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September 21, 2022

Via Electronic Filing

Ms. Tanowa Troupe
Administration/Docketing
Public Utilities Commission of Ohio
180 East Broad Street, 11th Floor
Columbus, OH 43215-3793

Re: Arche Energy Project, LLC, Case No 20-979-EL-BGN

Dear Ms. Troupe:

On April 15, 2021, the Ohio Power Siting Board (“OPSB” or “Board”) issued a certificate of environmental compatibility and public need to Arche Energy Project, LLC (“Arche”) for the constructions, operation, and maintenance of a 107 MW solar generation facility located in Fulton County, Ohio.

As part of the Certificate, Arche must comply with various conditions related to the construction and operation of the facility. Certificate Condition No. 13 requires, in part that:

Prior to the commencement of construction, Arche shall prepare a landscape and lighting plan in consultation with a licensed landscape architect to address the aesthetic and lighting impacts of the facility with an emphasis on any locations where an adjacent non-participating parcel contains a residence with a direct line of sight to the project area.

In compliance with Condition No. 13, attached is a copy of the Landscape Mitigation Plan. Please do not hesitate to contact me if you have any questions.

Sincerely,


Dylan F. Borchers

Attachment

Cc: Jim O'Dell (w/Attachment)



Memorandum

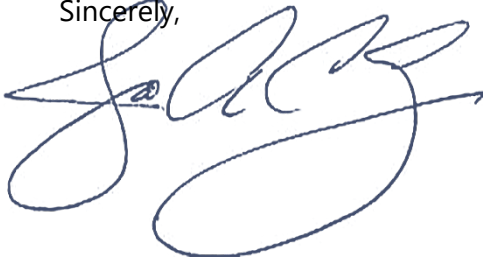
To: Cliff Scher, Lightsource bp
From: Jo Anne Gagliano, RLA, EDR President 
Date: August 30, 2022
Reference: Arche Energy Project Landscape Mitigation Plan
EDR Project No: 19118

Dear Mr. Scher:

EDR has completed a review of the Landscape Mitigation Plan (the Plan), originally prepared by EDR and adjusted to follow recent changes to the Arche Energy Project Facility layout. The changes to the Plan have been found to be minor in nature and comply with the permit conditions regarding survivability as well as screening for adjacent, non-participating residences with a direct line of sight to the project area.

Please feel free to contact me with any questions.

Sincerely,

A large, stylized handwritten signature in blue ink, likely belonging to Jo Anne Gagliano, EDR President.

Arche Energy Project

Landscape Mitigation Plan



September 2022

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1.0 | INTRODUCTION

Minimization and mitigation of visual impacts are important considerations when siting and designing solar facilities. This conceptual landscape mitigation plan will focus on the use of vegetation to help screen views of the proposed solar facility, improve the aesthetics of the project, and provide ecological and wildlife habitat benefits to the community as a whole. This approach is becoming well-established as the preferred method of mitigating visual impacts for solar facilities throughout the country (e.g., Scenic Hudson, 2018; Sullivan and Abplanalp, 2013; Walston, et al. 2018).

The first step in the successful use of native vegetation to mitigate views of a proposed solar project is to incorporate retention of existing vegetative material into the early design. Removing vegetation from a facility site can result in a strong visual contrast between the project and the surrounding environment (Sullivan and Abplanalp, 2013). Retaining existing vegetation wherever feasible, particularly along roadways and property lines, allows a more thoughtful and complete mitigation strategy that preserves the visual and ecological character of the surrounding landscape.

A project may have some locations where there is no existing woody vegetation, or it may be necessary to selectively remove vegetation. In these areas, adding new native trees and shrubs can help to create visual continuity while reducing visibility of the project. While the use of native shrubs and trees will not necessarily result in plantings that completely screen views of the project (see Design Methodology below), it will serve to soften the overall visual effect and help to better integrate the PV arrays into the surrounding landscape. In addition, use of native plant species provides ecological benefits, such as food and cover for local wildlife communities.

Lightsource bp (LSbp), in consultation with Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C (EDR), has worked to develop this Landscape Mitigation Plan (the Plan), which is designed to suit the climate and match the existing natural and vernacular landscapes present in the area surrounding the Arche Energy Project site. The conceptual planting strategies, or “modules”, included use native species and intentionally mimic the character of the adjacent landscape in order to minimize and mitigate the project’s visual impact, with an emphasis on screening locations where an adjacent non-participating parcel contains a direct line of sight to the project area. These strategies have been developed to provide flexible solutions that fit both the scale of the Arche Energy Project facility and the visual character of specific settings.

2.0 | DESIGN METHODOLOGY

Design of a visual mitigation strategy is not simply an exercise in creating walls to obscure views of a solar facility. It is also necessary to minimize visual disruption and discontinuity. This can be done by taking design cues from the existing landscape so that newly introduced elements resemble their surroundings and do not needlessly call attention to themselves.

The design methodology presented in this Plan uses conceptual planting modules based on typical situations found throughout the facility area. These are intended to be broadly repeatable, yet flexible in design so that they can respond to the specific conditions at each planting location. While the planting modules are not designed to completely screen all views of the proposed project, the introduction of mixed native trees and shrubs and additional pollinator seed mix plantings in select locations will soften the visual effect of the project along roadsides and at sensitive property boundaries with natural forms and colors that divert attention from the modern materials and inorganic forms of the PV panel arrays.

These strategies were developed using the following methodology:

- *Review local zoning requirements or guidelines.*
- *Document existing visual character and vegetation within the project site and surrounding area.*
- *Maintain open roadsides and vistas where possible.*
- *Maintain existing vegetation/hedgerows where feasible.*
- *Soften the appearance of the perimeter fences and PV arrays so that they blend into the existing landscape.*
- *Install native, noninvasive species that provide ecological benefits.*
- *Take design and material cues from the existing surrounding landscape.*

Berms, Opaque Enclosures, and Evergreen Hedges

Visual mitigation for solar facilities can include installing earthen berms, opaque enclosures (such as vinyl fencing or similar), and/or a screening hedge made up of evergreen trees. These approaches can be effective in fully screening views of a project and may be appropriate in certain urban or suburban settings. In a rural/agricultural setting, however, the use of berms, opaque enclosures, or evergreen hedges would introduce new visual elements into the landscape that would be inconsistent with the character of the existing visual environment and therefore result in unnecessary visual impacts. In this sense, such interventions would not achieve the goal of minimizing visual discontinuity resulting from the project. In addition, there are no design configurations or solutions using these types of screening measures

that would allow the project to be fully screened from view without resulting in additional environmental impacts. For example, the construction of berms would require large areas of soil disturbance, which is contrary to the Arche Energy Project design objective of minimizing soil disturbance to the greatest extent practicable, and could interfere with current or future agricultural uses of the site. Consequently, no such treatment is proposed as visual mitigation in this plan. As indicated in the description of the proposed planting modules (see Section 4.0), the proposed installation of evergreens will be intermittent, which is in keeping with the existing visual character of the study area.

Native Shrubs and Trees

The use of native shrub and tree plantings between adjacent roads/resources and the fencing that encloses the solar arrays is an appropriate alternative to berms and evergreen hedges, which may not appear natural or appropriate in many settings. Native woody species can be chosen based upon existing natural vegetation so that new plantings appear “normal” and become part of a continuous regional landscape that surrounds and includes the project area. This is of particular importance in locations where adjacent properties or highly traveled roadways may be impacted by the project. The selection of plant materials is an important consideration not only for aesthetics but also for ecological value (Eskew, 2018; Walston, et al., 2018). Locally native species provide particularly suitable habitat for pollinators and other wildlife.

3.0 SELECTION & MAINTENANCE OF VEGETATIVE MATERIALS & FENCE

When designing a conceptual landscape mitigation plan, it is important to propose a site-specific selection of plant materials that will provide the appropriate level of vegetative screening, match the vegetation and visual character of the existing landscape, and prioritize the use of native species. To create the master plant list for the Arche Energy Project, EDR began with field reconnaissance to document existing vegetation along roadsides, within hedgerows, and installed around residential properties within the project area. These on-site observations, combined with information from The Ohio State University's Department of Plant Pathology website, the USDA PLANTS website, the Selected Ohio Native Plants for Landscape and Restoration Use guides provided by the Ohio Department of Natural Resources (DNR), the Ohio Department of Transportation's Statewide Roadside Pollinator Habitat Program Restoration Guidelines and Best Management Practices, and the Ohio Department of Agriculture's Prohibited Invasive Plant list provided the basis for the plant material to be included in the modules.

Existing vegetation in the visual study area consists largely of agricultural crops, including row crops such as corn and soybeans. Forested areas also occur throughout the visual study area. These areas range from small woodlots and hedgerows, which divide agricultural fields, to more substantial forested areas that occur primarily along stream corridors. Forest vegetation is primarily deciduous (maple, oak, walnut, beech, sycamore, dogwood, and hickory) mixed with some conifers.

The project is not far from the Oak Openings region of Ohio, which is characterized by oak savanna.

The plant material outlined in this report has been selected for its regional compatibility with the existing landscape, which should reduce the need for prolonged maintenance beyond the period of establishment. However, given the large scale of the mitigation plan, and reliance on the existing vegetative buffers for screening, LSbp will monitor the condition of plant material after initial installation and protect existing trees during project construction to ensure the intent of the mitigation plan is successful over the life of the project.

The intent of the Plan is to meet the minimum requirements of survivability and replace any failed plantings, so that after five years, a minimum of 90 percent of the plant materials installed for the purpose of visual mitigation has survived.

In addition to maintenance of plant material, LSbp will ensure that all solar panel perimeter fencing is kept in good working order and monitored by operations staff to ensure compliance with all applicable electrical codes and standards.

Examples of potential plant species to be used at the Arche Energy Project:



Eastern Red-Cedar



Eastern White Pine



Bur Oak



Sweet Gum



Black Chokeberry



Downy Serviceberry



Eastern Redbud



Gray Dogwood

4.0 | PLANTING MODULES

L Sbp, in coordination with EDR, has developed two individual planting modules, each designed to apply to a specific circumstance within the project, as described below.

Module 1 - Intermittent Screening

This module is designed to be used in areas where there is both potential for visibility and a significant number of viewers present, but where these viewers are not typically stationary or partaking in passive recreational activities. This occurs along major roadways and along select fencelines. The goal of Module 1 is to visually break up the Project's introduced horizontal line of man-made material and allow the vegetation and the Project to blend into the vegetated background. The diagram below illustrates the concept of intermittent screening.

Module 2 - Comprehensive Screening

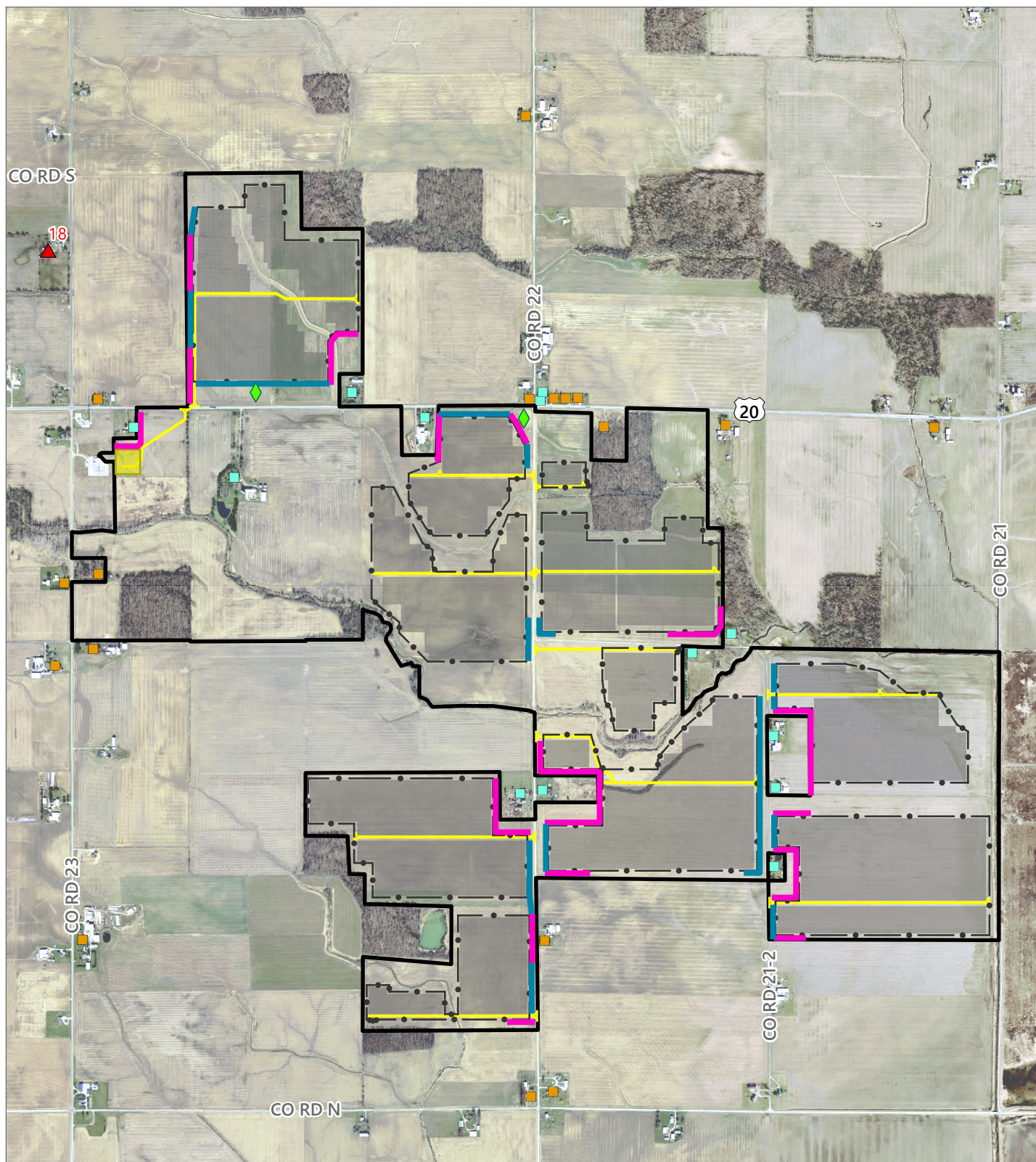
This module is designed to be used in areas where stationary adjacent uses are impacted by the installation of the PV arrays. This occurs primarily where residences are located with a direct line of sight toward the project infrastructure, such as PV arrays and/or the perimeter fence line. Module 2 provides the greatest amount of screening in both summer and winter conditions by incorporating more evergreen material and using native trees and massing deciduous shrubs. The goal of Module 2 is to screen the majority of the project for an adjacent viewer. A 100% opaque screen is not the intent, but rather a living and changing vegetative buffer that allows light to transfer through and does not inappropriately enclose a property.

See Module 1 & 2 design sheets included for further detail.

5.0 | LOCATION OF PLANTING MODULES

EDR landscape architects used desktop and field analysis, municipal regulations, and outreach responses to guide delineation of proposed planting areas around facility components. The goal in selecting locations for plantings is to prioritize locations where otherwise open or uninterrupted views of the PV arrays have the potential to result in substantial visual effects. These areas include open fields adjacent to roadsides, thin/partial hedgerows abutting neighboring residences, and areas adjacent to residences and/or visual resources throughout the project area.

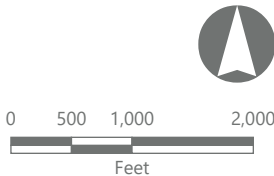
Landscape Module Locations



- ▲ Potentially Historic Resource
 - ◆ Preliminary Pollinator Seed Mix Area
- Landscape Module**
- Module 1 - Intermittent Screening
 - Module 2 - Comprehensive Screening

- Adjacent Receptor**
- Non-Participating
 - Participating
- Facility Component**
- Access Road
 - Fenceline

- Facility Substation
- PV Panel Area
- Project Area

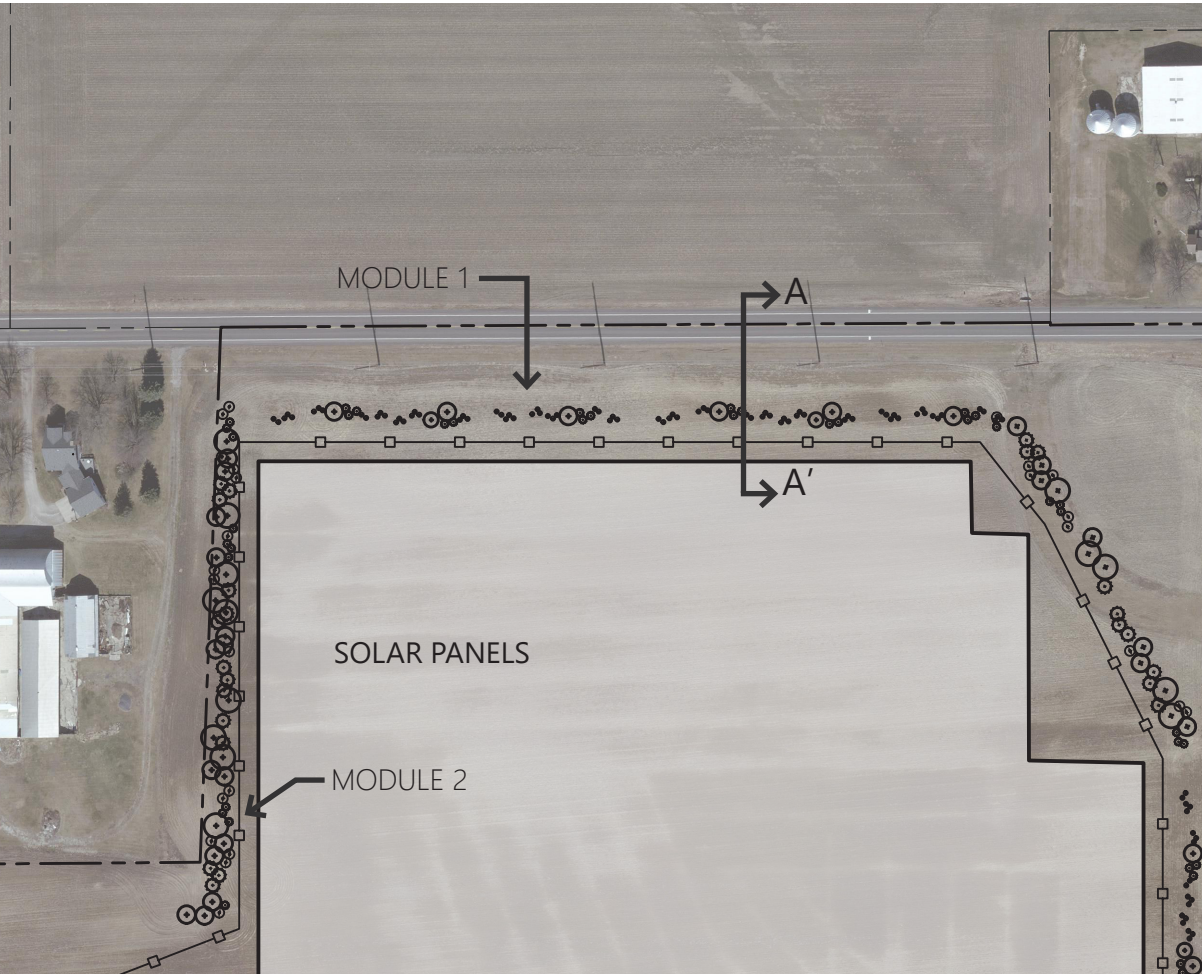


6.0 | CONCLUSIONS

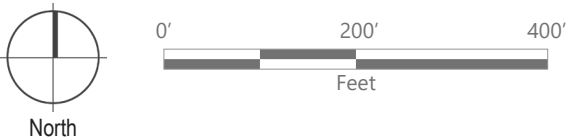
While the conceptual Plan described here is not designed to completely screen views of a proposed project, the introduction of native tree and shrub mixes will provide a visual buffer of natural vegetation between the project and the viewer, as well as pollinator seed mix plantings in select locations. These natural forms and colors are intended to divert attention from the modern materials and inorganic forms of the PV panel arrays. As demonstrated in the visual simulations included in the Arche Energy Project OPSB Application, the installation of a proposed landscape mitigation plan, upon reaching maturity, would better integrate the PV arrays into the character of the existing landscape.

Module 1 - Intermittent Screening

Existing Conditions: Agricultural fields, no existing hedgerow
View: Open views towards agricultural field with solar panel arrays
Treatment: Create buffer of native shrubs and trees to soften view of solar panels within landscape



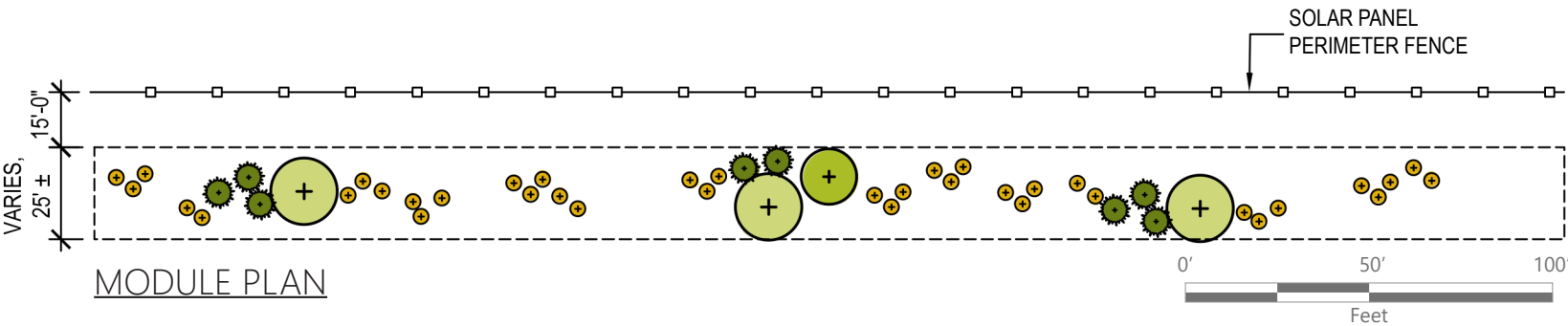
AERIAL MAP



A Public Road Open Field Native Trees & Shrubs Solar Panel Perimeter Fence Access Road PV Panel A'

CROSS-SECTION A-A' (NTS)

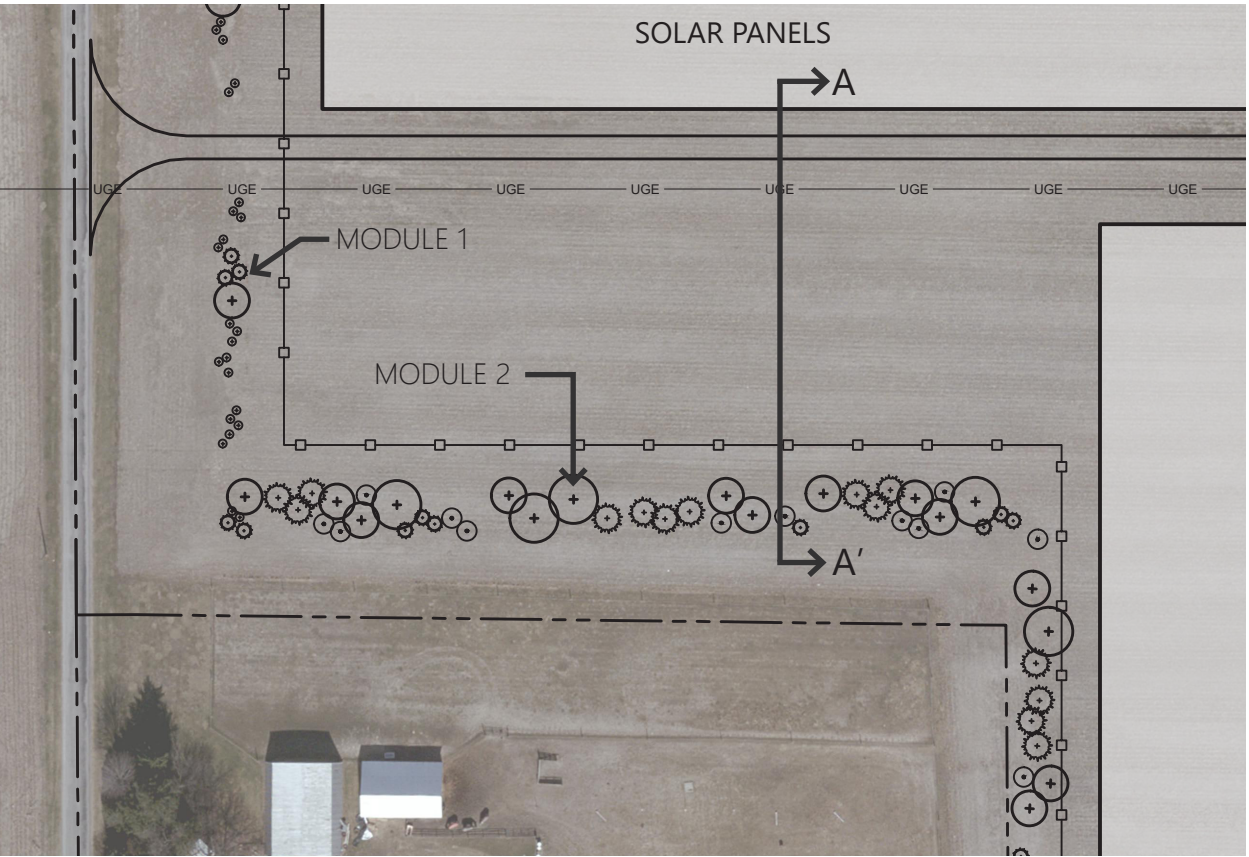
MODULE 1 - INTERMITTENT SCREENING SAMPLE PLANT LIST					
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	TYPE	MATURE SIZE
	<i>Acer rubrum</i>	Red Maple	1 3/4" cal.	B&B	40-70' H x 30-50' W
	<i>Aesculus glabra</i>	Ohio Buckeye	2" cal.	B&B	20-40' H x 20-40' W
	<i>Cornus racemosa</i>	Gray Dogwood	2' ht	#3 Cont.	8-15" H x 8-15' W
	<i>Juniperus virginiana</i>	Eastern Red-Cedar	5' ht	B&B	30-65' H x 8-25' W



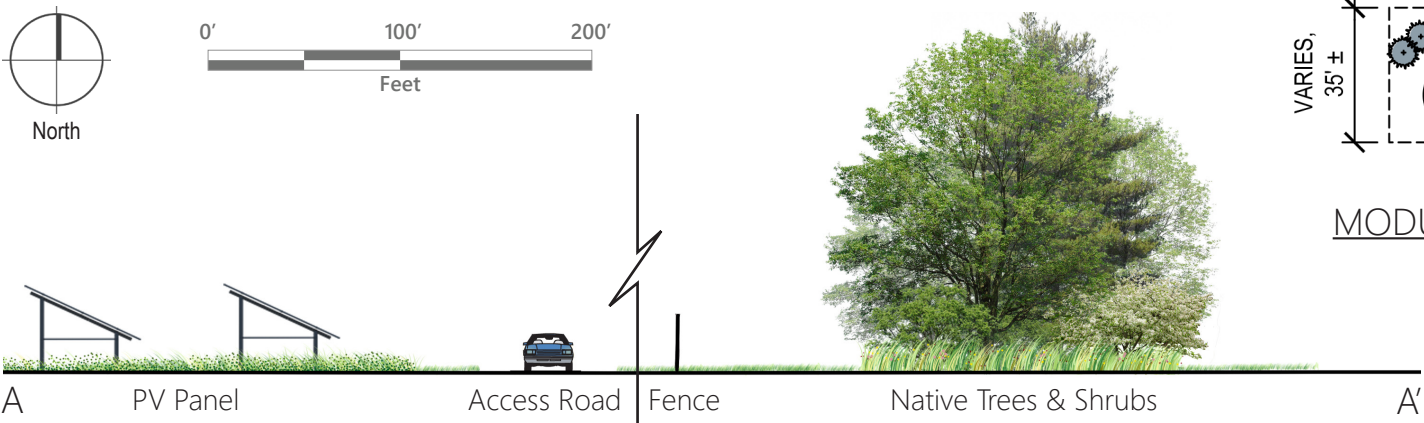
MODULE PLAN

Module 2 - Comprehensive Screening

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow
View: Open views towards agricultural field with solar panel arrays
Treatment: Create buffer of native trees & shrubs to soften view of solar panels within landscape

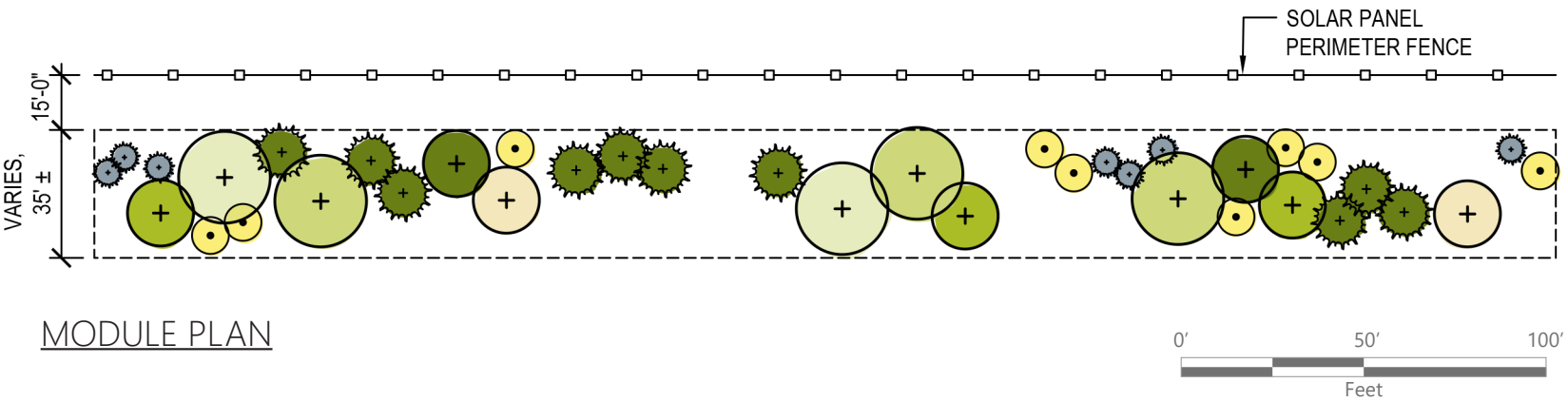


AERIAL MAP



CROSS-SECTION A-A' (NTS)

COMPREHENSIVE SCREENING SAMPLE PLANT LIST					
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	TYPE	MATURE SIZE
	<i>Amelanchier arborea</i>	Downy Serviceberry	6' ht.	B&B	15-25' H x 15-25' W
	<i>Aronia melanocarpa</i>	Black Chokeberry	3' ht.	B&B	5-10' H x 6-10' W
	<i>Cercis canadensis</i>	Eastern Redbud	6' ht.	#5 cont.	20-30' H x 25-35' W
	<i>Juniperus virginiana</i>	Eastern Red-Cedar	5' ht.	B&B	30-65' H x 8-25' W
	<i>Liquidambar styraciflua</i>	Sweet Gum	2" cal.	B&B	50-75' H x 35-40' W
	<i>Ostrya virginiana</i>	American Hop Hornbeam	1 3/4" cal.	B&B	25-40' H x 20-30' W
	<i>Picea glauca</i>	White Spruce	5' ht	B&B	40-60' H x 10-20' W
	<i>Pinus strobus</i>	Eastern White Pine	5' ht	B&B	70-80' H x 20-35' W
	<i>Quercus macrocarpa</i>	Bur Oak	2" cal.	B&B	50-80' H x 50-80' W
	<i>Quercus rubra</i>	Northern Red Oak	2" cal.	B&B	50-75' H x 50-75' W



**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

9/21/2022 11:34:53 AM

in

Case No(s). 20-0979-EL-BGN

Summary: Notice of Compliance with Condition No. 13 - Landscape Mitigation Plan
electronically filed by Teresa Orahood on behalf of Dylan F. Borchers