feet and 1,480 feet away from Morris Tract Road and Case Road, respectively.

10.1.5 Reduction of Facility Component Profiles

The Facility has been sited on contiguous parcels to the maximum extent practicable, while reducing the footprint of the Facility to the minimum amount required. A further reduction in size will jeopardize the power generation needed to meet the goals of the Facility, which is in response to New York State renewable initiatives. The proposed panels, at their maximum tilt angle will result in a height of eight feet-eleven inches, which less than is allowed by the Town of Lyme (16 feet) and Town of Brownville (20 feet).

10.1.6 Alternative Technologies

As described in the Section 94-c Application, the Applicant intends to use a solar module similar to the Jinko Solar Tiger Pro 72HC-TV 530W Bifacial Module with 3.2 mm Anti-Reflection Coating on a tracker racking system similar to the ArrayTech DuraTrack® HZ v3 system. The maximum height of the solar array panels is anticipated to be 8 feet, 11 inches from finished grade, inclusive of the racking system. No alternative technologies are available to significantly reduce visibility of the proposed Facility.

10.1.7 Facility Color and Design

There is limited opportunity to change the color of the Facility, as there is a lack of options for the panels, racking system, and collection substation, as is typical for this type of facility.

In addition, in designing the Facility, the following techniques were implemented: low profile equipment, taking advantage of natural topographic and vegetative screening due to limited grading, increasing road setbacks, siting against tree lines, and avoiding the use of overhead interconnection lines where possible (e.g., for collection). Specifically:

- The Facility minimizes the amount of vegetation clearing and uses existing vegetation, such as the surrounding woodlands and hedgerows, as visual barriers as much as possible[18]. For additional information on clearing, please refer to Exhibit 11.
- In most instances, the panels are proposed against background trees to reduce visual contrasts, as color contrasts are absorbed and moderated by the background trees.
- Vegetation clearing outside of the panels is kept to a minimum in order to preserve existing trees and other vegetation for Facility screening to the maximum extent practicable.
- In order for the substation to appear cohesive, the steel control building will be painted a light gray, appearing similar to other components (e.g., bussing) within the substation.

10.1.8 Lighting Options

The only permanent sources of lights will be at the substation and gates, which will assist in the safety and security if the Facility. Light emitted from the fixtures will not result in light trespass or glow in an upright manner that is associated with light/sky pollution. For more details regarding proposed lighting at the Facility, see Section 10.4, Attachment 4, and Exhibit 5 Appendix 1.

10.1.9 FAA Aviation Lighting Hazards

Due to the low profile of the Facility, FAA hazard lighting is not required.

10.1.10 Supplemental Mitigation and Minimization Measures

- In additional to those mitigation and minimization measures identified in Sections 10.1.1 through 10.1.9, the following was also considered/implemented:
- Advertisement and Facility Signage – Other than warning or safety signs, no advertisements, conspicuous lettering, or logos will be permitted on Facility components.
- Electrical Collection System – Collection lines have been placed underground (via direct burial or trenching) to decrease the number of visible elements or additional aboveground impacts. This configuration allows continued use of the land within the Facility Site. In some instances, the lines will be buried via HDD in order to avoid wetland resources and roadways. However, should subsequent unforeseen engineering, construction, or

[18] The Applicant complies with the Town of Lyme local law on the amount of tree clearing.

environmental constraints dictate the need for overhead infrastructure, such apparatus will be utilized for the shortest distance possible.

- Electrical Collection and Transmission Facilities – The collection substation is located adjacent to the existing transmission line to minimize the distance between the two and consolidate like structures and land uses. The substation is located approximately 3,500 feet and 1,480 feet away from Morris Tract Road and Case Road, respectively.
- Non-Specular Conductors and Non-Reflective Finishes – Non-specular conductors shall be used for any portion of the transmission line and electric collection system.
- Racking systems consist of non-reflective metallic materials, and the solar photovoltaic panels are also designed to absorb light, not reflect light, and therefore, produce minimal, if any, glare.
- Electric collection and transmission structures shall have a non-glare finish. Use of a dark brown or green weathered steel dead-end structure shall be considered in the development of final engineered design.
- Snowmobile Trail Relocation – The Facility is displacing an approximately 1.5 mile segment of the snowmobile trail, the Applicant shall continue talks with the Thousand Islands Snowmobile Club about this situation and re-route the displaced section in a manner that is suitable to both (refer to Figures 2-4 of Attachment 2 for proposed change to alignment). Although the relocation of the Trail will be required based on the Facility layout, the new potential routing will minimize views of the panels located closest the NYS Route 12E and Morris Tract Road.

10.2 Glint and Glare

A glint and glare analysis, using the Solar Glare Hazard Analysis Tool (SGHAT), was undertaken to identify potential glint and glare impacts on nearby residences and roads, and the need for any necessary mitigation. As a result, there are no predicted glare occurrences for nearby residences or roadways. Pease refer to the study titled *Riverside Solar Project – Glint & Glare Analysis* (July 8, 2021) in Exhibit 8 Appendix 2 for further information.

10.3 Planting Plan

Vegetative mitigation, or screening, can be effective in further minimizing views. In order to provide additional screening, a landscape plan was developed that contains sustainable, hearty and resilient plantings that primarily consist of native/indigenous species. The proposed Planting Plan has an emphasis on evergreens which will help minimize year-round views into the Facility site. Additionally, ornamental, pollinator-friendly, small trees and shrubs have been incorporated into the plan to provide a more natural look, as well as being more aesthetically pleasing and complimentary to the surrounding area.

The Landscape Plan developed for the Facility can be found in Attachment 4 and Appendix 5-1. The following items and concepts were applied to the plan:

- The Towns of Brownville and Lyme Zoning Laws were reviewed, and the visual screening efforts meet the stated intent of the requirements to the best extent possible. The Town of Lyme had met with the Applicant in order to review and approve the proposed plan.

- Native/indigenous evergreen trees and pollinator-friendly deciduous shrubs and small ornamental tree species were selected for inclusion into the plan. The species chosen will need to reach an adequate height and width to provide the appropriate visual screening, while also maintaining minimum mature heights that will not produce shade over the Facility in later years. Deciduous and evergreen tree species include: balsam fir (*Abies balsamea*), northern white cedar (*Thuja occidentalis*), eastern white cedar (*Juniperus virginiana*), white spruce (*Picea glauca*), flowering dogwood (*Cornius florida*), and downy shadbush (*Amelanchier arborea*). Shrub species include: red chokeberry (*Aronia arbutifolia*), red twig dogwood (*Cornus sericea*), common witch hazel (*Hamamelis virginiana*), common winterberry (*Ilex verticillata*), and highbush blueberry (*Vaccinium corymbosum*).

- The plantings are proposed along the outside fence line or at property boundaries in locations noted on the Landscaping Plan. Two planting types (or modules) are proposed for an approximate total of 12,430 linear feet along portions of the south and west Facility boundary:

    - Mitigation Planting Template Type 1: This planting scheme provides a density of plantings that will be considered a typical visual screening effort for the Facility. Approximately 32 deciduous and evergreen trees, per 300 feet of linear planting, are being proposed. White spruce and eastern red cedar make up the majority of the trees being suggested within this grouping. In addition, 21 shrubs are also included within this template. Type 1 plantings will be utilized/implemented along 10,750 linear feet (86% of the proposed plantings) of the Facility.

    - Mitigation Planting Template Type 2: This planting scheme provides a higher density of plantings to screen views. Approximately 39 deciduous and evergreens trees, per 300 feet of linear planting, are being proposed. Eastern red and northern white cedars make up most of the trees being suggested within this grouping. In addition, 28 shrubs are also included within this template. Type 2 plantings will be utilized/implemented along 1,680 linear feet (14% of the proposed plantings) of the Facility.

- Expected growth heights (depending on the specific tree or shrub species) are between 5 to 15 feet at 5 years. However, fully mature heights of the evergreen tree species may reach 40 to 60 feet high.

- A grass seed mix using native/indigenous warm and cool season grasses was developed especially for the areas under and around the solar panels and is considered favorable for wildlife habitat and sustainable growth. The seed mix will provide a groundcover that minimizes erosion concerns, does not pose any shading issues, and is manageable year-round.

- A native pollinator seed mix is intended to be sown in a designated 10-foot-wide area located outside of the panels, and around the perimeter of the proposed landscape mitigation buffer. Native flowers in the mix will provide an attractive display of colors during the growing season.
- It is important to note that an annual maintenance program will be provided to ensure that proper care and attention is given to the proposed plantings once they have been installed. Maintenance will include, but may not be limited to, selective pruning, mowing, and monitoring of invasive species.
- Due to the siting of the collection substation, vegetative mitigation was not deemed necessary.

10.4 Lighting Plan

Lighting is proposed at the Facility substation and all gates. These lights are only intended for security, safety, and maintenance purposes. Details regarding the Facility's Lighting Plan, such as the type, number, location, elevation of exterior fixtures is included in the Design Drawings contained in Exhibit 5 Appendix 1. This plan was developed to minimize fugitive light while meeting lighting standards established by the National Electric Safety Code (NESC). The proposed lighting also complies with OSHA requirements, as proper illumination will be provided for all working spaces around the electrical equipment. All of which has been designed so that control points or persons making repairs will not be endangered by "live parts" or other equipment.

Within the collection station, lights are located on such structures as the takeoff, control house, CT metering, and three pole mounted locations - two of which are located near entries to the substation. All lighting will be capable of manual activation/shut-off with most facing downward (60-75 degrees) to minimize potential impacts to the surrounding public. Lighting has been designed to provide an average of 2 foot-candles[19], to eliminate unnecessary light trespass beyond the substation. Light fixtures will be mounted at a height not to exceed 15 feet above finished grade and will not be illuminated during unoccupied periods. Full cut-off fixtures and task lighting will be used wherever feasible, as specified in the Lighting Plan.

Lights will also be placed at all entry gates. All lighting will be capable of manual activation/shut-off and installed facing downward (60-degrees) to minimize potential impacts to the surrounding public. Lighting at these locations have been designed to provide an average of 2 foot-candles,

[19] 2 foot candles is equivalent to 22 lux where 1 lux is 1 lumen per square meter - 2 foot candles are equivalent to 22 lumens per square meter.

to eliminate unnecessary light trespass. Light fixtures will be mounted on poles at a height not to exceed 15 feet above finished grade. Full cut-off fixtures and task lighting will be used wherever feasible, as specified in the Lighting Plan.

11.0 VISIBILITY DURING CONSTRUCTION

Potential visibility of construction activities is anticipated to be temporary in nature. Construction of a typical facility normally involves the following major undertakings: building/upgrading roads; constructing laydown areas; removing necessary vegetation from areas of construction; transporting components and other materials and equipment to the Facility Site; assembling the solar panels; constructing ancillary structures (e.g., collection substation, fences); and installing power-conducting cables (typically buried). During this time there will be an increase in vehicular traffic, equipment, and workers seen within the Facility Site and the immediate surrounding area; construction may result in the temporary increase of dust and emissions. All of this is typical of major construction projects.

Construction activities will vary in frequency and duration. There may be periods of intense activity followed by periods with less activity and associated visibility will vary in accordance with construction activity levels.

12.0 CUMULATIVE VISUAL IMPACT ANALYSIS

As required under §900-2.9(a), the Applicant has considered potential cumulative visual impacts. The Applicant reviewed publicly available information to identify other proposed development, including renewable energy facilities proposed or constructed by others within the VSA. One project, the Convergent Energy+ Power Project (CEPP) was identified within the two-mile VSA. The CEPP is a 35.03 MWdc solar project, consisting of five separate arrays, and includes 69 MWh of battery storage. The CEPP was constructed in 2021 and is located on 236 acres of land. The CEPP fronts County Route 179/Evans Street, with its closest fence line located approximately 1,600 feet west of the Facility.

Based on the completed screened viewsheds, it does not appear that the Facility will be visible immediately adjacent to the CEPP, on the property hosting the CEPP, nor along or west of County Route 179/Evans Street. As a result of the vegetation surrounding the CEPP property, and as witnessed in the field, it is anticipated that visibility will be limited. Views of the CEPP is likely for a limited number of adjacent residents, travelers along a short segment of County Route 179/Evans Street, and from Memorial Park which is adjacent to the parcel of land host to the Facility. In addition, there may be filtered views of the CEPP along a short section of NYS Route 12E where there is a lack of commercial/residential structures, and the vegetation along the south end of the CEPP host property is thin. Specifically, this will result in sporadic views between Memorial Park and County Route 179/Evans Street. Should views of the CEPP be noticed while navigating NYS Route 12E, they will be transient in nature and of limited duration, should it be noticed or comprehended at all.

The photos below showing two views of the CEPP were taken by TRC on May 24, 2021

East view of the CEPP from County Route 179/Evans Street.

North view of the CEPP from the end of Memorial Park.

Due to the limited nature of potential visibility for either project independently, these in theory will likely be visible as separate developments and will not have a cumulative impact within the same view. It is anticipated that should both the CEPP and Facility be visible at separate locations while traveling along a public roadway (i.e., Route 12E), they will be seen separately, and a cumulative visual impact will not occur.

Overall, it appears that due to the siting of the Facility and CEPP, visibility is restricted as both projects take advantage of existing vegetation, such as the surrounding woodlands and hedgerows, as visual barriers as much as possible. In combination of the siting and Facility mitigation, it would appear that cumulative impacts are avoided and minimized to the extent practicable.

The only other project of this type proposed in the vicinity of the Facility is the Tracy Solar Energy Center, which is located approximately five miles from the Facility. This 119 MW project is being proposed by EDF Renewables and is generally located along NYS Route 180 just south of the Hamlet of LaFargeville in the Town of Orleans, Jefferson County. Based on the completed screened viewshed maps for the Facility and Tracy Solar Energy Center, submitted as part of the Section 94-c Application in January 2022 (Matter No. 21-00962), the distance between the two facilities, and intervening vegetation and topography visibility of this project would not occur in the same view as the proposed Facility, and vice versa. The Tracy Solar Project is currently going through the 94-c application process.

13.0 SUMMARY CONCLUSIONS – VISUAL IMPACTS DURING OPERATION

The information in this VIA provides an understanding of the visual relationship between the Facility and its surrounding landscape. To achieve this, a series of viewshed maps, photographic simulations, and line-of-sight profiles were developed and analyzed. The following provides a summary of the findings and impacts related to the Facility.

1. The screened viewshed map (Figure 3 of Attachment 2) of the solar panels illustrates the geographic area where visibility is likely to occur. This realistic scenario objectively shows that there is minor visibility expected (14.05%) within the VSA. The majority of which is predicted to occur within the Foreground distance zone where 11.54% of the potential visibility will occur.

2. As seen on Figures 2 and 3 of Attachment 2 visibility of the solar panels will occur on properties belonging to participating landowners. The Facility Site hosts approximately 1.38 square miles or 883 acres of visibility and is comprised of land that is currently leased or owned by the Applicant. Visibility within these lands account for 30.1% of the total identified visibility.

3. Distance zones and landscape similarity zones were identified in the two-mile VSA.

    a. Two distance zones were identified, Foreground (up to 0.5 miles) and Middleground (0.5 to 2 miles) for use in the VIA. The Foreground distance zone has the highest percentage of potential visibility at 11.54% of the total VSA acreage; there is a significant decrease of visibility found in the Middleground as only 2.51% will have views of the Facility. This can be expected as there is a higher concentration of visibility within close proximity of the Facility Site and the existing forested areas (including applicable hedgerows) provide effective screening as the viewer moves further away thus obscuring many outward views. To further describe the effect of distance on visibility, a background distance zone was described, but it fell outside the VSA.

    b. There are five landscape similarity zones within the VSA. The zones consisting of the most land include the Agricultural and Forested zones at 58.94% (12,320 acres) and 34.45% (7,200 acres), respectively.

    c. It is expected that the Agricultural LSZ will have the greatest potential visibility caused by the Facility; actual percent of visibility within this LSZ is 13.17%. The remaining LSZ's and anticipated visibility include: Forested with 0.64%, Transportation Corridor with 0.19%, Water with 0.03%, and Village at 0.0021%.

4. The screened viewshed analysis shows that the proposed substation and interconnect will not be visible from most areas within the VSA. Section 9.1.4 discusses visibility solely from

station components in the absence of the panels. Most visibility occurs within the Foreground distance zone - 4.72% of a total 6.07% found within the VSA. The geographic area where these components are visible generally occur on lands within the Facility Site and areas already containing views of the solar panels.

5. The substation has been sited more than 1,480 feet from Case Road. With the exception of the seasonal snowmobile trails, Case Road is likely to have the most year-round visibility of the substation. In both instances it will be seen in conjunction with, and compatible with the Facility and adjacent (existing) 115kV transmission line, thus minimizing contrast in land uses.

6. It is anticipated that seven listed visual resources will have views of the Facility. These include the NYS Route 12E / Great Lakes Seaway Trail, the C5J snowmobile trail, the G. Spence Donaldson Memorial Field, the Lyme Rod and Gun Club, the Village of Chaumont, Morris Tract Road, and County Route 125.

   Visibility of the Facility will be minimized through the use of proposed landscape plantings (e.g., G. Spence Donaldson Memorial Field [see below for example]) and/or siting (e.g., separation of NYS Route 12E / Great Lakes Seaway Trail and the Facility [see below for example]); as well as other factors such as distance (e.g., Lyme Rod and Gun Club) and/or duration of view (e.g., views along the C5J snowmobile trail will be short).

G. Spence Donaldson Memorial Field – Image illustrates the screening provided by the proposed mitigation landscape plan (see Attachment 5 for the set of simulations from this location).

NYS Route 12E / Great Lakes Seaway Trail – Image illustrates the effect of distance and the existing hedgerow has on visibility of the Facility (see Attachment 5 for the set of simulations from this location).

Views of the Facility from within the Village are screened as a result of existing vegetation and structures. However, there is a possibility for visibility, mostly discreet, to occur at the NYS Route 12E municipal boundary and along the northeast Village boundary that bisects Morris Tract Road.

7. Users of local roadways adjacent to the Facility may experience transient views that could range from partial to open. These views will be reasonably short in duration, thus the time available to observe the Facility may be limited. In some instances, the ability of commuters to focus on individual landscape components will be restricted, further minimizing visibility.

8. Due to the rural nature and landscape setting of the VSA, it is expected that the number of observers experiencing views considered to be of a long duration will be low. It is anticipated that the mitigation plan will significantly reduce visibility of the Facility from residential properties along Case Road.

9. Overall Facility contrast and visual effect will vary depending on the extent of panel visibility (partial or full), distance from the viewer, and if they are seen in the context of other existing modifications to the local landscape. In some instances, background vegetation seen behind the Facility minimizes visual contrast, as the panels are perceived to be visually absorbed by similar color and color value expressed by the background trees. Color differences between the Facility and the landscape may provide contrast but it will vary throughout the seasons and time of day.

10. There will be no interference with the general enjoyment of many of the identified recreational resources, as views of the Facility are not anticipated or will be limited. Three views along the NYS Route 12E/Seaway Trail were simulated and show that overall visibility will be minimal and are expected to be short in duration. Visibility will be minimized from NYS Route 12E due in part to an existing hedgerow and by maintaining the agricultural/vacant land between the roadway and Facility.

    However, the snowmobile trail running through the area will have a variety of views to the Facility but will also be seen within the context of the existing transmission line; views from the G. Spence Donaldson Memorial Field will be available, but the mitigation and seasonal play should minimize the overall number of potential observers.

11. Two line-of-sight profiles were undertaken to illustrate how or why the collection station and the Chaumont Historic District is or is not visible. Many open views along Case Road are possible and the (portion of) substation may be visible to those using or living along the roadway. The profile shows the substation relationship to the panels and provides an example of its distance from Case Road.

    A profile from the Historic District was also provided to illustrate the distance and existing screening between this resource (and the Village core) and the Facility.

12. Nine simulations had Part 1 Facility contrast ratings that are very weak to moderate. The weakest of the group was viewpoint 6 on Morris Tract Road. The simulation with the highest contrast rating of moderately strong was seen at viewpoint 49 at G. Spence Donaldson Memorial Field. This higher rating is due to the proximal location and unobstructed view to the Facility. In reviewing the Part 2 viewer sensitivity contrasts, nine

of the simulations were rated as weak to weakly moderate, the remaining three had a moderate rating, this was attributed to being along a designated scenic roadway.

With the inclusion of the landscape plantings, contrasts are likely to be softened and moderated as the trees and shrubs are more congruous with the existing environment, thus the Facility color and value contrasts are reduced.

13. In some instances, the most noticeable aspect of the Facility could be the removal of the existing tree stands. In this case, should there be sensitivity, it is anticipated that it will likely diminish over time due to continual exposure.

Other factors assessing the degree of visual change from the Facility can be considered including:

- Through the use of efficient solar panels, the Applicant is able to limit the amount of land required to achieve its objective of 100MW generating capacity. Additionally, solar facilities typically result in a minimal amount of ground disturbance thereby preserving the ability to use the land for agricultural purposes in the future following decommissioning.

- While the area surrounding the Facility may consist of many pastoral views, the characteristic of the landscape seen within the VSA is typical of what may be found in other areas of New York. Overall, the Facility will not impair regional landscape characteristics.

- The panels will not always be in an upright position as it is meant to track the sun. Therefore, during certain times of the day, the panels may appear in, or in a near horizontal configuration, thus resulting in an even lower profile.

- The Facility will not always appear as a dominant feature in a view contained within the VSA. This may be, in part, a result of the surrounding landscape (e.g., when the Facility is seen against large stands of vegetation), or the effect of the increasing distance between the Facility and viewer (e.g., as distance increases, the Facility may be seen as a smaller component in the overall view).

- The Applicant has utilized reasonable mitigation measures to the maximum extent practicable with respect to the overall design and layout of the Facility. This includes the proposed vegetative plantings that screens views to nearby residents.

- Visual clutter often is adversely perceived and commonly results from the combination of human-made elements that have differing shapes, colors, forms, patterns, or scales. Generally, solar facilities offer simple and uniform patterned that may be more visually consistent, as compared to a development consisting of mixed types and sizes of objects. However, this is not to diminish that these are man-made structures within agricultural fields.

- Aside from the low local road traffic (see Table 1), public areas in the vicinity to the Facility are not exceedingly high-use destination areas. This results in a lower number of individuals that could potentially view the Facility. One exception is the Chaumont Bay, while this may draw tourists, etc., visibility of the Facility is not anticipated from this resource.

- The Facility does not have an adverse effect on a known listed scenic vista and does not impact or degrade existing scenic resources.

- The Facility substation does not create a new source of substantial light that would adversely affect nighttime views in the area.

14.0 REFERENCES

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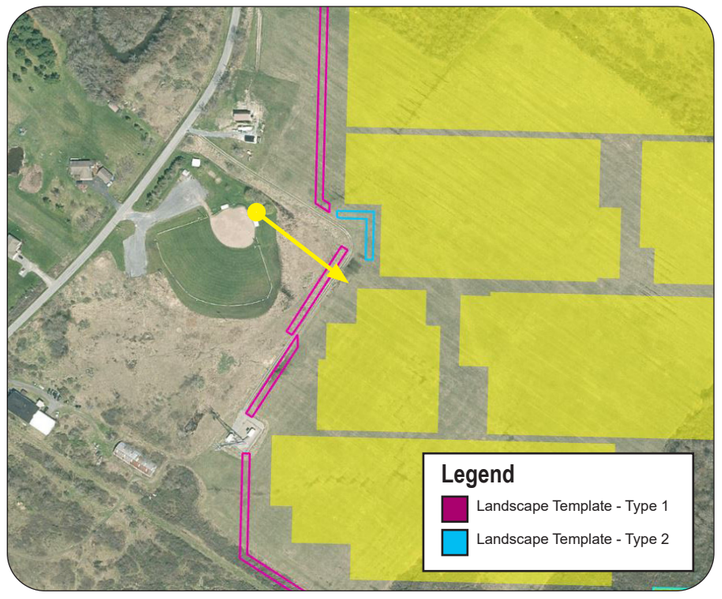
Attachment 5: Revised Photo Simulations and Line-of-Sight Profiles

Part 2 of 2

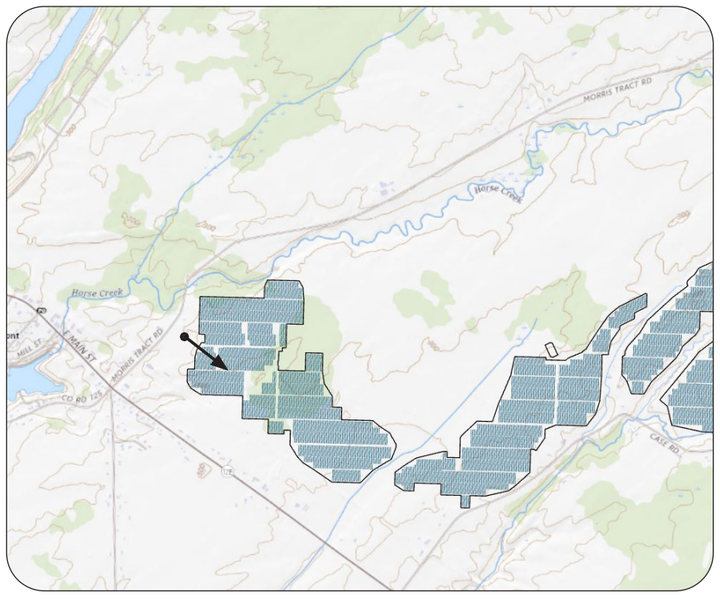
Existing Conditions

SE

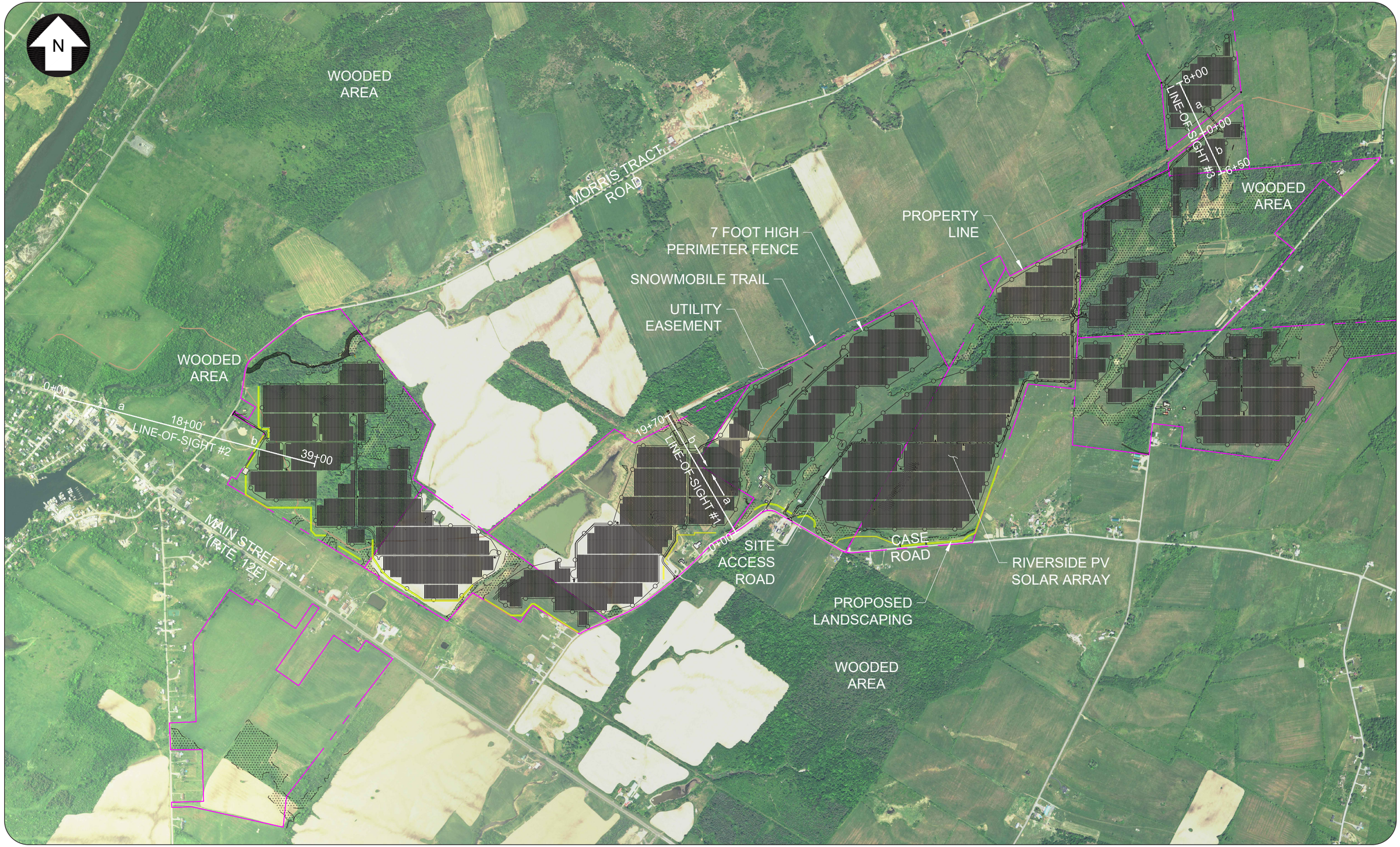
Viewpoint Location Aerial Map



Viewpoint Location Topographic Map



Viewpoint Coordinates	44.06621 -76.12041
Town	Lyme
Viewpoint Elevation (MSL)	304
Distance to Fence Line	342 ft
Direction of View	Southeast
Lens Focal Length	50 mm (Full Frame)
Date/Time of Photograph	1/5/2022, 11:40 AM

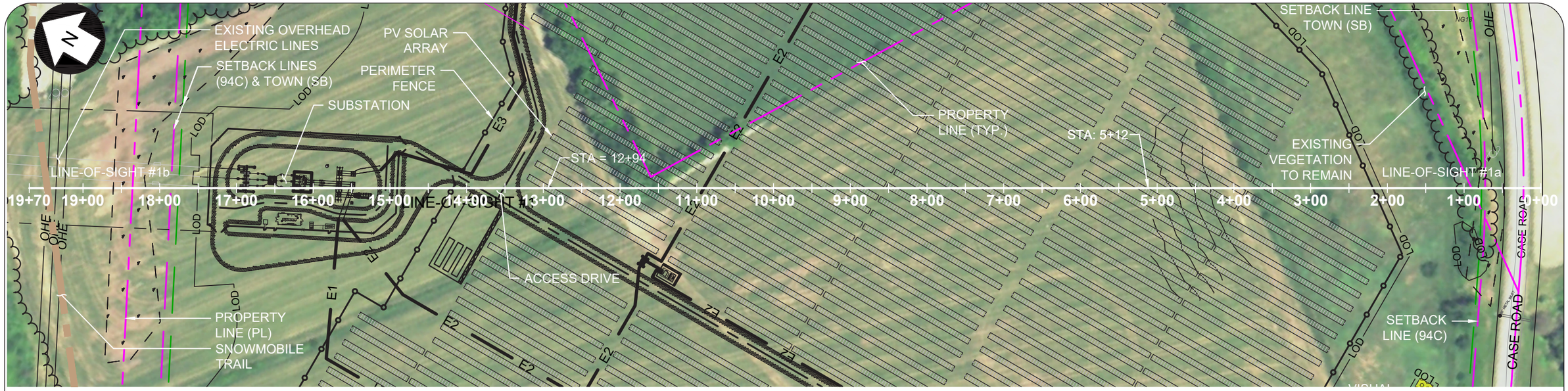


Line-of-Sight Profiles of Facility
Riverside Solar Project
Towns of Lyme & Brownville, NY

Overall Line-of-Sight Profile Plan

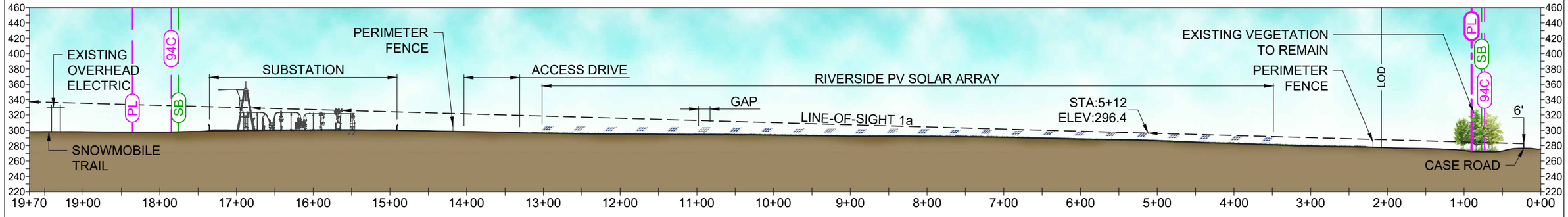
Rev. February 2022
Sheet 1 of 4

TRC



PLAN VIEW: LINE-OF-SIGHT #1 @ CASE ROAD (STA: 0+00 TO 19+70) & SNOWMOBILE TRAIL (STA: 19+70 TO 0+00)

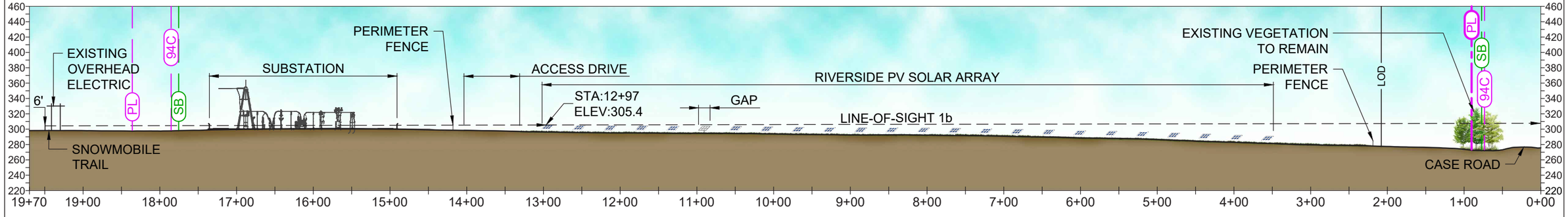
0 120' 240'



1a PROFILE VIEW: LINE-OF-SIGHT #1 @ CASE ROAD (STA: 0+00 TO 19+70) RIGHT TO LEFT

0 120' 240'

Horizontal and Vertical Scale - 1 : 1



1b PROFILE VIEW: LINE-OF-SIGHT #1 @ SNOWMOBILE TRAIL (STA: 19+70 TO 0+00) LEFT TO RIGHT

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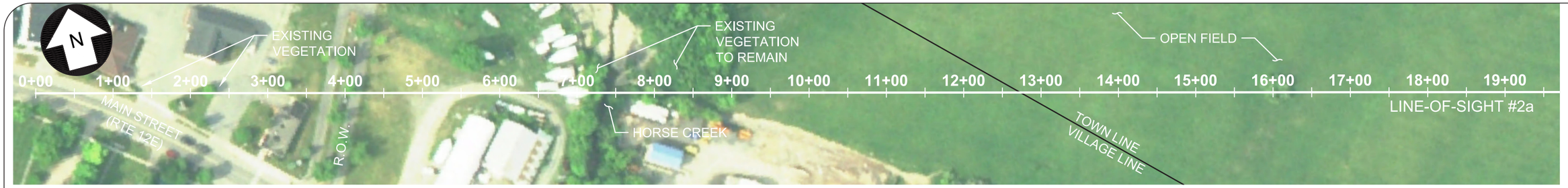
Horizontal and Vertical Scale - 1 : 1



PLAN VIEW: LINE-OF-SIGHT #2a @ MAIN STREET - RTE. 12E (STA: 0+00 TO 19+50)

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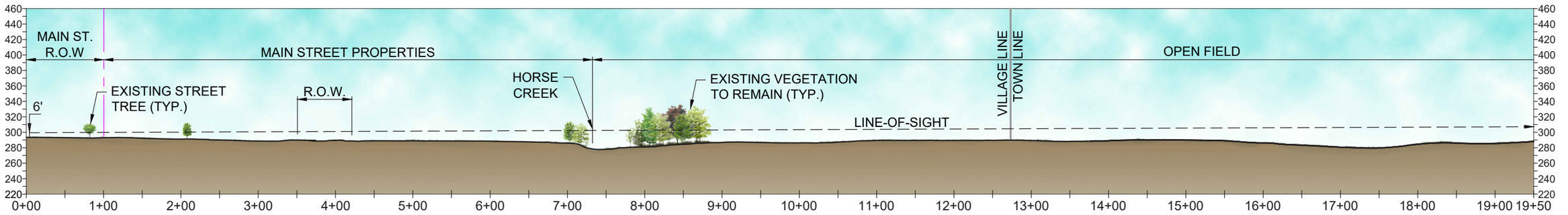

2a PROFILE VIEW: LINE-OF-SIGHT #2a @ MAIN STREET - RTE. 12E (STA: 0+00 TO 19+50)

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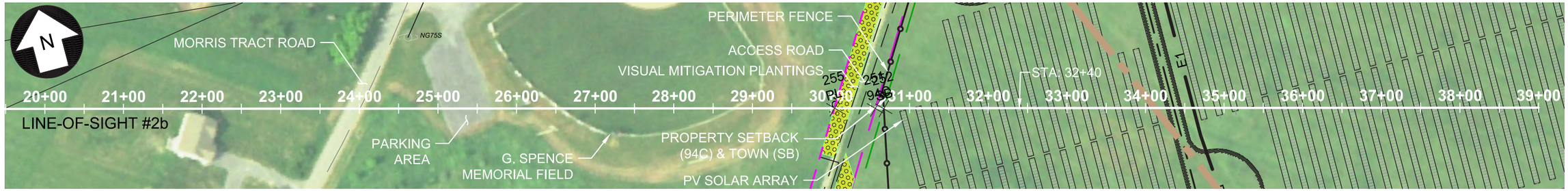

PLAN VIEW: LINE-OF-SIGHT #2b @ MAIN STREET - RTE. 12E (STA: 19+50 TO 39+00)

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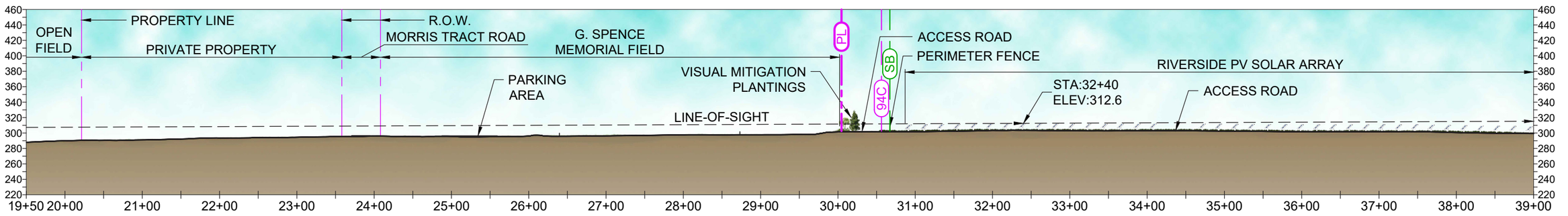

2b PROFILE VIEW: LINE-OF-SIGHT #2b @ MAIN STREET - RTE. 12E (STA: 19+50 TO 39+00)

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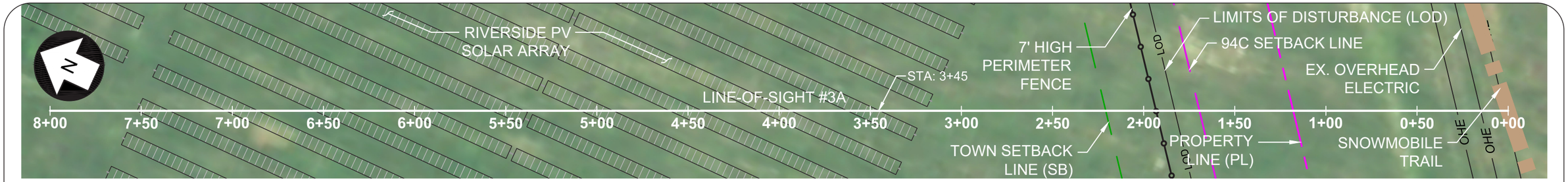
Horizontal and Vertical Scale - 1 : 1



PLAN VIEW: LINE-OF-SIGHT #3a @ SNOWMOBILE TRAIL (STA: 0+00 TO 8+00) RIGHT TO LEFT

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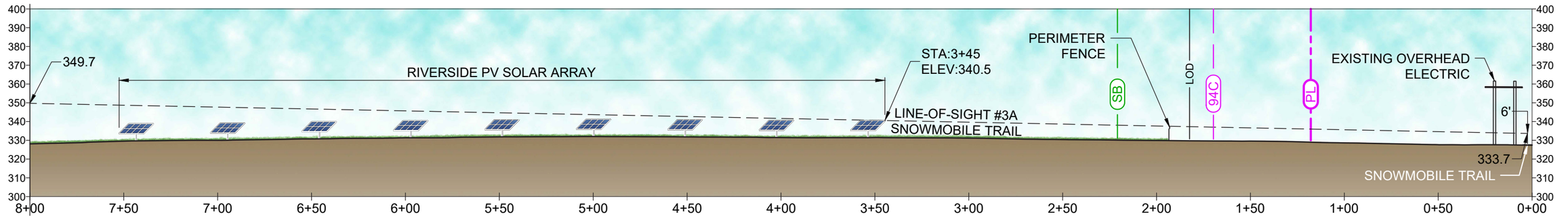
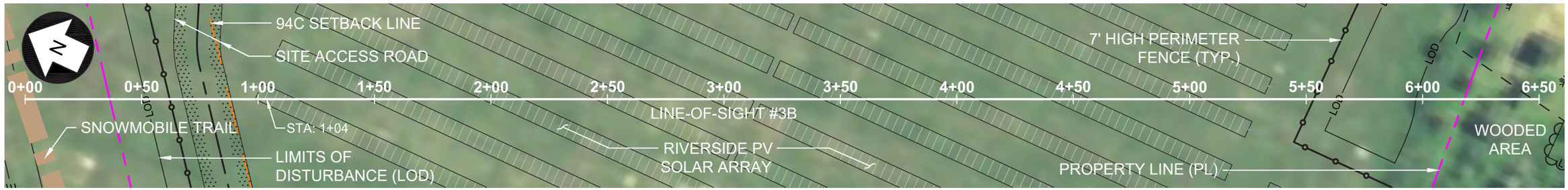


3a PROFILE VIEW: LINE-OF-SIGHT #3a @ SNOWMOBILE TRAIL (STA: 0+00 TO 8+00) RIGHT TO LEFT

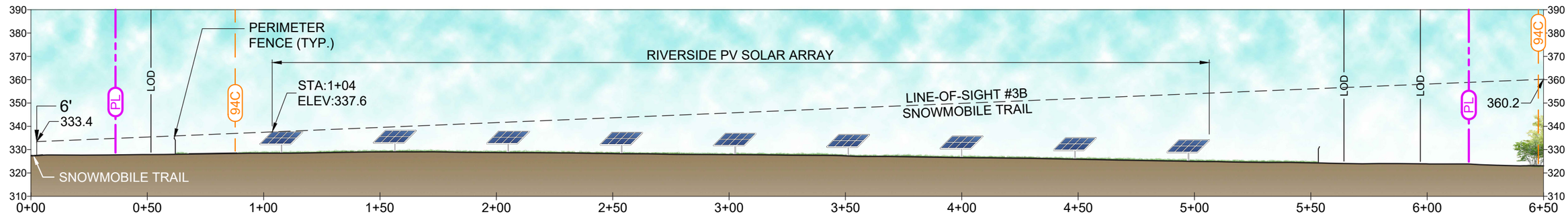
0 50' 100'

Horizontal and Vertical Scale - 1 : 1



PLAN VIEW: LINE-OF-SIGHT #3b @ SNOWMOBILE TRAIL (STA: 0+00 TO 6+50) LEFT TO RIGHT

0 40' 80'



3b PROFILE VIEW: LINE-OF-SIGHT #3b @ SNOWMOBILE TRAIL (STA: 0+00 TO 6+50) LEFT TO RIGHT

0 40' 80'

Horizontal and Vertical Scale - 1 : 1

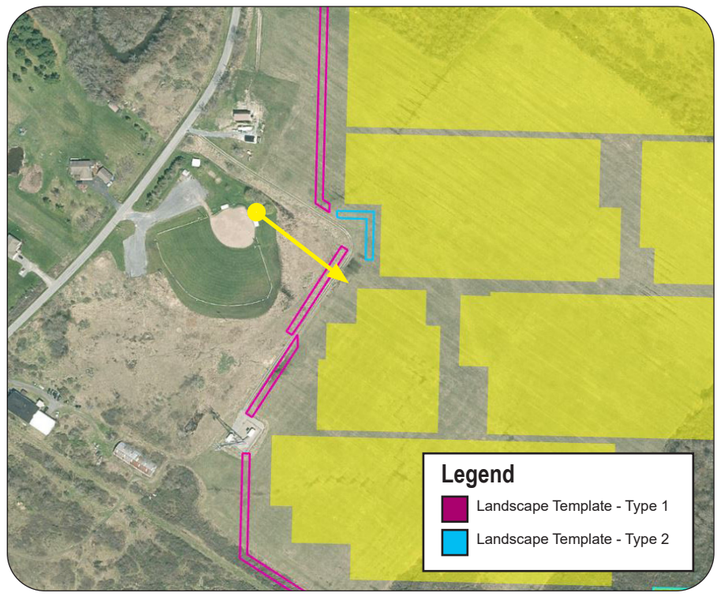
Attachment 5: Revised Photo Simulations and Line-of-Sight Profiles

Part 1 of 2

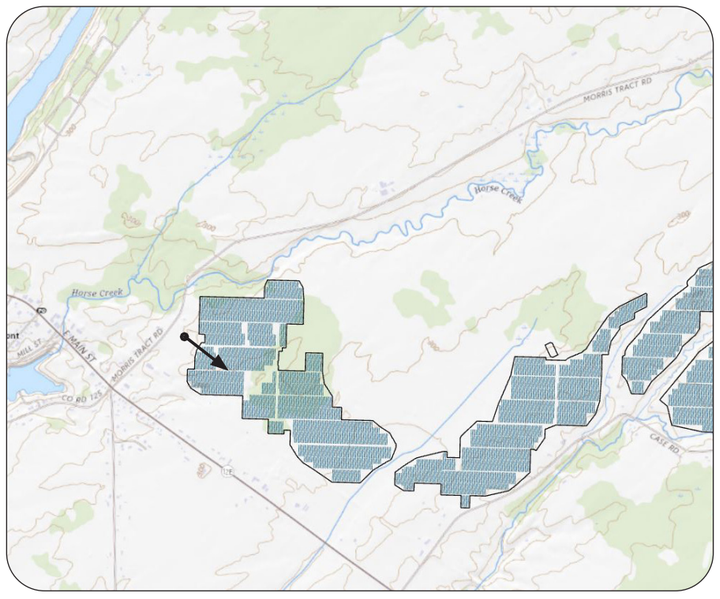
Existing Conditions

SE

Viewpoint Location Aerial Map



Viewpoint Location Topographic Map



Viewpoint Coordinates	44.06621 -76.12041
Town	Lyme
Viewpoint Elevation (MSL)	304
Distance to Fence Line	342 ft
Direction of View	Southeast
Lens Focal Length	50 mm (Full Frame)
Date/Time of Photograph	5/24/2021, 11:35 AM

Attachment 4:

Revised Electrical Layout

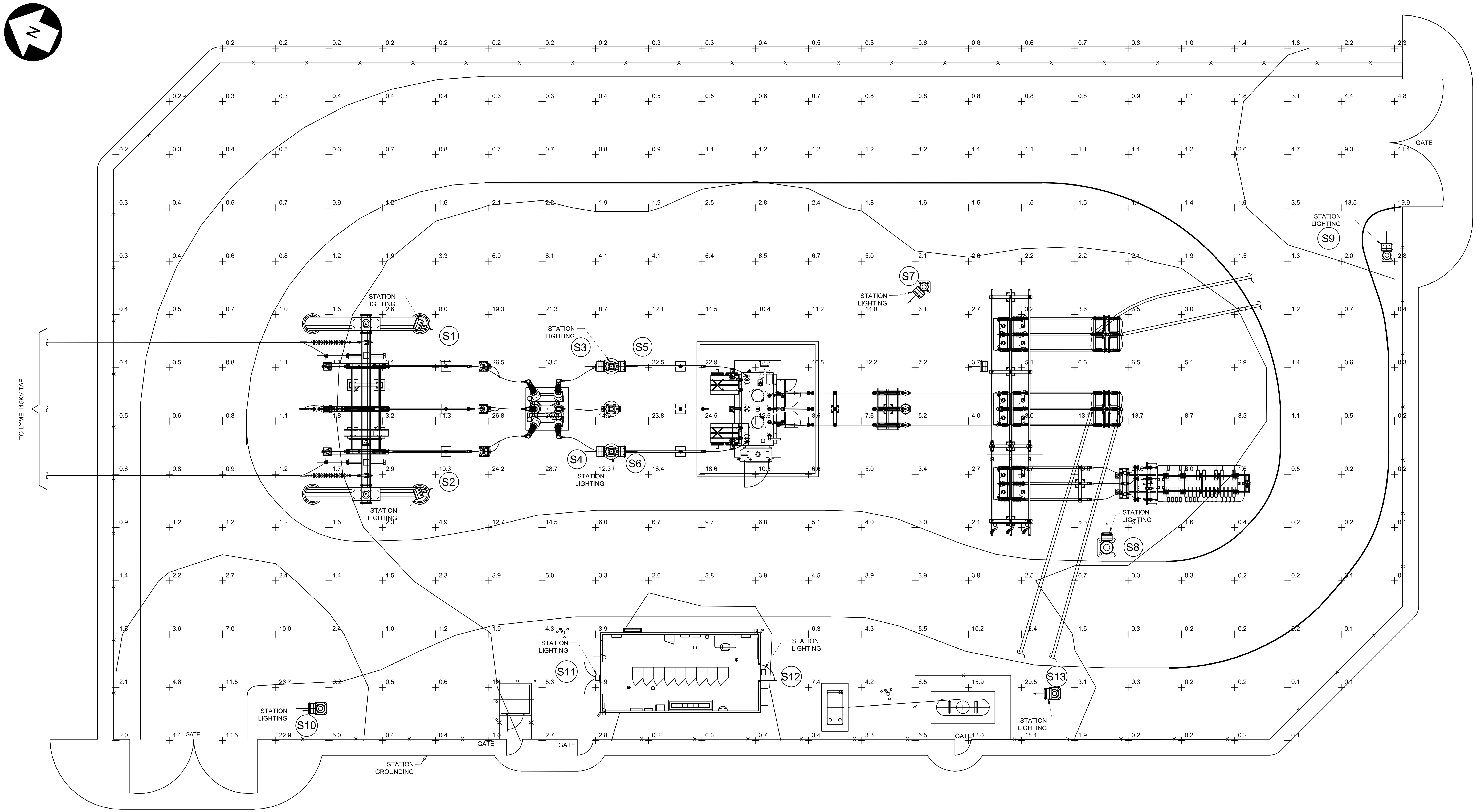
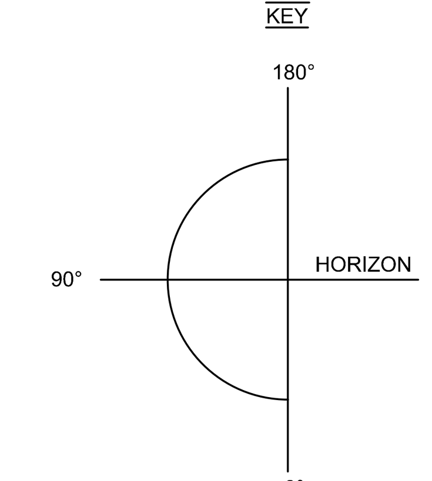


TABLE 1 - LIGHTING FIXTURE SCHEDULE								
FIXTURE							LAMP	PHOTO-ELECTRIC CONTROL
TYPE	WATTAGE	LIGHT SOURCE	VOLTAGE	WEIGHT (LBS)	LUMENS	NEMA CLASS	MANUFACTURER (GE) ITEM #	MANUFACTURER ITEM #
A1	25W	LED	120V	9.5	2,900	N/A	GE EVOLVE EWAS011A3730N	N/A
A3	150W	LED	120V	26	18,800	7X6	GE EVOLVE EFH101AA76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A
A5	297W	LED	120V	26	37,800	7X6	GE EVOLVE EFH101EE76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A

FIXTURE SCHEDULE				
LIGHT NO.	TYPE	TILT ANGLE	WATTAGE	VOLTAGE
S1	A3	75°	150W	120VAC
S2	A3	75°	150W	120VAC
S3	A3	60°	150W	120VAC
S4	A3	60°	150W	120VAC
S5	A3	60°	150W	120VAC
S6	A3	60°	150W	120VAC
S7	A3	75°	150W	120VAC
S8	A5	75°	297W	120VAC
S9	A3	45°	150W	120VAC
S10	A3	45°	150W	120VAC
S11	A1	0°	25W	120VAC
S12	A1	0°	25W	120VAC
S13	A3	45°	150W	120VAC

TILT KEY



AVERAGE = 4.5 F.C.
MAX= _ _ _ 36.0 F.C.
MIN = _ _ _ _ 0.1 F.C.

NOTES:

1. STATION LIGHTING IS COMPRISED OF (2) 25W, (10) 150W, AND (1) 297 W, 120V AC LED FLOODLIGHTS.
2. LIGHT FIXTURES TO BE MOUNTED ON INDICATED STRUCTURES 15' ABOVE FINISHED GRADE. THE FIXTURES SHALL BE AIMED AS SHOWN ON THE DRAWING AND HAVE A TILT ANGLE BASED ON THE FIXTURE SCHEDULE.
3. YARD CONTOURS ARE 2.0 FT CANDLES (F.C.) FOR THIS STATION. 2 FT CANDLES IS THE EQUIVALENT OF 22 LUMENS PER SQUARE METER.
4. FLOODLIGHTS INSTALLED WITH TOP AND SIDE VISORS ACHIEVE FULL CUTOFF REQUIREMENT (0 F.C.) ABOVE FIXTURE.

Dig Safely. New York Call 811 before you dig

PRELIMINARY
NOT FOR CONSTRUCTION

aes
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106-2749
(801) 679 - 3500

TRC
249 Western Avenue
Augusta, ME 04330

PE STAMP:

STATE OF NEW YORK CHARLES PASCALE 072988 LICENSED PROFESSIONAL ENGINEER

KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
1	08/05/2021	ISSUED FOR PERMIT
2	09/10/2021	ISSUED FOR PERMIT
3	01/21/2022	ISSUED FOR PERMIT

PROJECT TITLE:

RIVERSIDE SOLAR COLLECTION SUBSTATION 115KV-34.5KV

PROJECT LOCATION:

TOWNS OF LYME & BROWNVILLE JEFFERSON CO., NY

SHEET TITLE & DESCRIPTION:

GENERAL ARRANGEMENT

LIGHTING PLAN

PROJ NUM:	422208
DES:	D. FARRELL
DWN:	D. FARRELL
CHK:	C. PASCALE
APV:	C. PASCALE
DATE:	04/15/2021

SCALE AT 22" x 34":
0 4' 8' 16' 24'
3/32" = 1'-0"

SHEET NO: HV-P.13.01 REV: 3

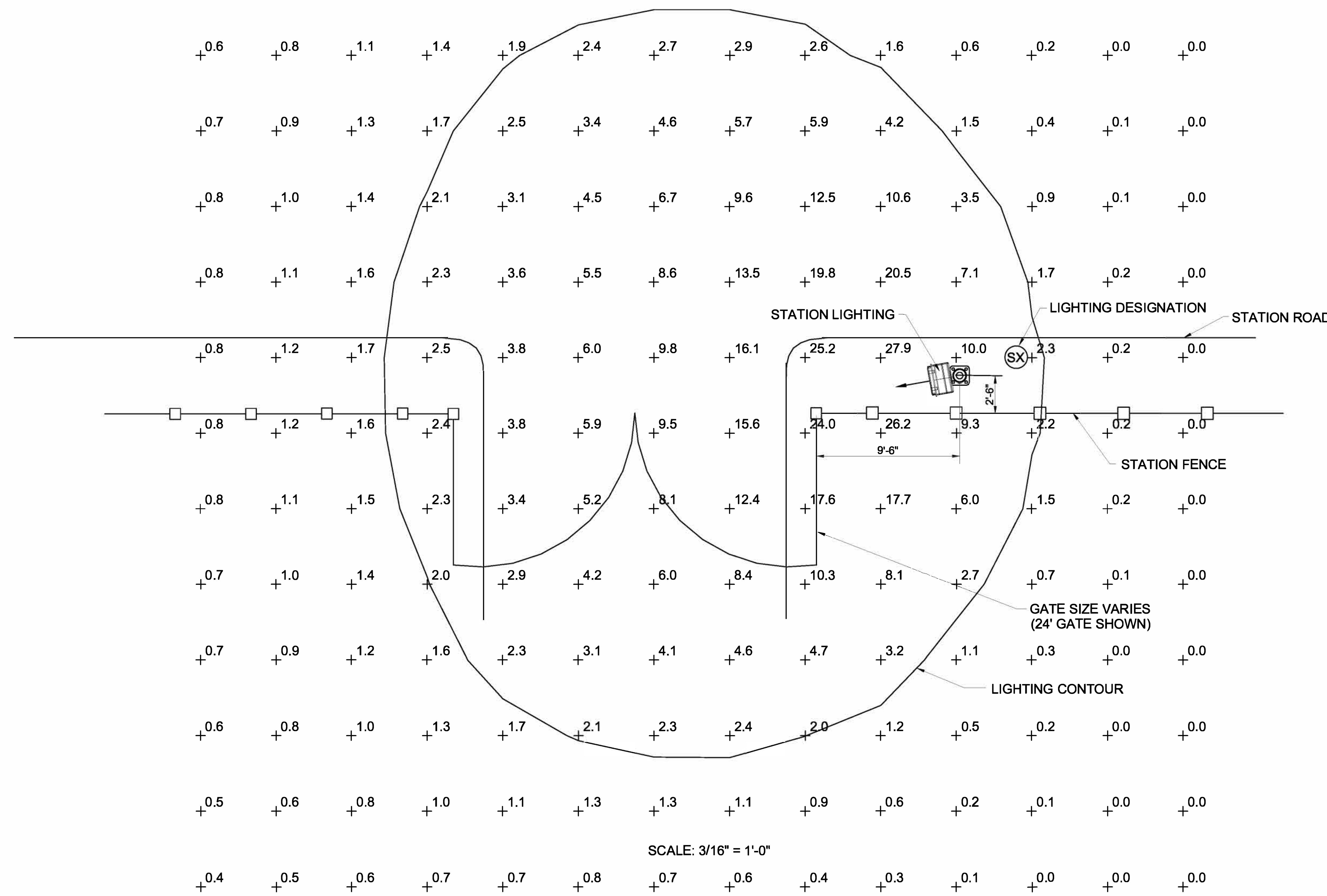
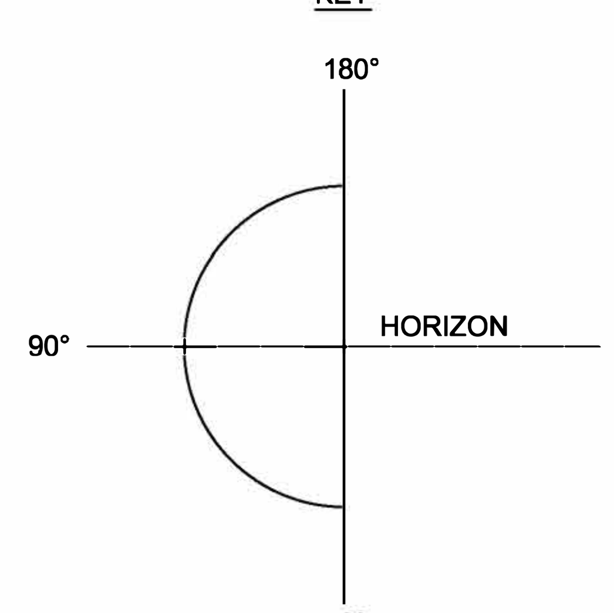


TABLE 1 - LIGHTING FIXTURE SCHEDULE (NOTE 2)

FIXTURE								LAMP	PHOTO-ELECTRIC CONTROL
TYPE	WATTAGE	LIGHT SOURCE	VOLTAGE	WEIGHT (LBS)	LUMENS	NEMA CLASS	TILT ANGLE	MANUFACTURER (GE) ITEM #	MANUFACTURER ITEM #
A3	150W	LED	120V	26	18,800	7X6	60°	GE EVOLVE EFH101AA76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A

TILT KEY



NOTES:

1. ENTRANCE GATE LIGHTING IS COMPRISED OF (1) 150W,120V AC LED FLOODLIGHT PER GATE. THIS GATE DETAIL IS APPLICABLE TO ALL PV YARD AND O&M YARD GATES. (12) PV YARD GATES AND (1) O&M YARD GATE. A TOTAL OF (13) FIXTURES ARE REQUIRED.
2. LIGHT FIXTURES TO BE MOUNTED ON INDICATED STRUCTURES 15' ABOVE FINISHED GRADE. THE FIXTURES SHALL BE AIMED AS SHOWN ON THIS DRAWING AND HAVE A TILT ANGLE BASED ON THE FIXTURE SCHEDULE.
3. LIGHTING CONTOUR IS 2 FT CANDLES (F.C.) AVERAGE FOR THIS YARD.
4. FLOODLIGHTS INSTALLED WITH TOP AND SIDE VISORS ACHIEVE FULL CUTOFF REQUIREMENT (0 F.C.) ABOVE FIXTURE.
5. GATE LIGHTS SHALL BE CAPABLE OF MANUAL SHUT-OFF.

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STATE OF NEW YORK — CHARLES PASCALE — 072988 — LICENSED PROFESSIONAL ENGINEER

KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
1	08/05/2021	ISSUED FOR PERMIT
2	09/10/2021	ISSUED FOR PERMIT
3	01/21/2022	ISSUED FOR PERMIT
4	02/03/2022	ISSUED FOR PERMIT

PROJECT TITLE:

RIVERSIDE SOLAR PROJECT

PROJECT LOCATION:

TOWNS OF LYME AND BROWNVILLE, NY

SHEET TITLE & DESCRIPTION:

PV ENTRANCE GATE LIGHTING

LIGHTING DETAIL

PROJ NUM:	422208
DES:	D. FARRELL
DWN:	D. FARRELL
CHK:	C. PASCALE
APV:	C. PASCALE
DATE:	05/21/21

SCALE AT 22" x 34": 0 2' 4' 8' 12'

3/16" = 1'-0"

SHEET NO: PV-C.08.03 REV: 4

Evolve® EFH Series

LED Flood Light

CUSTOMER NAME _____

Project Name _____

Date _____ Type _____

Catalog Number _____

The Evolve® LED High Output Flood Light is our high-lumen solution to efficiently illuminate building facade, flag poles, billboard signage and many more traditional flood applications. Designed to replace 250W-400W HPS and 400W-1000W Metal Halide Flood Lights

CONSTRUCTION

Housing:	Aluminum die cast enclosure. Integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze Gray, White (RAL & custom colors available) Optional = Coastal Finish
Weight:	35 lbs (15.9 kgs)

OPTICAL SYSTEM

Lumens:	18,000 - 39,000
Distribution:	6x5, 6x6, 7x6, 7x7
Efficacy:	115 -140 LPW
CCT:	3000K, 4000K, 5000K
CRI:	≥70

ELECTRICAL

Input Voltage:	120-277V, 277-480V & 347-480V
Input Frequency:	50/60 Hz
Power Factor (PH):	> 90% at rated watts
Total Harmonic Distortion (THD):	< 20% at rated watts

SURGE PROTECTION

TYPICAL (120 STRIKES)		
6kV/3kA*	☐ 10kV/5kA*	☐ 20kV/10kA*

*Per ANSI C136.2-2015

LUMEN MAINTENANCE

Projected Lxx per IES TM-21-11 at 25°C

Lumen Codes	Distribution	LXX(10K) @ Hours		
		25,000 HR	50,000 HR	60,000 HR
AA, BB, CC, DD, EE	65, 66, 76, & 77	L95	L91	L90

Note: Projected Lxx based on LM80 (= 10,000 hour testing). Accepted Industry tolerances apply to initial luminous flux and lumen maintenance measurements

LUMINAIRE AMBIENT TEMPERATURE FACTOR

Ambient Temp (°C)	Initial Flux Factor	Ambient Temp (°C)	Initial Flux Factor
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

RATINGS

Operating Temperature:	-40° C to 50° C
Vibration:	3G - Trunnion Mount per Per ANSI C136.31-2010:
LM-79:	Testing in accordance with IESNA Standards

CONTROLS

Dimming:	Standard - 0-10V Optional - DALI (Option U)
Sensors:	Photo Electric Sensors (PE) available LightGrid and Daintree Compatible

WARRANTY

☐ 5 Year (Standard)

GE current
a Daintree company

UL 1598 for WET LOCATIONS

IP66 IK08

Evolve® EFH Series

LED Flood Light

Catalog Logic

CUSTOMER NAME

Project Name ____________________

Date ____________ Type ____________

Catalog Number ____________________

Ordering Information

EFH1 01 _ _ _ 7 _ _ _ _ _

PRODUCT ID	GEN	VOLTAGE	OPTIC CODE	DISTRIBUTION[3]	CRI (MIN)	CCT	DIMMING	CONTROLS	MOUNTING	COLOR	OPTIONS
E= EVOLVE	01	0=120-277[1]	AA= 20,000lm	65 = NEMA 6x5	7 = 70 (min)	30= 3000K	A = ANS 136.41 7-Pin Receptacle[4]	A = No Control	K1 = Knuckle Slipfitter: For 1.9 in. - 2.3 in OD Tenon[6]	BLCK = Black	F= Fusing
F = Flood		H = 347-480V[1]	BB= 27,000lm	66 = NEMA 6x6		40= 4000K	D = No receptacle, with external dimming 18/2 3 ft cable	D = Shorting Cap[5]	K2 = Knuckle Slipfitter: For 1.9 in. - 2.3 in OD Tenon[2]	DKBZ = Dark Bronze	H = Motion Sensor [9]
H1 = High Output			CC= 30,000lm	76 = NEMA 7x6		50= 5000K	N = No PE Receptacle & Non Dimmable	E = ANSI C136.41 7-pin with non-Dimming PE Control[5]	S1 = Knuckle Slipfitter: For 2.3 in - 3.0 in OD Tenon[6]	GRAY = Gray	H2 = Daintree enabled motion sensor[8,9]
		1 = 120	DD= 35,000	77 = NEMA 7x7			P = ANSI 7-Pin Receptacle with external dimming 18/2 3 ft cable[4]		S2 = Knuckle Slipfitter: For 2.3 in. - 3.0 in OD Tenon[2]	WHTE = White	L = Tool-Less Entry
		2 = 208	EE= 39,000						T1 =Trunnion[2]		M = NOM31[15]
		3 =240							V1 = Knuckle Wall Mount[6]		P = Prewired with 6 ft #14/3 cable
		4 = 277									R = Optional Secondary Enhanced SPD
		D = 347									T = Optional Secondary Extreme SPD
		5=480									U = DALI Programmable[7,8]
											V = 3 Position Terminal Block
											V1 = Variable output via Field Adjustable Module
											Y = Coastal Finish[10]
											XXX = Special Options

[1] Not Available with Fusing
[2] Supplied with 14/3 3ft power cable
[3] Nominal IES Type classing subject to typical variation, individual units may differ.
[4] Restricted aiming angle of 0-45°
[5] Can only be ordered with "A" or "P" Dimming Options
[6] Supplied with leads
[7] Compatiable with LightGrid System
[8] Not available in 347V, 480V OR 347-480V
[9] Only available in K1 or S1 mount
[10] Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
[15] Contact Manufacturer

For additional information on EFH files, please click one of the following links:

Non-Shielded | Shielded

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Evolve® EFH Series

LED Flood Light

Spec Tables

CUSTOMER NAME

Project Name _____

Date _____ Type _____

Catalog Number _____

OPTIC CODE	DIST CODE	CLASSIFICATION	TYPICAL INITIAL LUMENS			TYPICAL SYSTEM WATTAGE	3000K	
			3000K	4000K	5000K	120-277 & 347-480V	120-277V	347-480V
AA	77	7x7	18900	19300	19500	150	EFH101_AA77730	
BB			26300	28600	27100	194	EFH101_BB77730_	
CC			29100	29700	30000	218	EFH101_CC77730_	
DD			34000	34700	35000	266	EFH101_DD77730_	
EE			37900	38700	39000	297	EFH101_EE77730_	
AA	76	7x6	18500	18800	19000	150	EFH101_AA76730	
BB			25700	26200	26500	194	EFH101_BB76730_	
CC			28400	29000	29300	218	EFH101_CC76730_	
DD			33200	33900	34200	266	EFH101_DD76730_	
EE			37100	37800	38100	297	EFH101_EE76730_	
AA	66	6x6	18200	18600	18800	150	EFH101_AA66730	
BB			25400	25900	26200	194	EFH101_BB766730_	
CC			28100	28700	29000	218	EFH101_CC66730_	
DD			32800	33500	33800	266	EFH101_DD66730_	
EE			36600	37400	37700	297	EFH101_EE66730_	
AA	65	6x5	17300	17700	17900	150	EFH101_AA65730	
BB			24100	24600	24800	194	EFH101_BB65730_	
CC			26700	27200	27500	218	EFH101_CC65730_	
DD			31200	31800	32100	266	EFH101_DD65730_	
EE			34800	35500	35800	297	EFH101_EE65730_	

Not all products on this document are DLC qualified, please visit https://www.designlights.org/search/

Evolve® EFH Series

LED Flood Light

Photometric Plots

CUSTOMER NAME

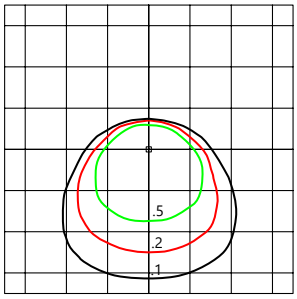
Project Name _____

Date _____ Type _____

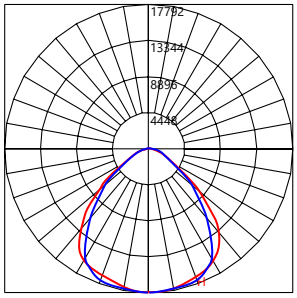
Catalog Number _____

77-EE

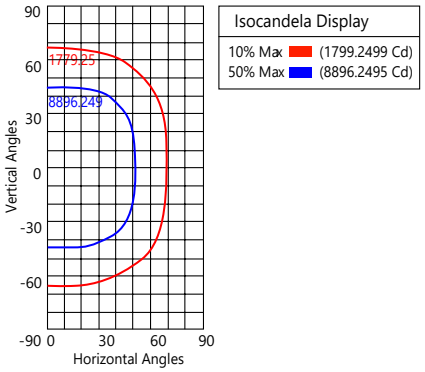
38,700 Lumens, 4000K
EFH101_EE77740__.IES



- Mounting Height at 35'
- 45° Tilt Initial Footcandle at Grade



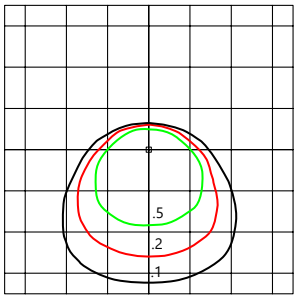
— Vertical Axel Candela Distribution
— Horizontal Axel Candela Distribution



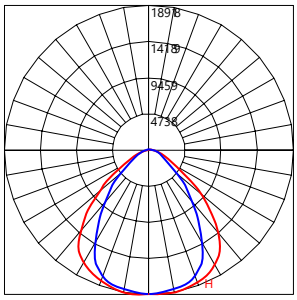
76-EE

37,800 Lumens, 4000K
EFH101_EE76740__.IES

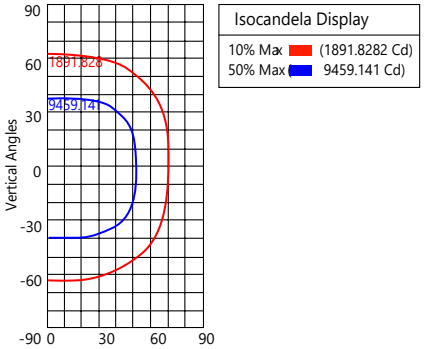
[3] This optic is designed to address a Roadway Photometric Application and may classify as Type II or III.



- Mounting Height at 35'
- 45° Tilt Initial Footcandle at Grade

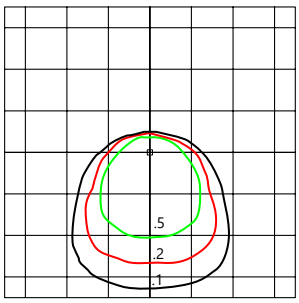


— Vertical Axel Candela Distribution
— Horizontal Axel Candela Distribution

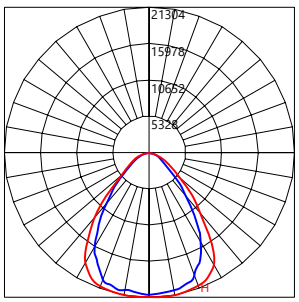


66-EE

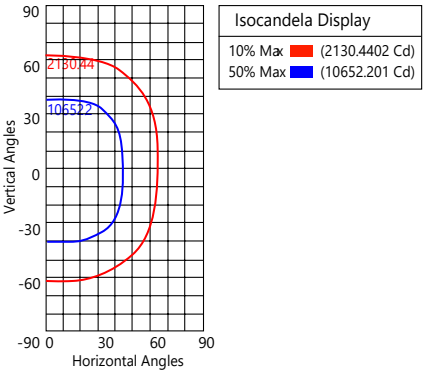
37,400 Lumens, 4000K
EFH101_EE66740__.IES



- Mounting Height at 35'
- 45° Tilt Initial Footcandle at Grade

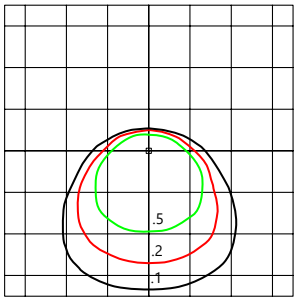


— Vertical Axel Candela Distribution
— Horizontal Axel Candela Distribution

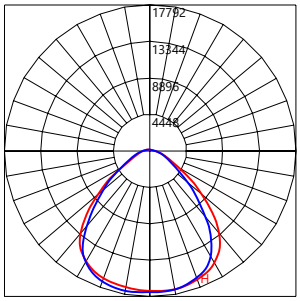


65-EE

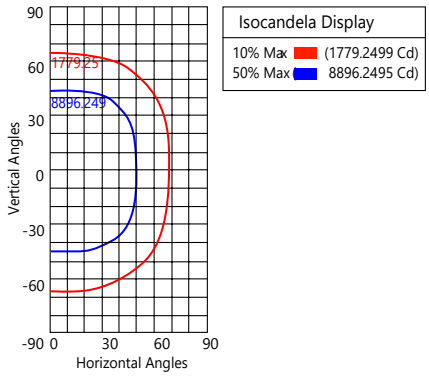
35,500 Lumens, 4000K
EFH101_EE65740__.IES



- Mounting Height at 35'
- 45° Tilt Initial Footcandle at Grade



— Vertical Axel Candela Distribution
— Horizontal Axel Candela Distribution



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Evolve® EFH Series

LED Flood Light

Motion Sensing

CUSTOMER NAME

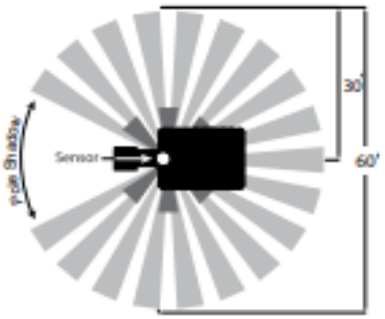
Project Name _____

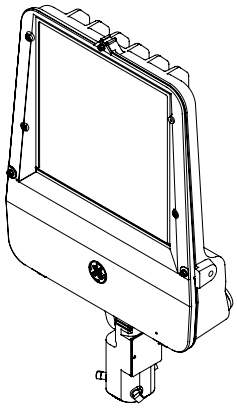
Date _____ Type _____

Catalog Number _____

H MOTION SENSING OPTION

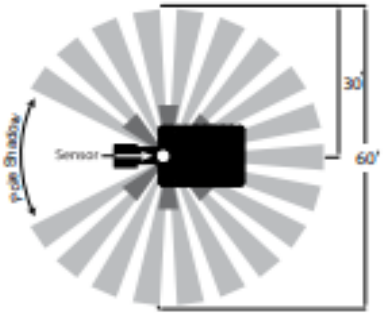
Recommended Mounting Height:	15-30′ (4.6-9.1m)
Coverage Radius:	15-20′ (4.6-6.1 m)
Lateral Coverage:	300 °
Total Harmonic Distortion:	≤ 20% at rated watts
Default Settings:	
Output:	Occupied - 100%/Unoccupied - 50%
PE Sensor:	None
Ramp/Fade:	5 Minutes/5 Minutes
Adds:	< 1W to fixture power rating
Field:	Programmable using FSIR-100 hand held programmer

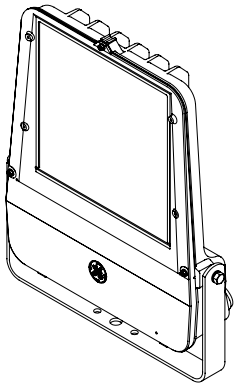




H2 MOTION SENSING OPTION

Recommended Mounting Height:	15-30′ (4.6-9.1m)
Coverage Radius:	15-20′ (4.6-6.1 m)
Lateral Coverage:	300 °
Total Harmonic Distortion:	≤ 20% at rated watts
Default Settings:	
Output:	Occupied - 100%/Unoccupied - 50%
PE Sensor:	Enabled
Ramp/Fade:	5 Minutes/5 Minutes
Requires Daintree Enterprise and wide area control (WAC)	





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Evolve® EFH Series
LED Flood Light

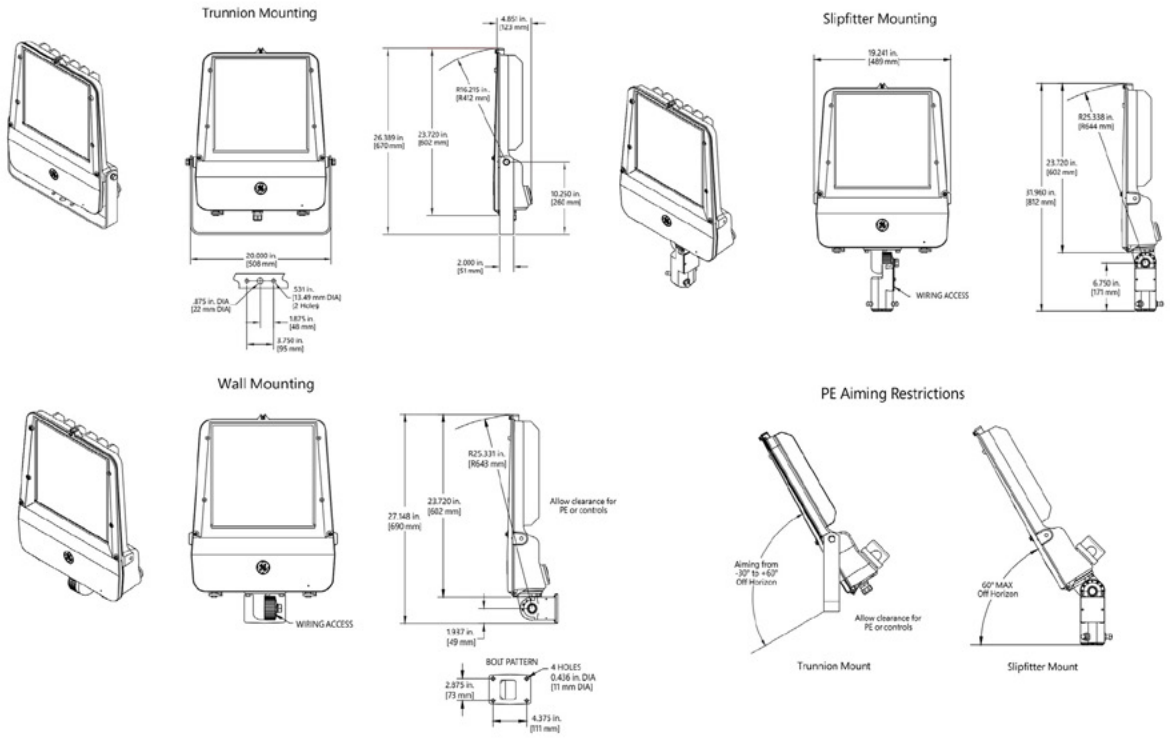
Mounting & Accessories

CUSTOMER NAME

Project Name _____

Date _____ Type _____

Catalog Number _____



MOUNTING

- Adjustable for 1.25 to 1 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

EFFECTIVE PROJECTED AREA

- – Vertical 3.51 sq ft (0.33 sq M) (aimed at horizon)
- – Tilted 1.79 sqft (0.17 sq M) (aimed down 45 degrees)

ACCESSORIES

SAP Number	Part Number	Description
93123552	WANSI - 277	ANSI 136.41 Dimming PE Danitree Enable, 105-305V
93123553	WANSI - 480	ANSI 136.41 Dimming PE Danitree Enable, 312-530V
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PECOTL	Standard 120-277V
28294	PEC5TL	Standard 480V
80436	PECDTL	Standard 347V
73251	SCCL-PECTL	Shorting Cap

SHIELDS

SAP Number	Part Number	Description
93033494	TSVBLCK-EFH	Top and Side Visor
93033655	TSVDKBZ-EFH	Top and Side Visor
93033493	TSVGRAY-EFH	Top and Side Visor
93033656	TSVWHTE-EFH	Top and Side Visor
93034260	VAN-EFH	Vandal Shield
93034259	WG-EFH	Wire Guard
93034837	BDABLCK-EFH	Barn Doors
93034838	BDADKBZ-EFH	Barn Doors
93034836	BDAGRAY-EFH	Barn Doors
93034839	BDAWHTE-EFH	Barn Doors

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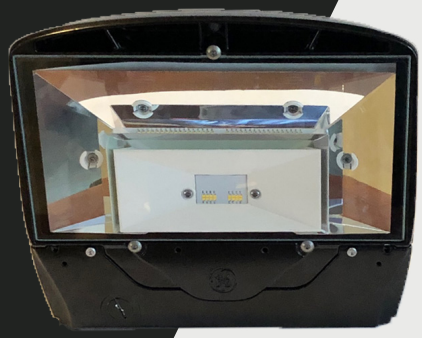
www.gecurrent.com

OLP3107 (Rev 04/30/21)

Evolve® LED Wall Pack

A Series (EWAS)



Project Name _____

Date _____ Type _____

Notes _____

The **Evolve**® LED A Series Wall Pack (EWAS), offers Type II, III and IV optical patterns with lumen levels ranging from 3,000 to 17,000 lumens, and is a designed replacement for 50W to 400W HID including an optional Emergency Battery Backup.

CONSTRUCTION

Housing:	Aluminum die cast enclosure. Integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze, Gray & White (RAL & custom colors available)
Weight:	8 - 10 lbs.

OPTICAL SYSTEM

Lumens:	3,000 - 17,000
Distribution:	Type II, III, IV
CCT:	3000K, 4000K, 5000K
CRI:	≥70

ELECTRICAL

Input Voltage:	120-277V & 347-480V
Input Frequency:	50/60Hz
Power Factor:	> 90% at rated watts
Total Harmonic Distortion:	< 20% at rated watts

SURGE PROTECTION

Typical	Enhanced
☐ 6kV/3kA*	☐ 10kV/5kA*

*Per ANSI C136.2-2015

WARRANTY

☐ 5 Year (Standard)

LUMEN MAINTENANCE

Projected Lxx per IES TM-21-11 at 25°C

Distribution	LXX(10K) @ Hours		
	25,000 HR	50,000 HR	60,000 HR
A2, A3, A4, B2, B3, B4, C2, C3, C4, D2, D3, D4	L95	L93	L92
E2, E3, E4, F2, F3, F4, G2, G3, G4	L96	L94	L94

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted Industry tolerances apply to initial luminous flux and lumen maintenance measurements.

LUMINAIRE AMBIENT TEMPERATURE FACTOR

Ambient Temp (°C)	Initial Flux Factor	Ambient Temp (°C)	Initial Flux Factor
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

RATINGS

Operating Temperature:	-40°C to 50°C
Vibration:	3G per ANSI C136.31-2010
LM-79:	Testing in accordance with IESNA Standards

CONTROLS

Dimming:	Standard - 0-10V ☐
Sensors:	Photo Electric Sensors (PE) available LightGrid and Daintree Compatiable

EMERGENCY BATTERY BACKUP

Provides reliable emergency operations when there is a loss to normal power, supported by Independent Secondary Battery and LED Board.

Powers luminaire for a minimum of 90 minutes @ 1,000 lumens.

Available on A* and B* Optical Code Packages only

Operating Temperature (for EMBB models) -20° to 40°C

3kV/1.5kA surge protection for EMBB models.

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UL 1598 for WET LOCATIONS

IP66 Optical

IK08

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

Evolve® LED Wall Pack

A Series (EWAS)

Catalog Logic

Project Name ______________________
Date ______________ Type ______________
Notes ______________________

E W A S 01 7 FM

_ _ _ _   _ _   _   _ _   _ _   _   _ _   _   _   _ _   _ _ _ _   _ _ _ _

PROD. ID	GEN	VOLTAGE	OPTIC CODE	DISTRIBUTION	CRI (min)	CCT	CONTROLS	PE FUNCTION	MOUNTING	COLOR	OPTIONS
E = Evolve	01	0 = 120-277	Ax = 3000	AF = Asymmetric Forward	7 = 70 CRI	30 = 3000K[8]	N = No external dimming leads	1 = None	FM = Flush Mount	BLCK = Black	EMBB = Emergency Battery Backup[1,4,9,12]
W = Wallpack		H = 347-480	Bx = 5000	AN = Asymmetric Narrow		40 = 4000K	D = External dimming leads[1]	3 = Button PE[1,2,3,11]		DKBZ = Dark Bronze	R = Enhanced Surge Protection (10kV/5kA)
AS = A-Series			Cx = 7500	AW = Asymmetric Wide		50 = 5000K		A = ANSI C136.41 7-Pin Receptacle		GRAY = Gray	T = Extreme Surge Protection (20kV/10kA)
		1 = 120	Dx = 10000					D = ANSI C136.41 7-Pin Receptacle with Shorting Cap		WHTE = White	H = Motion Sensor (Wattstopper)[5,6,10]
		2 = 208	Ex = 12200					E = ANSI C136.41 7-Pin Receptacle with Non Dimming PE Control			Y = Coastal Finish[7]
		3 = 240	Fx = 14400								XXX = Special Options
		4 = 277	Gx = 17000								
		D = 347									
		5 = 480									

1 Not available with Option H (Motion Sensor)
2 Only available with discrete voltages
3 Not available with Voltage Options 0, H, or 5
4 Available with A and B Optical Codes Only
5 H Motion Sensor Bottom mount available with A, B, C, D, & E Optical Codes Only
6 H Motion Sensor Side Mount available with F & G Optical Codes Only
7 Recommended for installations within 750 feet from coast. Lead time varies, check with factory
8 Select 3000K CCT for IDA approved fixtures
9 Not available with voltage options D, 5, or H
10 WS FSIR-100 (Sku# 197634) needed for programming sensor
11 Motion sensor has dusk-to-dawn control functionality
12 EMBB cannot be used with R (Enhanced Surge 10kV/5kA) or T (Extreme Surge 20kV/10kA)

GE current
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Evolve® LED Wall Pack

A Series (EWAS)

Spec Tables

Project Name _____

Date _____ Type _____

Notes _____

TYPE	OPTIC CODE	DISTRIBUTION	TYPICAL INITIAL LUMENS		TYPICAL SYSTEM WATTAGE		BUG RATINGS	
							3000K	4000K & 5000K
			3000K	4000K & 5000K	120-277V	347-480V	B-U-G	B-U-G
Type IV	A4	Asymmetric Forward (AF)	2900	3000	21	23	B1-U0-G1	B1-U0-G1
	B4		4900	5000	36	38	B1-U0-G1	B1-U0-G1
	C4		7300	7500	56		B1-U0-G2	B1-U0-G2
	D4		9800	10000	77		B2-U0-G2	B2-U0-G2
	E4		11500	12200	89		B2-U0-G2	B2-U0-G2
	F4		13600	14400	109		B2-U0-G2	B2-U0-G2
	G4		16100	17000	130		B3-U0-G3	B3-U0-G3
Type III	A3	Asymmetric Wide (AW)	2900	3000	21	23	B1-U0-G1	B1-U0-G1
	B3		4900	5100	36	38	B1-U0-G1	B1-U0-G1
	C3		7400	7600	56		B2-U0-G1	B2-U0-G1
	D3		9900	10200	77		B2-U0-G2	B2-U0-G2
	E3		11700	12400	89		B2-U0-G2	B2-U0-G2
	F3		13900	14700	109		B2-U0-G2	B2-U0-G2
	G3		16400	17300	130		B2-U0-G2	B3-U0-G2
Type II	A2	Asymmetric Narrow (AN)	2900	3000	21	23	B1-U0-G1	B1-U0-G1
	B2		4900	5000	36	38	B1-U0-G1	B1-U0-G1
	C2		7300	7500	56		B2-U0-G1	B2-U0-G2
	D2		9800	10100	77		B2-U0-G2	B2-U0-G2
	E2		11600	12300	89		B2-U0-G2	B2-U0-G2
	F2		13700	14500	109		B3-U0-G3	B3-U0-G3
	G2		16200	17100	130		B3-U0-G3	B3-U0-G3

For additional information on EWAS IES files, please click the following link: **EWAS IES Files**

GE current
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Evolve® LED Wall Pack

A Series (EWAS)

Photometric Plots

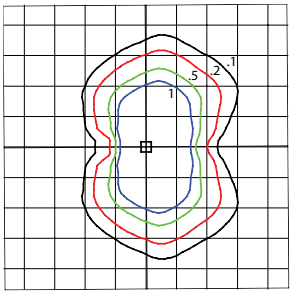
Project Name _____

Date _____ Type _____

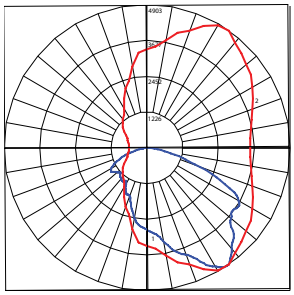
Notes _____

EWAS
ASYMMETRIC NARROW
(D2AN750)

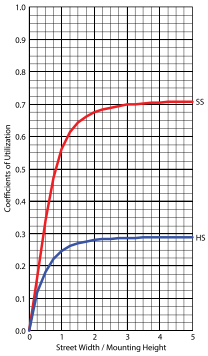
10,100 Lumens
5000K
EWAS01_D2AN750_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade

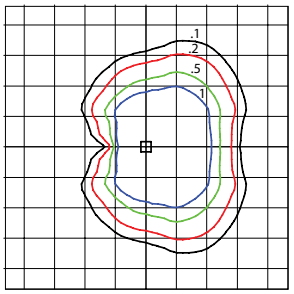


— Vertical plane through horizontal angle of Max. Cd at 55°
— Horizontal cone through vertical angle of Max. Cd at 34°

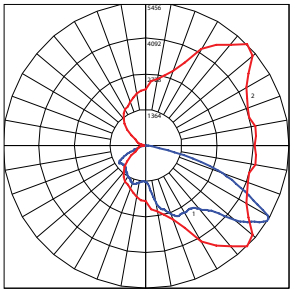


EWAS
ASYMMETRIC WIDE
(D3AW750)

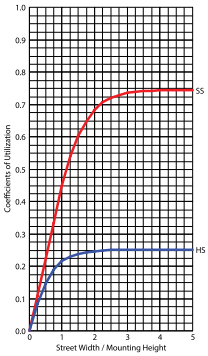
10,200 Lumens
5000K
EWAS01_D3AW750_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade

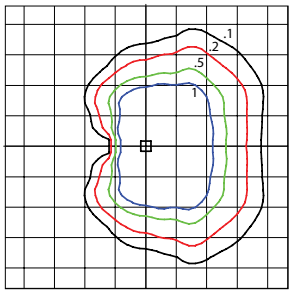


— Vertical plane through horizontal angle of Max. Cd at 45°
— Horizontal cone through vertical angle of Max. Cd at 59°

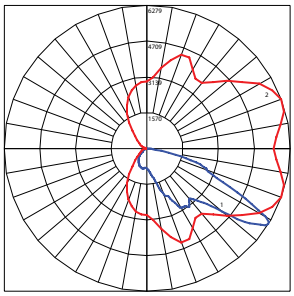


EWAS
ASYMMETRIC FORWARD
(D4AF750)

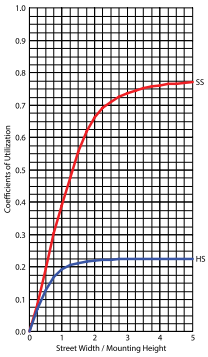
10,000 Lumens
5000K
EWAS01_D4AF750_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade

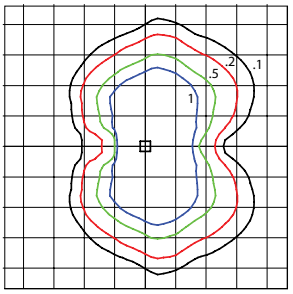


— Vertical plane through horizontal angle of Max. Cd at 20°
— Horizontal cone through vertical angle of Max. Cd at 58°

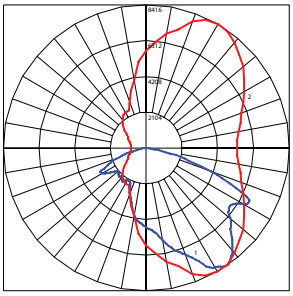


EWAS
ASYMMETRIC NARROW
(G2AN750)

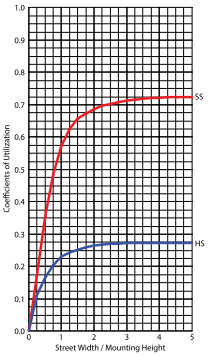
17,100 Lumens
5000K
EWAS01_G2AN750_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade



— Vertical plane through horizontal angle of Max. Cd at 60°
— Horizontal cone through vertical angle of Max. Cd at 35°



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Evolve® LED Wall Pack

A Series (EWAS)

Photometric Plots

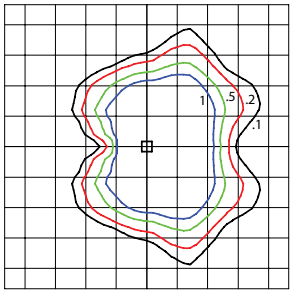
Project Name _____

Date _____ Type _____

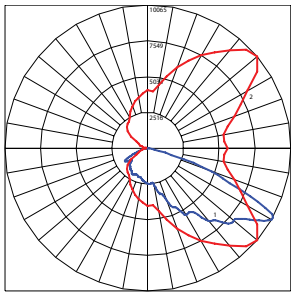
Notes _____

EWAS
ASYMMETRIC WIDE
(G3AW750)

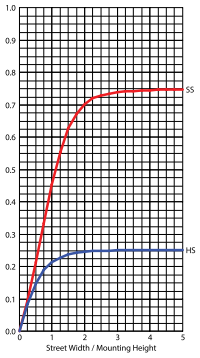
17,300 Lumens
5000K
EWAS01_G3AW750_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade

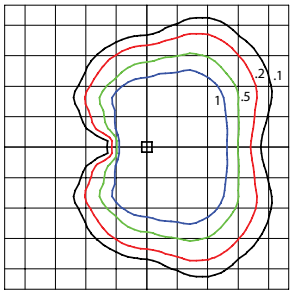


— Vertical plane through horizontal angle of Max. Cd at 40°
— Horizontal cone through vertical angle of Max. Cd at 61°

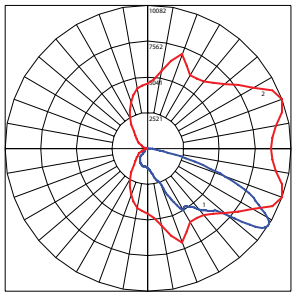


EWAS
ASYMMETRIC FORWARD
(G4AF750)

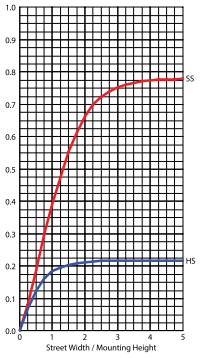
17,000 Lumens
5000K
EWAS01_G4AF750_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade

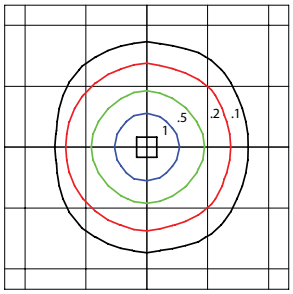


— Vertical plane through horizontal angle of Max. Cd at 20°
— Horizontal cone through vertical angle of Max. Cd at 57°

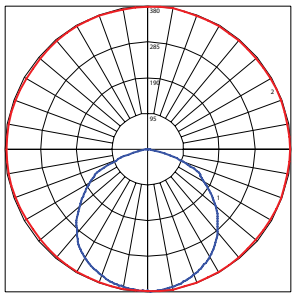


EWAS
(With Emergency Battery
Backup in Operation)

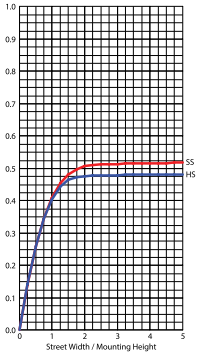
1,000 Lumens
3000K, 4000K, 5000K
EWAS01_With Emergency
Battery Backup On_.IES



- Mounting Height at 15'
- Initial Footcandle at Grade



— Vertical plane through horizontal angle of Max. Cd at 80°
— Horizontal cone through vertical angle of Max. Cd at 1°



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Evolve® LED Wall Pack

A Series (EWAS)

Motion Sensing

Project Name _____

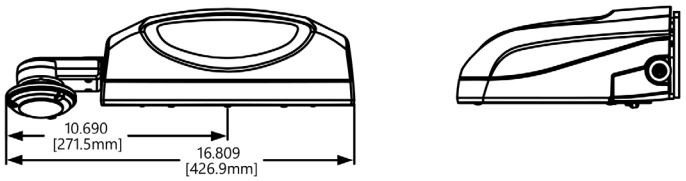
Date _____ Type _____

Notes _____

H MOTION SENSING OPTION

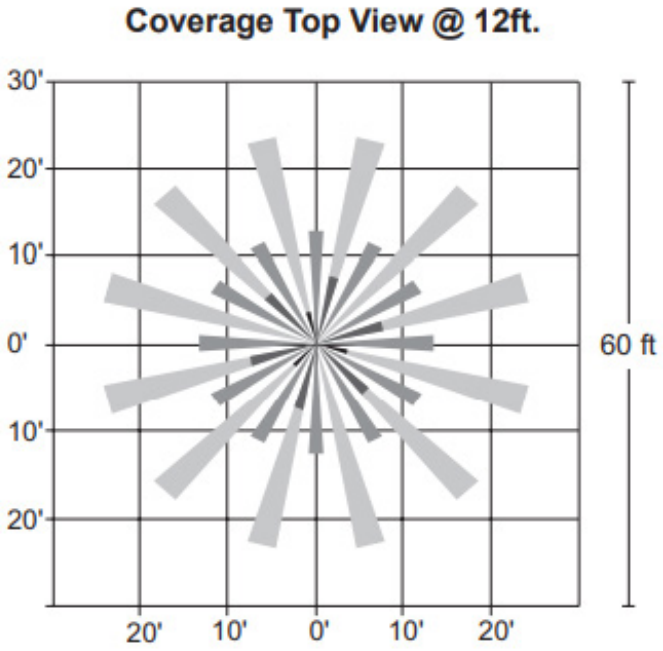
Recommended Mounting Height:	8-25ft
Coverage Radius:	25-30 ft
Lateral Coverage	Provides 180° coverage (180° blocked by wall)
Default Settings	
Output:	Occupied - 100% Unoccupied - 50%
PE Sensor:	Enabled
Ramp/Fade:	10% dimming after 5 minutes with no occupancy
	Adds < 1W to fixture power rating
	Field programmable using FSIR-100 hand held programmer SKU # 197634 (WS FSIR-100)

H Option - Wattstopper Motion Sensor
Bottom mount available with A, B, C, D, & E Optical Codes Only



H Option - Wattstopper® Motion Sensor
Side mount available with F & G Optical Codes Only

SENSOR PATTERN*



* Image used with permission from Catalog Number: FSP-L2/FSP-L3/FSP-L7

For additional information on Wattstopper® products please click the following link:

Wattstopper® Coverage Guide

GE current
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Evolve® LED Wall Pack

A Series (EWAS)

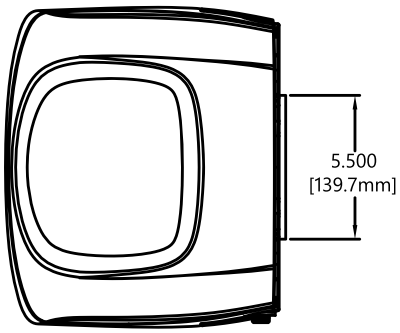
Mounting & Accessories

Project Name _____

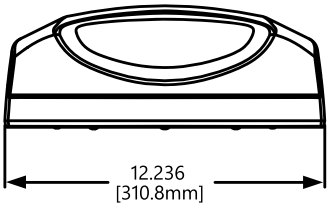
Date _____ Type _____

Notes _____

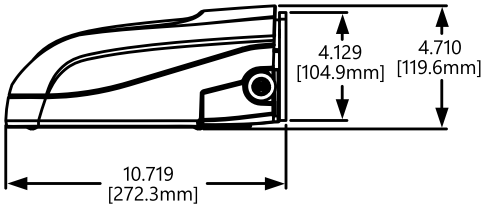
TOP VIEW

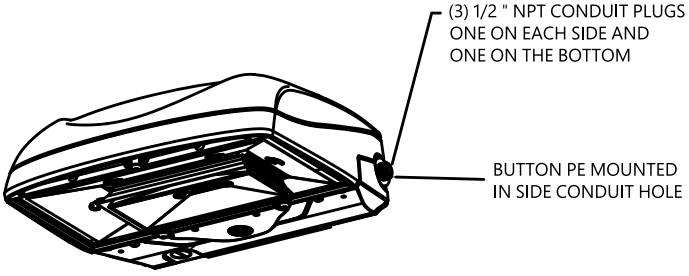


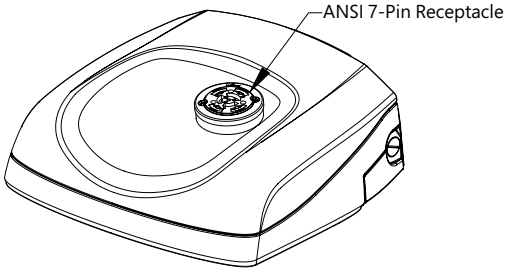
FRONT VIEW



SIDE VIEW







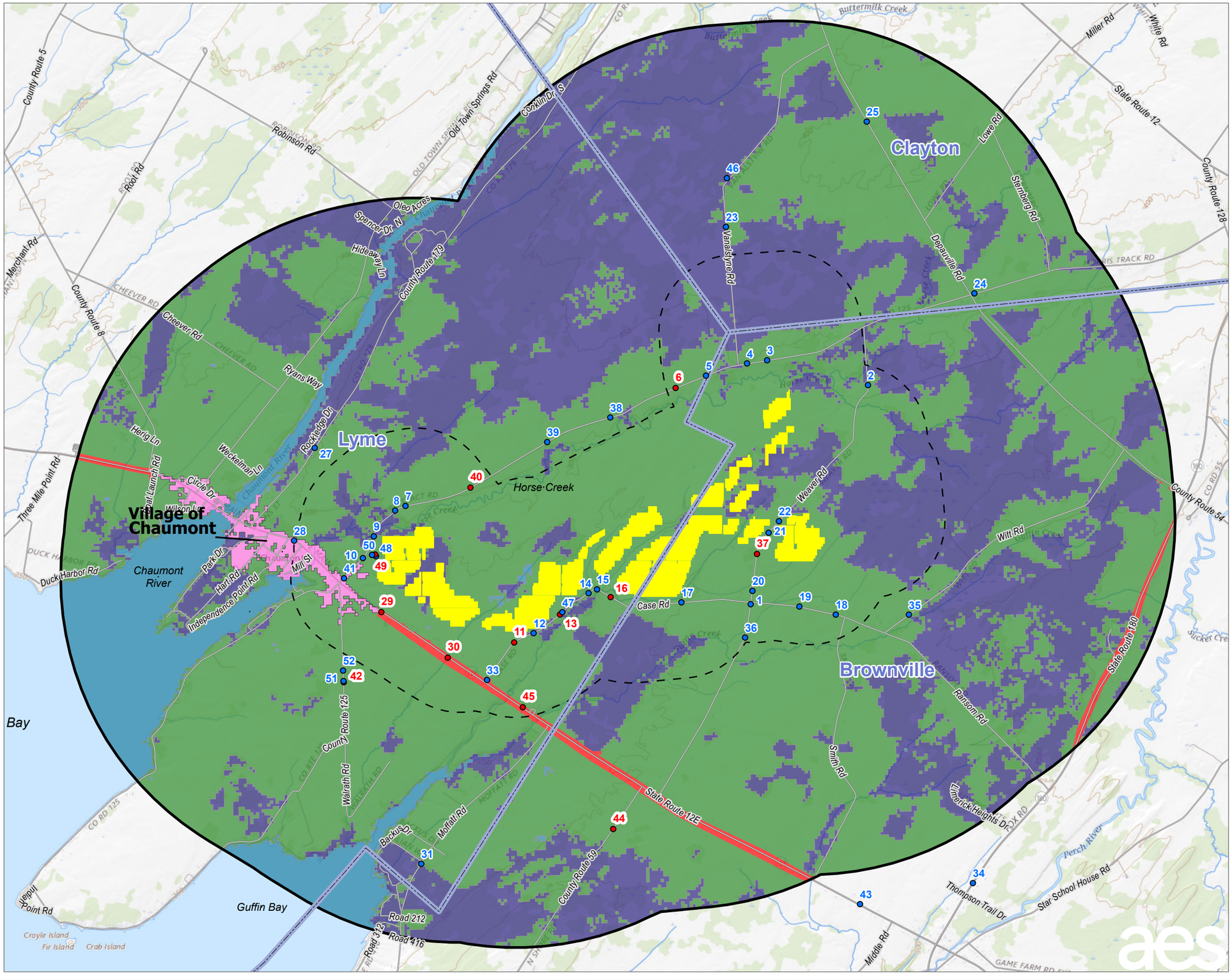
MOUNTING

- Flush Mount: Mounts directly to customer supplied junction box
- Surface Mount: Mounts to walls via separate mounting holes.

OLP3165 (Rev 11/24/21)

Attachment 2:

Revised Maps



LEGEND

- SIMULATION VIEWPOINT LOCATION NUMBER
- PHOTO VIEWPOINT LOCATION NUMBER
- PROPOSED PV ARRAY
- HALF MILE FOREGROUND DISTANCE ZONE
- TWO MILE STUDY AREA
- ROADS

LANDSCAPE SIMILARITY ZONES

- AGRICULTURAL
- FORESTED
- VILLAGE
- TRANSPORTATION CORRIDOR
- WATER

NOTES:
1. THIS FIGURE IS DESIGNED TO BE VIEWED OR PRINTED IN COLOR AT 11X17.

BASE MAP: USGS TOPOGRAPHIC MAP.
DATA SOURCES: AES, TRC, NYSGIS.

1:40,000
1" = 3,333'

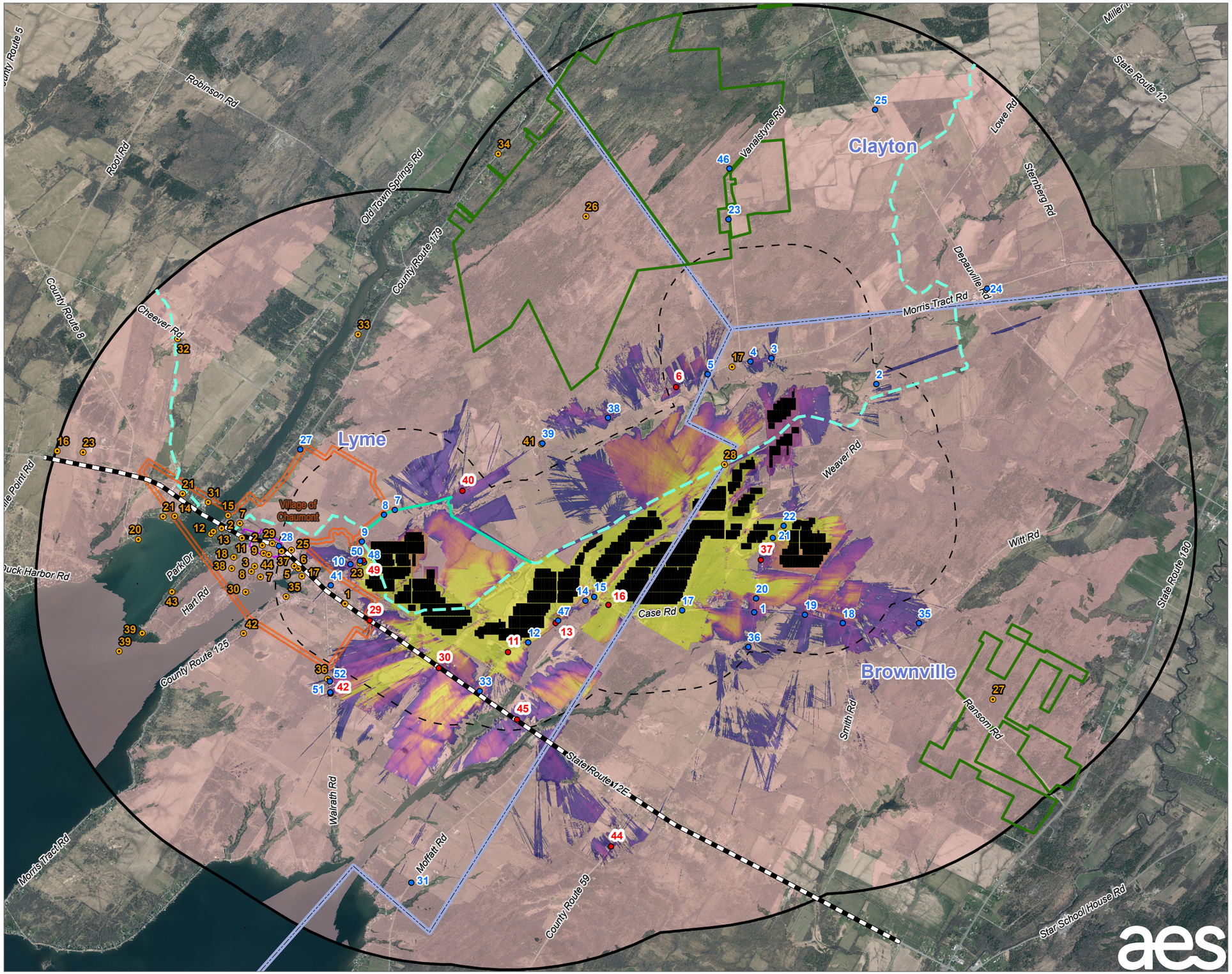
0 1,500 3,000 FEET

PROJECT:
RIVERSIDE SOLAR LLC
TOWNS OF LYME & BROWNVILLE
JEFFERSON COUNTY, NY

TITLE:
LANDSCAPE SIMILARITY ZONES

DRAWN BY:	A. KAILAS	PROJ. NO.:	373222
CHECKED BY:	J. BARTOS		**REVISED FIGURE 1**
APPROVED BY:	J. GUARIGLIA		
DATE:	JANUARY 2022		

TRC
215 GREENFIELD PKWY, STE 102
LIVERPOOL, NY 13088



LEGEND

- AESTHETIC RESOURCE
- SIMULATION VIEWPOINT LOCATION NUMBER
- PHOTO VIEWPOINT LOCATION NUMBER
- GREAT LAKES SEAWAY TRAIL
- EXISTING SNOWMOBILE TRAIL
- PROPOSED SNOWMOBILE TRAIL
- CHAUMONT HISTORIC DISTRICT
- PARK OR RECREATION AREA
- PROPOSED PV ARRAY
- VILLAGE OF CHAUMONT
- TWO MILE STUDY AREA
- HALF MILE FOREGROUND DISTANCE ZONE
- MORE PANELS VISIBLE
- FEWER PANELS VISIBLE
- POTENTIAL VISIBILITY BASED ON TOPOGRAPHY ONLY

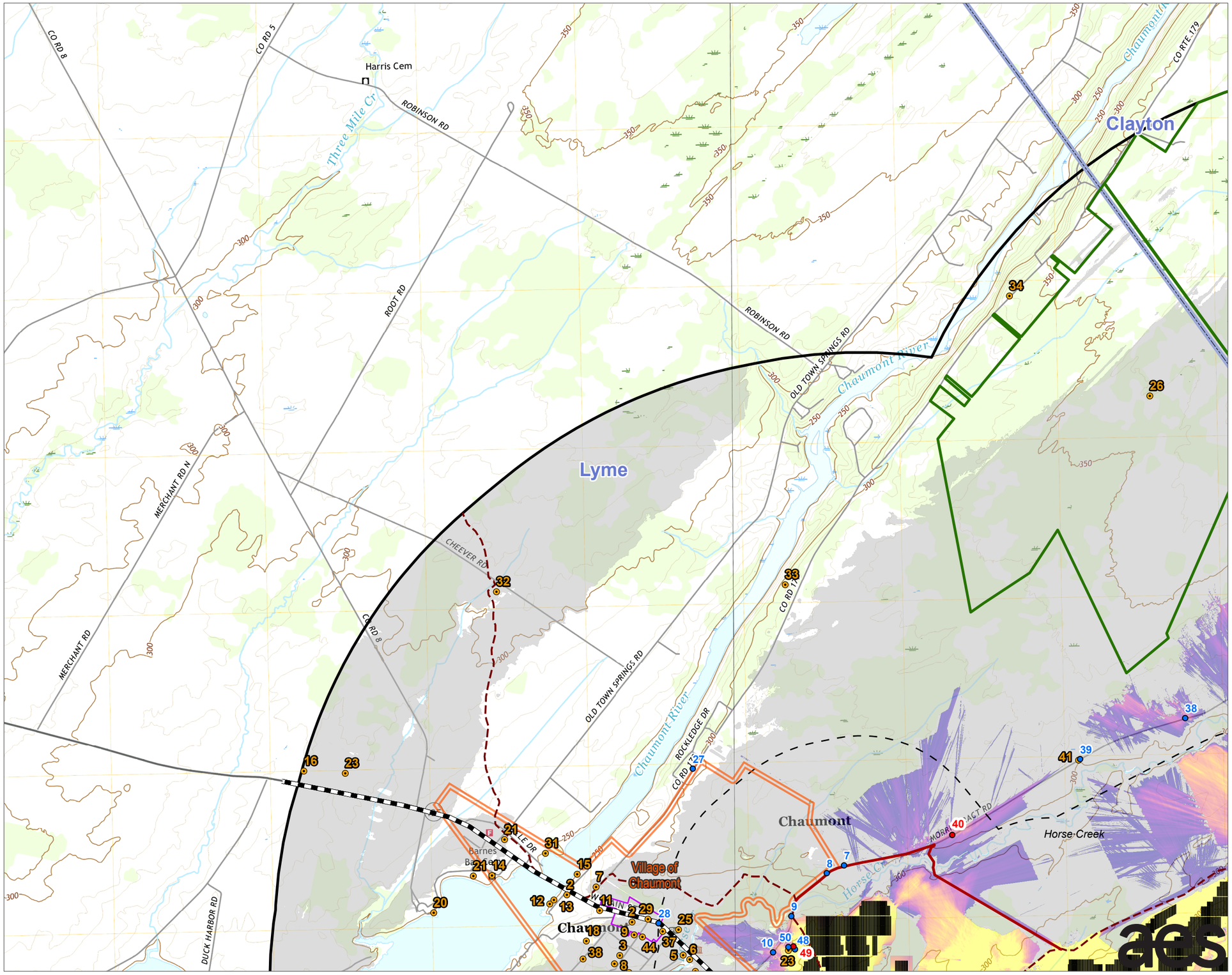
NOTES:
1. THIS FIGURE IS DESIGNED TO BE VIEWED OR PRINTED IN COLOR AT 11X17.
2. VISIBILITY BASED ON TOPOGRAPHY ONLY DOES NOT ACCOUNT FOR THE NUMBER OF POTENTIALLY VISIBLE PANELS.

BASE MAP: NYSGIS "LATEST" ORTHOIMAGERY ONLINE SERVICE LAYER.
DATA SOURCES: AES, TRC, NYSGIS.

1:38,400
1" = 3,200'
0 1,600 3,200 FEET

PROJECT:	RIVERSIDE SOLAR LLC TOWNS OF LYME & BROWNVILLE JEFFERSON COUNTY, NY
TITLE:	OVERVIEW OF AESTHETIC RESOURCES AND PV ARRAY VIEWSHED
DRAWN BY: A. KAILAS	PROJ. NO.: 373222
CHECKED BY: J. BARTOS	REVISED FIGURE 2
APPROVED BY: J. GUARIGLIA	
DATE: FEBRUARY 2022	

TRC
215 GREENFIELD PKWY, STE 102
LIVERPOOL, NY 13088



LEGEND

- AESTHETIC RESOURCE
- SIMULATION VIEWPOINT LOCATION NUMBER
- PHOTO VIEWPOINT LOCATION NUMBER
- PROPOSED SNOWMOBILE TRAIL
- EXISTING SNOWMOBILE TRAIL
- GREAT LAKES SEAWAY TRAIL
- CHAUMONT HISTORIC DISTRICT
- PARK OR RECREATION AREA
- PROPOSED PV ARRAY
- VILLAGE OF CHAUMONT
- HALF MILE FOREGROUND DISTANCE ZONE
- TWO MILE STUDY AREA

POTENTIAL SCREENED VISIBILITY

- MORE PANELS VISIBLE
- FEWER PANELS VISIBLE
- POTENTIAL VISIBILITY BASED ON TOPOGRAPHY ONLY

NOTES:
1. THIS FIGURE IS DESIGNED TO BE VIEWED OR PRINTED IN COLOR AT 11X17.
2. VISIBILITY BASED ON TOPOGRAPHY ONLY DOES NOT ACCOUNT FOR THE NUMBER OF POTENTIALLY VISIBLE PANELS.

BASE MAP: DOWNLOADED USGS TOPOGRAPHIC MAP QUADRANGLES.
DATA SOURCES: AES, TRC, NYSGIS, USGS.

1:24,000
1" = 2,000'
0 1,000 2,000 FEET

PROJECT:	RIVERSIDE SOLAR LLC TOWNS OF LYME & BROWNVILLE JEFFERSON COUNTY, NY
TITLE:	POTENTIAL VISIBILITY AND AESTHETIC RESOURCES FOR SOLAR ARRAYS
DRAWN BY: A. KAILAS	PROJ. NO.: 373222
CHECKED BY: J. BARTOS	REVISED FIGURE 3 MAP 1 OF 5
APPROVED BY: J. GUARIGLIA	
DATE: JANUARY 2022	

TRC
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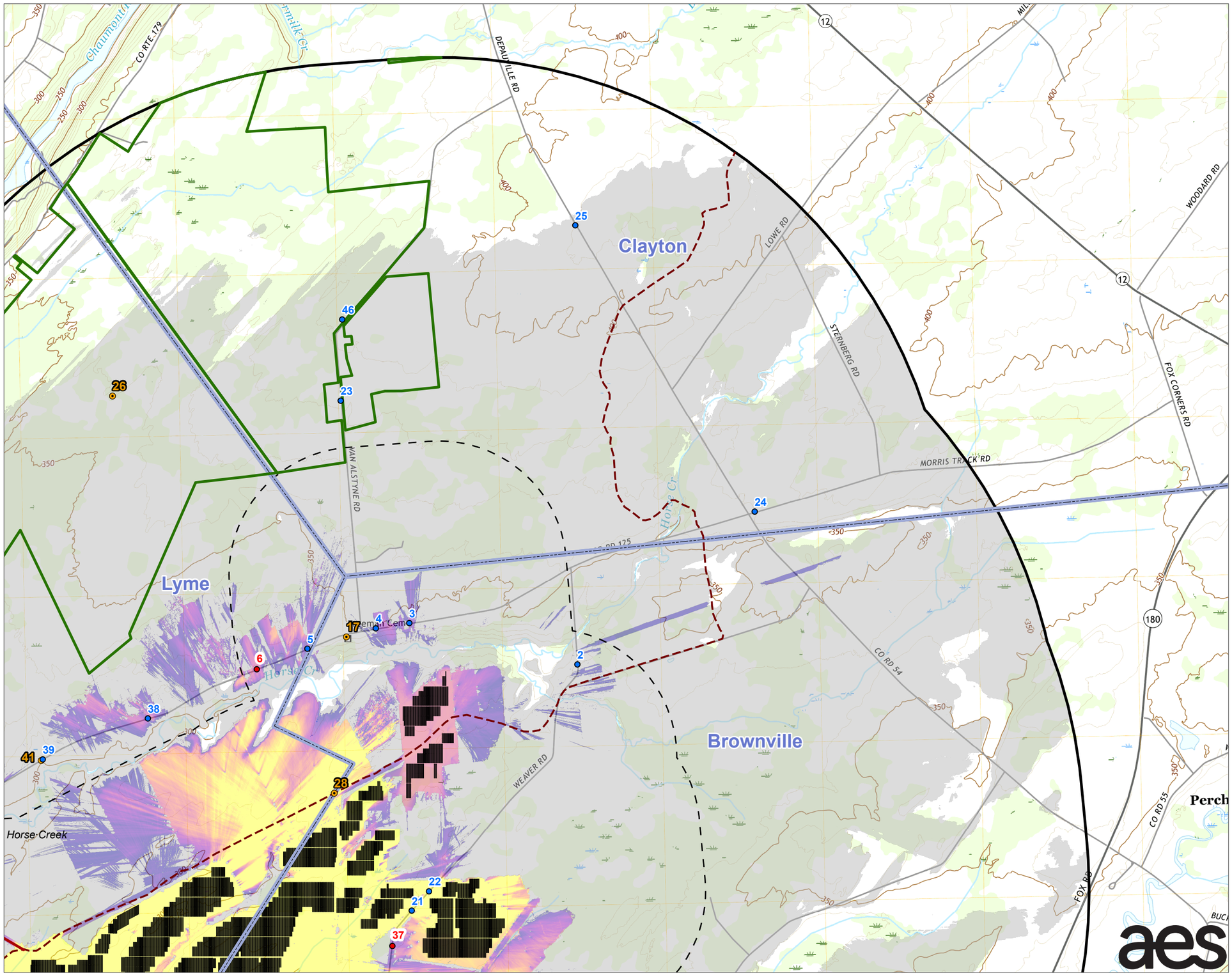
LIVERPOOL, NY 13088



LEGEND

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- PHOTO VIEWPOINT LOCATION NUMBER
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- EXISTING SNOWMOBILE TRAIL
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- PARK OR RECREATION AREA
- PROPOSED PV ARRAY
- VILLAGE OF CHAUMONT
- HALF MILE FOREGROUND DISTANCE ZONE
- TWO MILE STUDY AREA

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- FEWER PANELS VISIBLE
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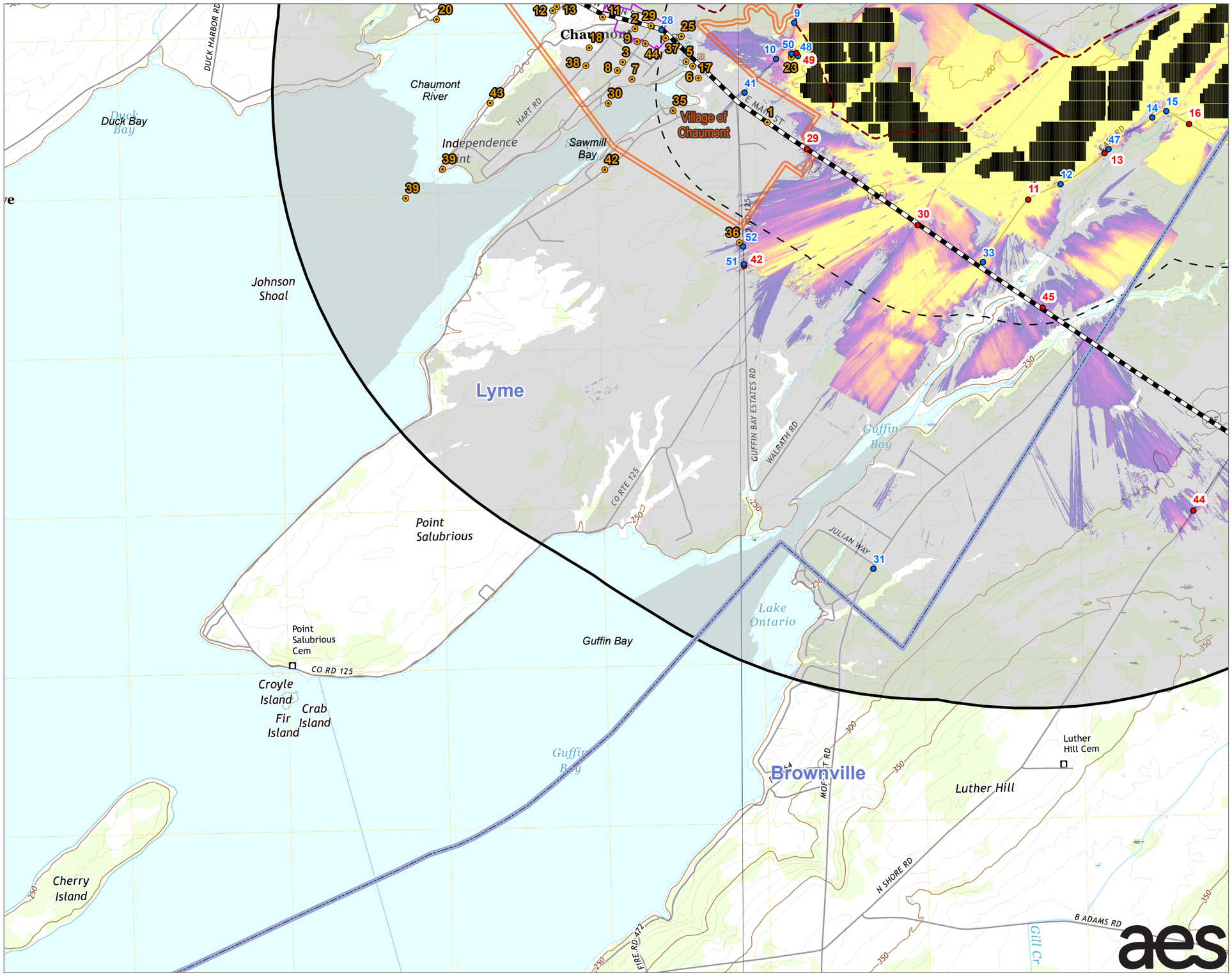

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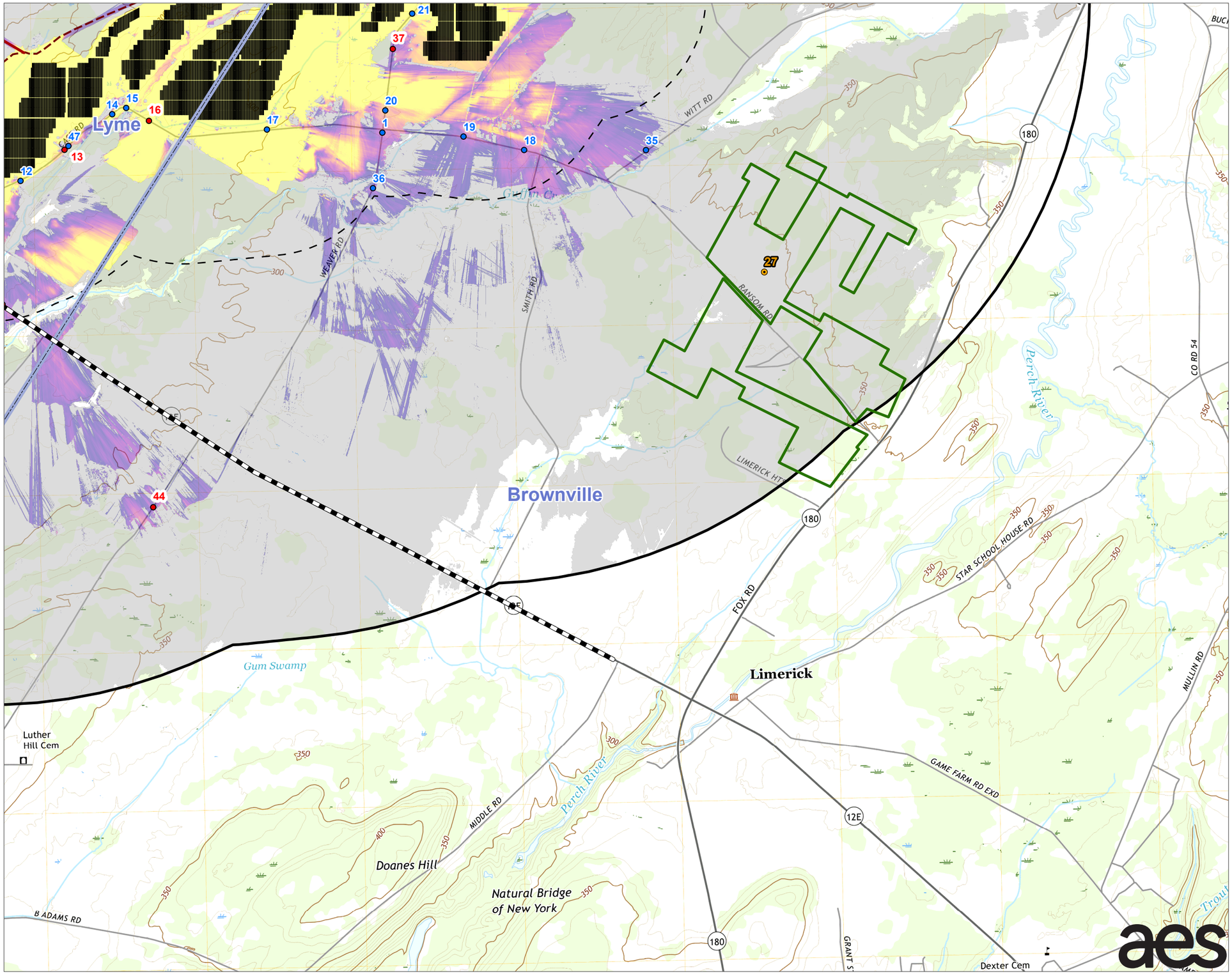

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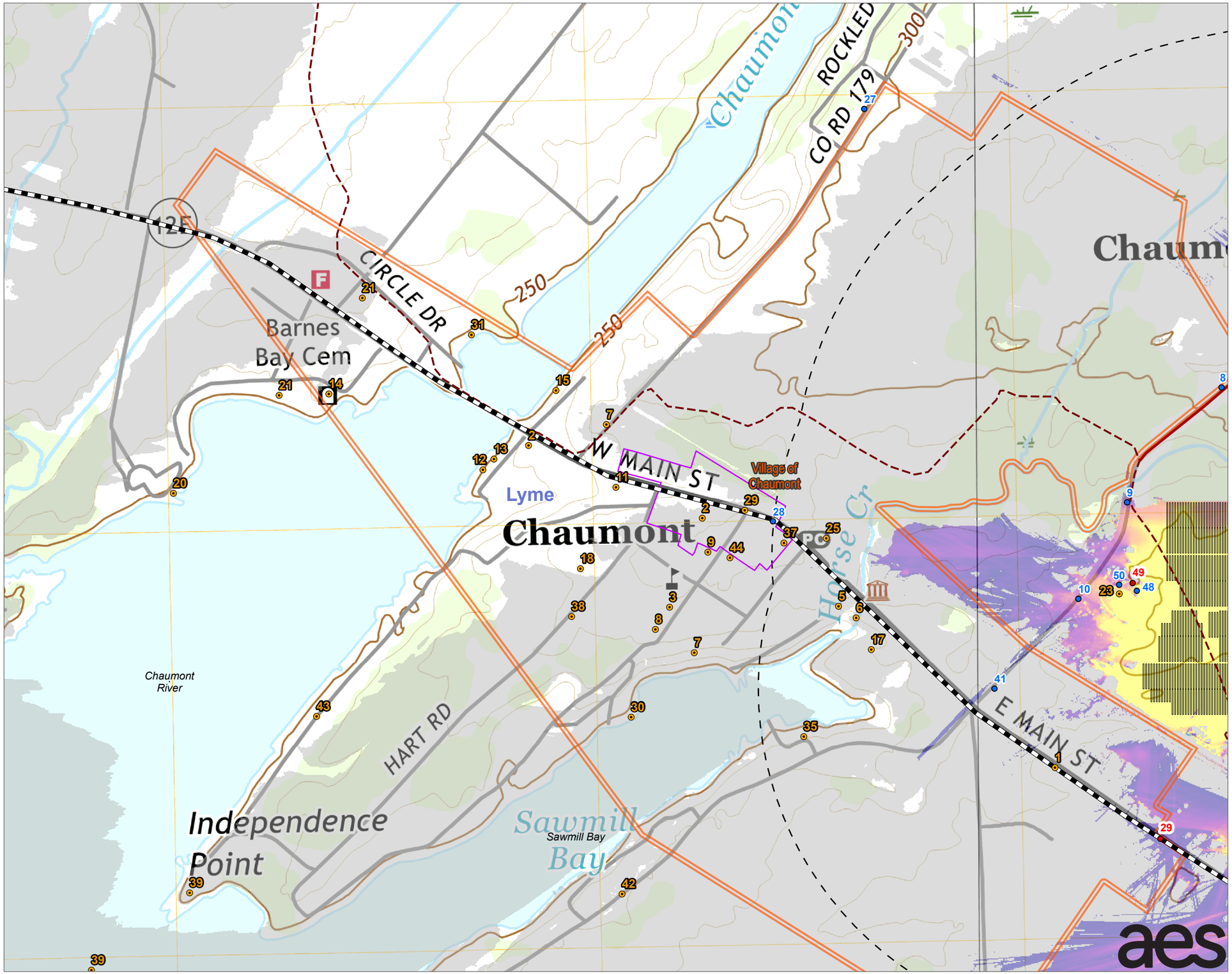

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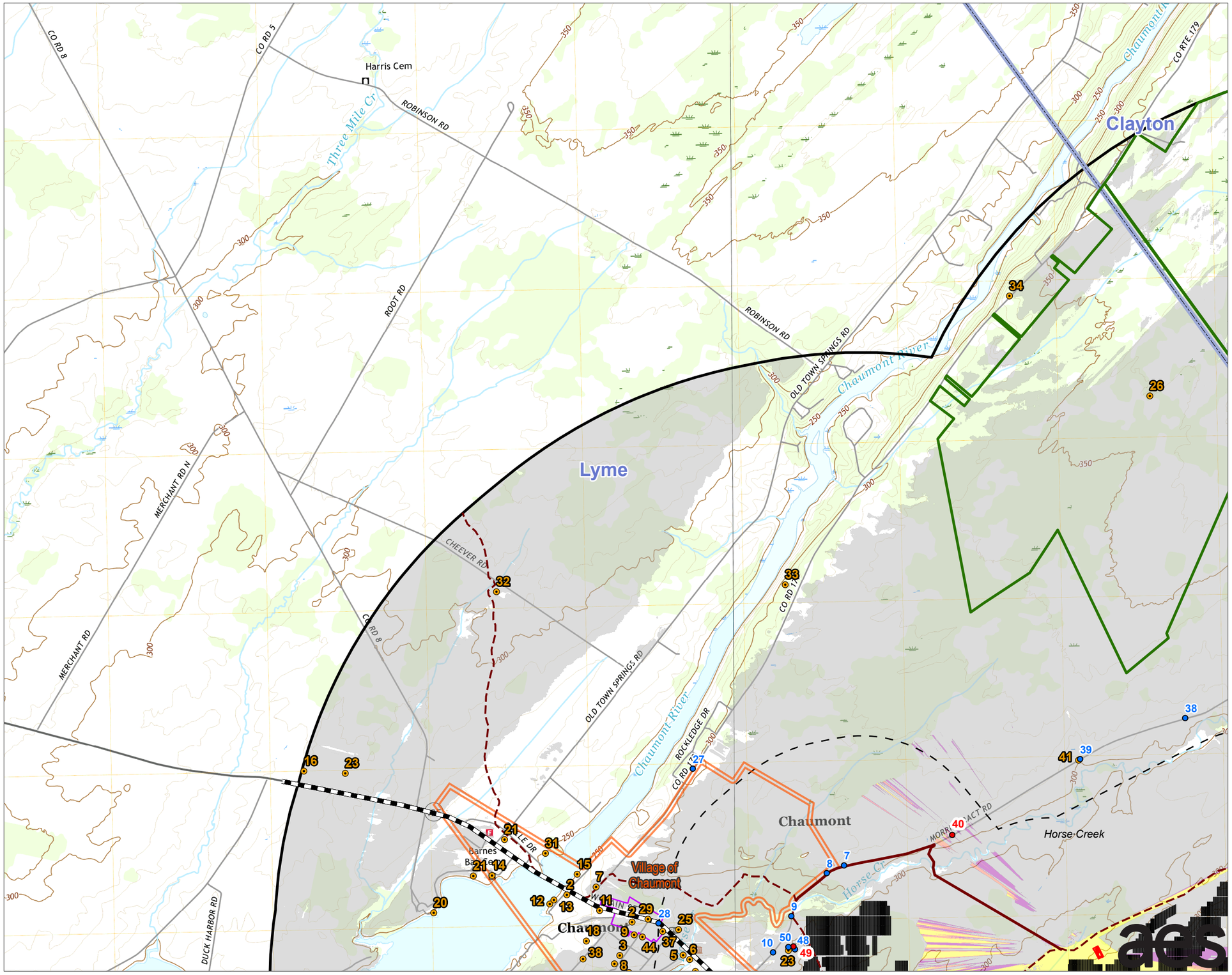

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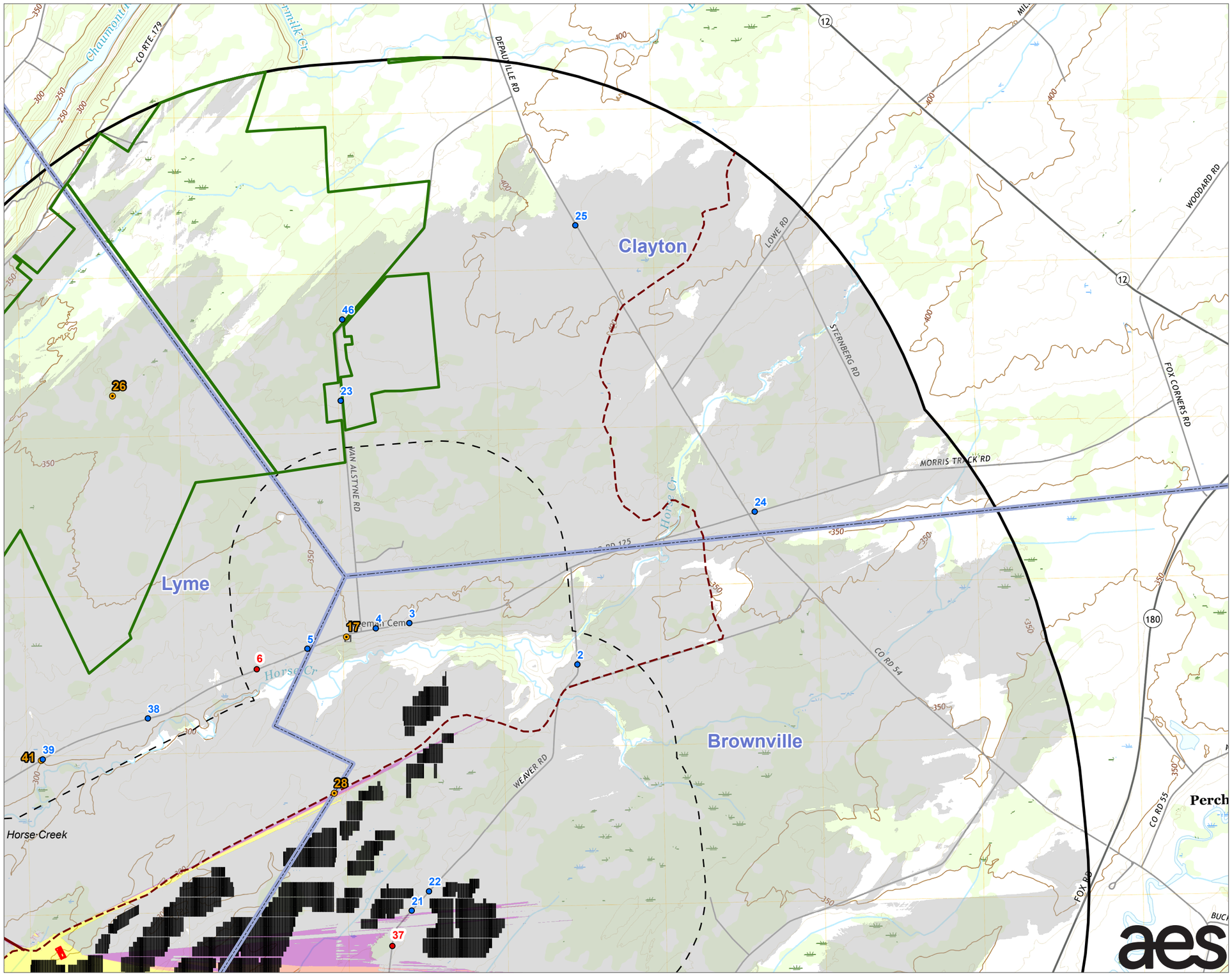

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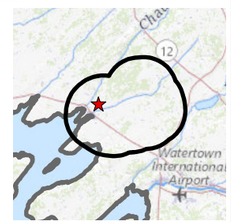

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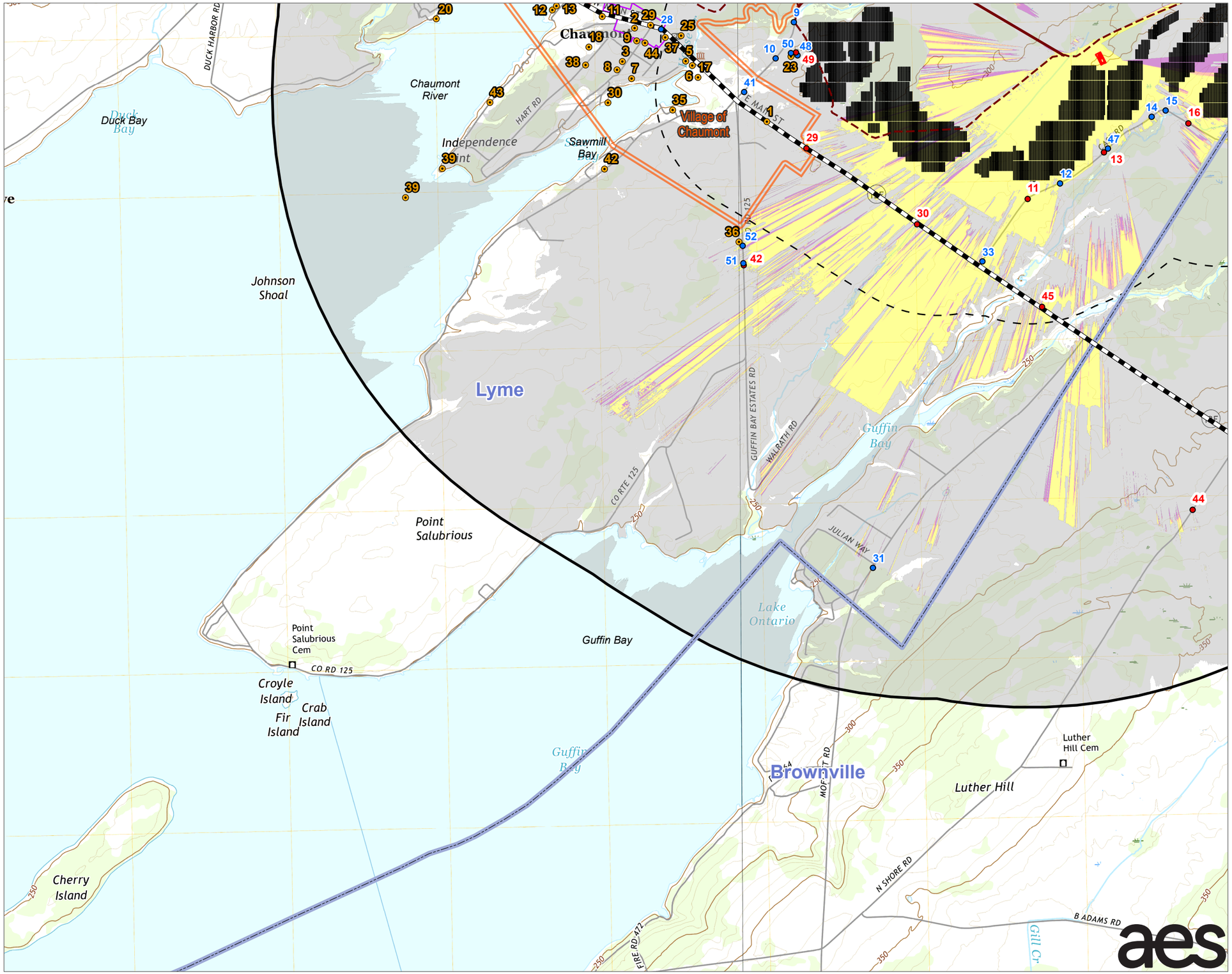

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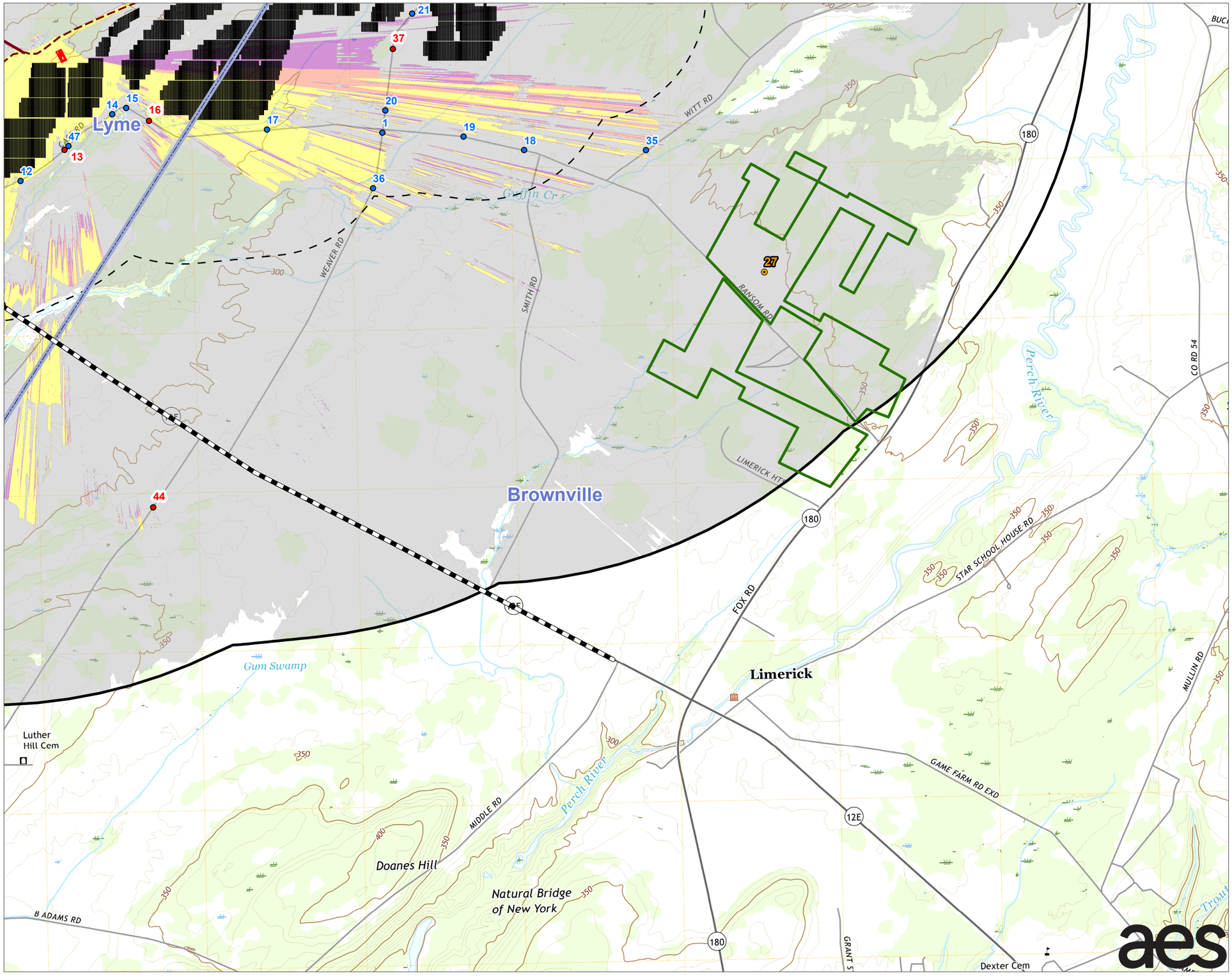

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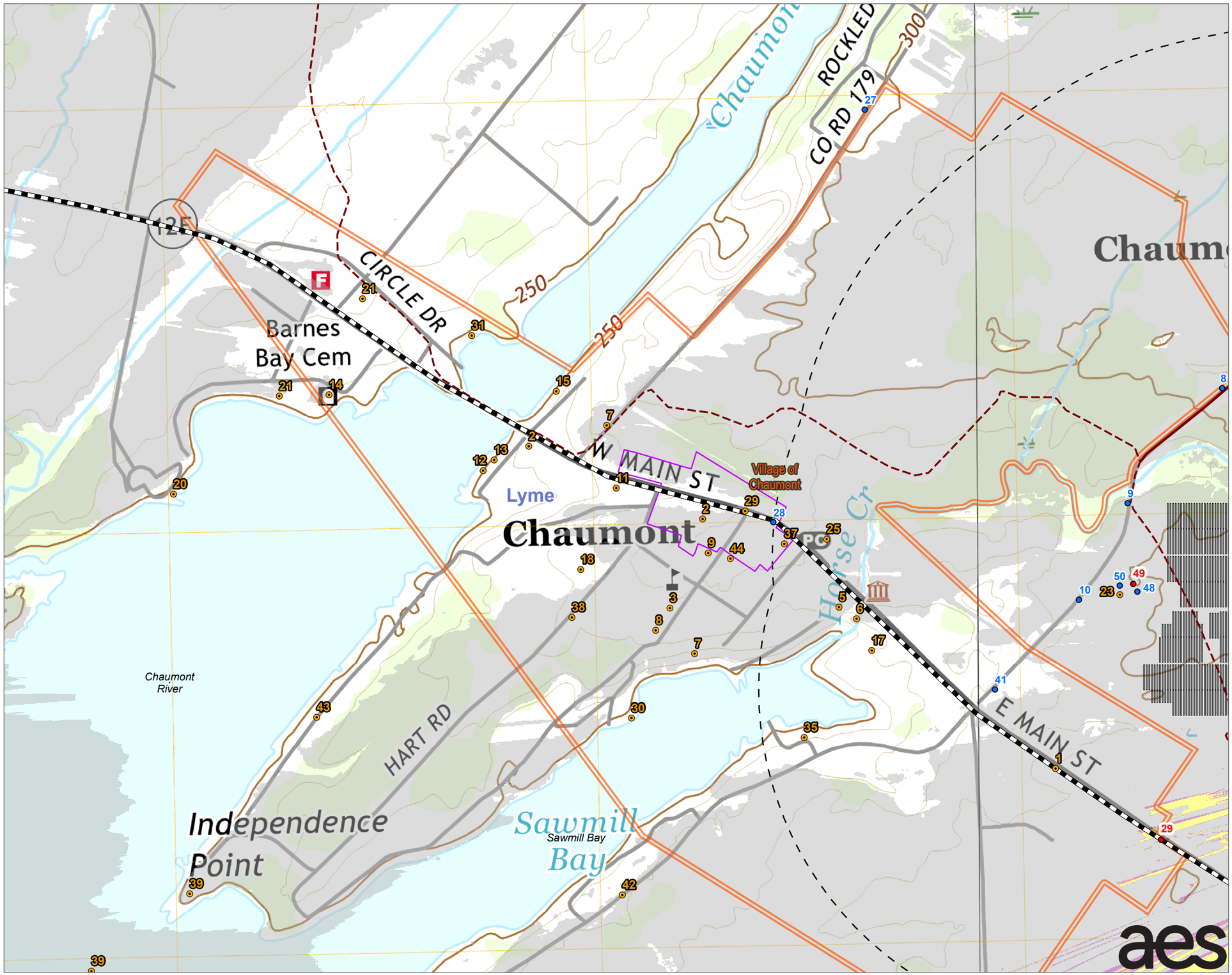

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