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November 29, 2022

Ms. Tanowa Troupe, Secretary
Ohio Power Siting Board
Docketing Division
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3797

Re: **Case Nos. 19-1881-EL-BGN and 21-508-EL-BGA -** In the Matter of the Application of Madison Fields Solar Project, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Madison County, Ohio.

Certificate Compliance Condition 13 – Landscape and Lighting Plan

Dear Ms. Troupe:

Madison Fields Solar Project, LLC's ("Applicant") is certified to construct a solar-powered electric generation facility in Madison County, Ohio, in accordance with the orders issued by the Ohio Power Siting Board ("OPSB") in Case Nos. 19-1881-EL-BGN and 21-508-EL-BGA on January 21, 2021, and October 21, 2021, respectively.

At this time, the Applicant is filing the Landscape and Lighting Plan in compliance with Condition 13 of the OPSB's January 21, 2021 order in Case No. 19-1881-EL-BGN. This information was provided to the Staff of the OPSB on November 29, 2022.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

/s/ Christine M.T. Pirik
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Cc: Matt Butler

4858-1626-6304 v1 [88534-2]

MADISON FIELDS SOLAR PROJECT
LANDSCAPE AND LIGHTING PLAN

November 29, 2022

Prepared for:
Madison Fields Solar Project, LLC

Prepared by:
Stantec Consulting Services, Inc.

Project Number: 2028113208

TABLE OF CONTENTS

1 Introduction

Madison Fields Solar Project, LLC (Madison Fields) proposes to develop a solar energy facility on privately owned agricultural land in Pike Township, Madison County, Ohio. The Madison Fields Solar Project (Project) is anticipated to have a footprint of approximately 1,305 acres in the larger 1,932-acre Project area. The Project area currently consists of row-crop agricultural lands, scrub-shrub, oak-hickory successional forest, developed, wetlands, and old field habitat. The Project will have a generating capacity of up to 180 megawatts alternating current and include photovoltaic (PV) solar panels (modules) mounted on a single-axis horizontal tracker racking system (mounted on posts) to maximize solar energy capture and electric generation of the array. Additional Project infrastructure will include access roads, inverters, electrical collection system, a substation and switchyard, and a short generation tie-line. The facility will be surrounded by wildlife friendly fencing.

Madison Fields received an Ohio Power Siting Board (OPSB) Certificate of Environmental Compatibility and Public Need (Certificate) for construction and operation of the Project on January 21, 2021. The OPSB approved an amendment for the Project on October 21, 2021. The Certificate included 19 conditions which must be satisfied prior to the start of construction as well as commitments made by Madison Fields within the OPSB Certificate application. Madison Fields requested Stantec's support in preparing plans to comply with Certificate Condition #13, which requires preparation of a Landscape and Lighting Plan (the Plan). The contents of the Landscape and Lighting Plan as specified in Certificate Condition #13 are as follows:

"Prior to the commencement of construction, Madison Fields, in consultation with a landscape architect licensed by the Ohio Landscape Architects Board, shall prepare a landscape and lighting plan 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. The plan should also describe the methods to be employed for fence repair. The plan shall include measures such as fencing, vegetative screening, or good neighbor agreements. Unless alternative mitigation is agreed upon with the owner of any such adjacent, non-participating parcel containing a residence with a direct line of sight to the fence of the facility, the plan shall provide for the planting of vegetative screening designed by the architect to enhance the view from the residence and to be in harmony with existing vegetation and viewshed in the area. Madison Fields shall maintain vegetative screening for the life of the facility and shall replace any failed plantings so that, after five years, at least 90 percent of the vegetation has survived. Madison Fields shall maintain all fencing along the perimeter of the project in good repair for the term of the project. Lights shall be motion activated and designed to narrowly focus light inward toward the facility. The plan shall be provided to Staff for review and confirmation that it complies with this condition. (Joint Ex. 1 at 5.)"

Based on Certificate Condition #13, the Plan will:

- Document the adjacent non-participating parcels containing a residence with a direct line of sight to the Project and non-participating parcels where a “Good Neighbor Agreement” (GNA) has been executed;
- Present a vegetative screening plan for adjacent non-participating residences with direct line of sight to the Project;
- Identify the fencing to be used for the Project and the monitoring and maintenance plan; and
- Provide a lighting plan for construction and operational phases of the Project.

Additional detail for each component is provided in subsequent sections within the Plan.

2 Project Visibility

Madison Fields identified all adjacent, non-participating parcels containing a residence, with a direct line of sight to the Project, based on the final Project design. Five parcels met these criteria. GNAs were executed with four of the five landowners originally identified, in addition to five other landowners in close proximity to the Project. Figure A-1 provides a map of residences participating in the Project through leases or GNAs, one adjacent non-participating parcel with a residence, and non-adjacent, non-participating parcels within the vicinity.

Madison Fields also completed an analysis of all residences within approximately 0.5 mile of the Project area to determine the distance to the nearest Project component. Each residence is individually numbered on Figure A-2, with a subset map zoomed in to allow for better identification of the residences in Rosedale, and correlates to the residence number included in Table 2-2.

Table 2-2. Distance from Nearby Residences to Project Features

Residence	Distance (ft)	Nearest Project Feature
1	3,218	Fence
3	1,232	Access Road
4*	1,353	Fence
5	1,488	Access Road
6	4,622	Fence
7*	2,036	Access Road
8*	517	Access Road
9	521	Fence
10*	370	Fence
11*	1,126	Access Road
12	2,990	Fence
13	2,096	Fence
14	1,909	Access Road
15*	676	Access Road
16*	288	Access Road
17*	802	Access Road
18	580	Access Road
19	2,864	Fence
20*	894	Fence
21*	814	Fence
22*	1,108	Fence
23*	1,099	Access Road
24	2,032	Fence
25	2,595	Fence

Residence	Distance (ft)	Nearest Project Feature
26	2,385	Fence
27	2,540	Fence
28	2,484	Fence
29	2,451	Fence
30	1,860	Fence
31	2,617	Fence
32	2,586	Fence
33	2,194	Fence
34	1,908	Fence
35	1,930	Fence
36	1,779	Fence
37	2,958	Fence
38	2,847	Fence
39	2,837	Fence
40	3,110	Fence
41	3,038	Fence
42	3,129	Fence
43	3,058	Fence
44	2,785	Fence
45	2,988	Fence
46	2,932	Fence
47	2,754	Fence
48	2,798	Fence
49	2,893	Fence
50	3,112	Fence
51	3,037	Fence
52	3,154	Fence
53*	384	Access Road
54	4,827	Access Road
55*	2,722	Access Road
56*	1,447	Fence
57	2,062	Fence
58	2,349	Fence
59	2,105	Fence
60	2,319	Fence
61	2,991	Fence
62	2,129	Fence
63	2,185	Fence
64	3,575	Fence
65	2,366	Fence

Residence	Distance (ft)	Nearest Project Feature
66	1,943	Fence
67	1,989	Fence
68	2,378	Fence
69	1,665	Fence
70	2,853	Fence
71	2,913	Fence
72	2,987	Fence

* Participating Residence

3 Screening Plan

As identified in Section 2, there is one adjacent non-participating parcel with a residence where a GNA has not been executed and vegetative screening will be necessary for compliance with Certificate Condition #13. Madison Fields will implement the screening plan described herein unless the landowner decides on an alternative screening plan. The proposed screening plan has been socialized with the landowner and was well received. The landowner has determined that they'd like to finalize the screening plan after construction of the Project is underway so they can better understand the visual impacts. Madison Fields is committed to installing a vegetative screen that is approved by the landowner.

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 create continuity with the surrounding area. This is most readily accomplished by mimicking components from the existing landscape so that newly introduced elements resemble their surroundings and do not needlessly call attention to themselves.

3.1 Design Methodology

The design methodology presented in this plan reflects the agricultural and naturalized context of the surrounding landscape. The following were considered when developing this plan:

- Distance between the non-participating residence and sightlines to the solar facility to be screened;
- Distance between the proposed vegetation and the solar facility equipment and potential for shading; and
- Unique ecological setting within the Darby Plains ecosystem.

These considerations led us to develop a strategy that filters views and blends the solar facility into the surrounding rural context, as well as provides visual screening. This plan does so in a manner that provides visual screening as required by the Certificate Condition #13 while providing functional habitat improvements to the landscape.

The first visual mitigation strategy for solar facilities includes a screen comprised of solely evergreen trees and shrubs. This strategy provides the most complete visual screen through the use of solely evergreen forms, creating a year-round hedge. This form of screen is often found within rural settings to create a privacy screen at the boundaries of residential properties; however, its repetitive shape and lack of diversity can draw attention when this form of planting is extended for long distances. In addition, since the selection of native evergreen screening trees and shrub species suitable for Ohio's growing conditions is limited, the use of ornamental species is often incorporated into this planting strategy to increase the diversity of plant material in an effort to prevent a solid row of a single (or limited) species. When selecting species for evergreen screening of solar facilities, mature height and functional screening

abilities must be considered to prevent potentially shading, yet still restricting the line of sight to adjacent solar panels. Of the evergreen trees and shrubs that meet these height and screening considerations, many are non-native species or cultivars of native species. While this planting methodology is best for restricting views, it does not fully provide some of the alternative benefits of a diverse species composition, so its use was not incorporated into these plans.

In contrast, a mix of native deciduous trees and shrubs can be used as an effective screening strategy. This mix consists of shrubs, canopy trees, and understory trees ranging from a maximum mature height of 8 feet to 80 feet, with the majority of species averaging 15 feet at maturity. This predominance of lower growing species helps provide heavy growth in the understory layer which provides rich habitat value for nesting and cover, while simultaneously increasing the visual screening potential of the vegetation. Given the proposed screenings unique location being further from the panels (so shading is not a restricting factor), a few larger canopy trees have been incorporated to further increase the habitat diversity provided, which also better mimics the surrounding landscape's character. Plantings would be clustered in groupings to mimic a naturalized establishment of vegetation and avoid continuous straightened rows that appear manmade, providing the most context to the surrounding ecological landscape. Utilizing solely native species maximizes the ecological benefits of the screening of this Project, while providing a screen that best matches the existing character of the landscape. The mix of Ohio native species also incorporates three species that are considered native to the Darby Plains.

3.2 Planting Palette

To create the planting palettes (Figure B.2) for the Project, Stantec considered information from The Ohio State University's Department of Plant Pathology website, the U.S. Department of Agriculture PLANTS website, the Selected Ohio Native Plants for Landscape and Restoration Use guides provided by the Ohio Department of Natural Resources, Darby Prairie Plants (March 2021), and the Ohio Department of Agriculture's Prohibited Invasive Plant list.

Existing vegetation in the surrounding landscape is a mix of open areas (primarily row-crop agriculture), scrub-shrub, old field, and wooded areas. Wooded areas in the Project area include and Oak-Hickory Successional Forest. The palette seeks to mimic this context using a mix of Ohio native species. In some cases, selected cultivars of native species are utilized for individual species in an effort to incorporate native species that provide known growth characteristics favorable for screening functions, such as a denser growing evergreen species.

3.3 Location of Visual Impact Mitigation Areas

The proposed conceptual planting screening plan in relation to the non-participating residence can be found in Appendix B, Figure B.1. Sheet B.2 in Appendix B shows the installation notes and details associated the establishment of this screening. Visual impact mitigation screening is concentrated on the western perimeter of the Project area on Irwin Road.

3.4 Vegetation Maintenance

Madison Fields will be responsible for purchase and installation of the materials to implement the screening plan and will maintain vegetative screening for the life of the Project. Madison Fields will replace any failed plantings so that, after five years, at least 90 percent of the vegetation has survived.

4 Project Fencing

Madison Fields has selected a wildlife friendly woven wire fence with wood posts to secure the exterior perimeter of the Project facility. The fencing will be 7 feet tall and have 6 inch by 6 inch openings to facilitate the passage of small animals in and out of the Project. The Project substation will be secured with 7-foot-tall chain link fence topped with three-strand barbed wire. The fencing design for the substation is required for compliance with the National Electric Safety Code. Fencing detail drawings are provided in Appendix C.

Throughout the course of Project operation, Madison Fields operations and maintenance staff will conduct regular inspections of the entire length of Project perimeter fencing. Madison Fields is committed to keeping the perimeter fencing in good repair throughout the life of the Project and will replace or fix any portions of the fence that are identified during inspections as not being in good repair within a timely manner. Additionally, should disrepair of the fence be identified by the public in between regular inspections, Madison Fields has a complaint resolution process established which would allow reporting of issues such as that and establishes a process to resolve those complaints.

5 Lighting Plan

To further minimize the potential for construction or operation impacts of the Project to nearby residents, Madison Fields proposes to adopt the following lighting practices.

During construction of the Project, working hours will be limited to between 7 a.m. and 7 p.m. or until dusk when sunset is later. Because work will primarily be done during daylight hours, there is minimal need for supplemental lighting to pose light pollution issues for nearby residences. However, during dawn and dusk, as well as during winter months when sunset is earlier, additional lighting will be needed. In those instances, portable lighting will be utilized and limited to the active work areas. The portable lighting will be pointed downward and away from roads and residences to minimize impacts. Lighting may be necessary for security surrounding the temporary construction trailer, as well as at staging areas and laydown yards. These security lights will be pointed downward and away from nearby residences or roadways to the extent practicable.

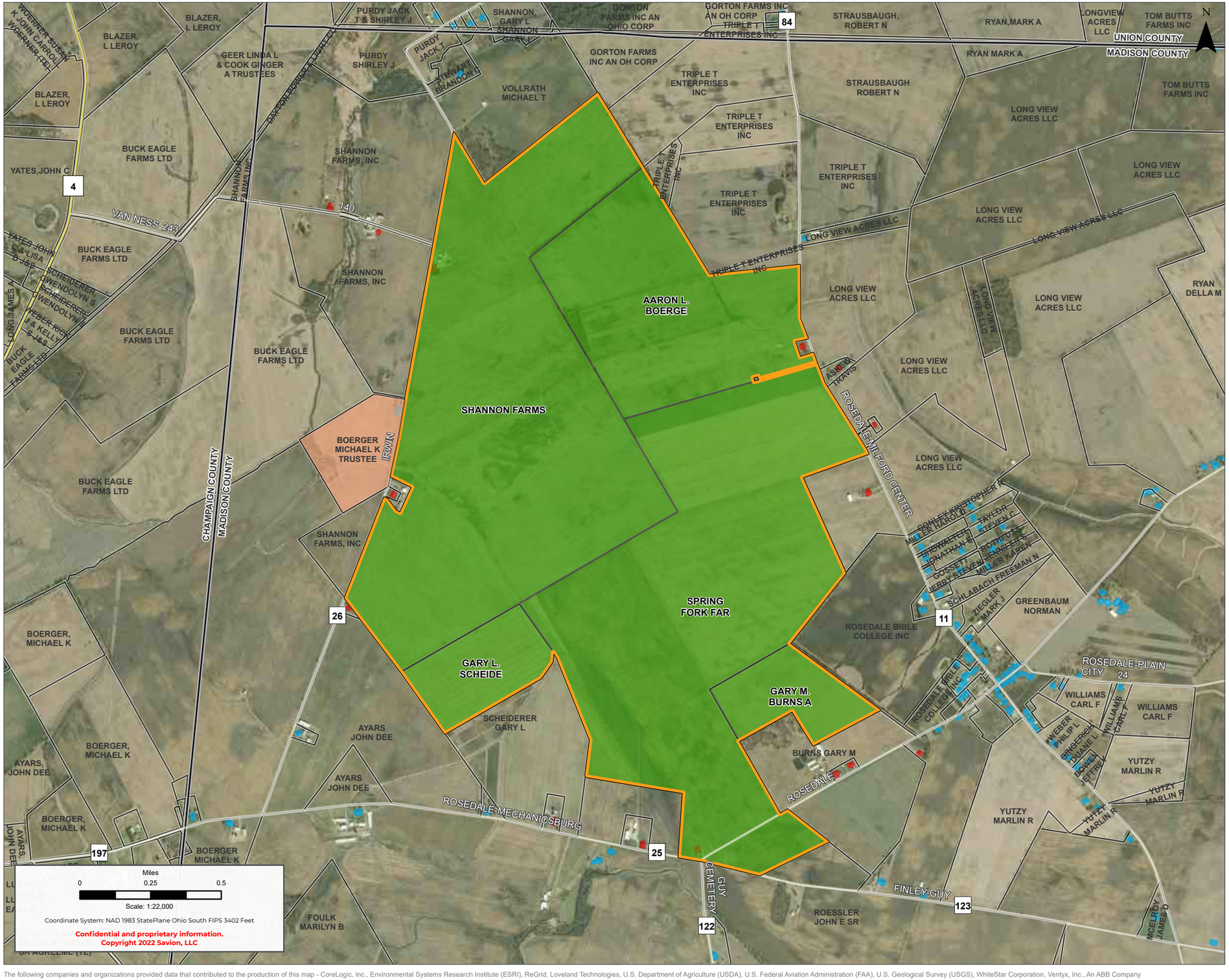
The need for lighting during operation of the Project is limited as most maintenance activities will occur during daylight hours and will not need supplemental lighting. The Project substation and First Energy switchyard will require lighting for safety and security. Lighting at the switchyard and substation has been developed in compliance with applicable federal and state requirements and will be operational throughout the nighttime hours. The installed lights will be downlit to reduce the impact on nearby residences and drivers. Drawings of the lighting plan for both the substation and switchyard are provided in Appendix D.

Complaints related Project lighting during construction or operation can be reported via the Complaint Resolution plan. Madison Fields will work to resolve these issues according to the plan’s procedures.

Appendix A: Residence Mapping

MADISON FIELDS SOLAR PROJECT

SAVION
A RENEWABLE ENERGY COMPANY



Project Boundary

Lease Status

Lease

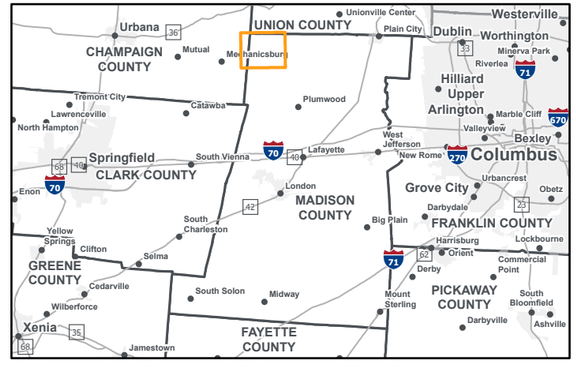
Prospecting Status

None

Existing Building Occupied Non-Participating

Existing Building Occupied Participating

Adjacent Non-Participating Parcels with Residences

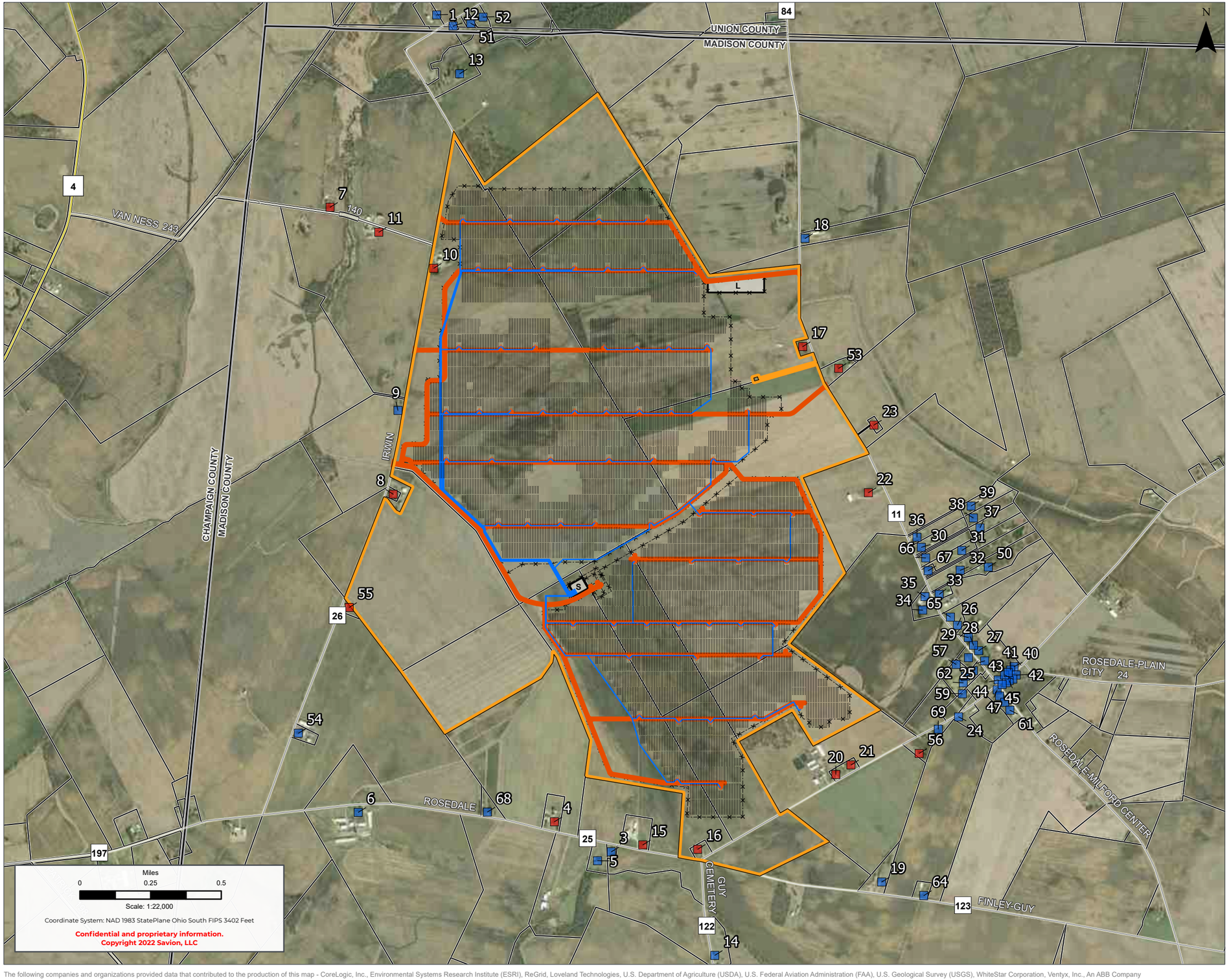


PRELIMINARY DESIGN – NOT FOR CONSTRUCTION

PROJECT: MADISON FIELDS	
DEVELOPER: SAVION, LLC	ENGINEER:
DATE: 11/28/2022	SCALE: 1 INCH : 1,833 FEET
NOTES:	
SHEET:	

MADISON FIELDS SOLAR PROJECT

SAVION
A RENEWABLE ENERGY COMPANY



- Project Boundary
- Property

Solar Array

- Inverter
- Panel

Electrical

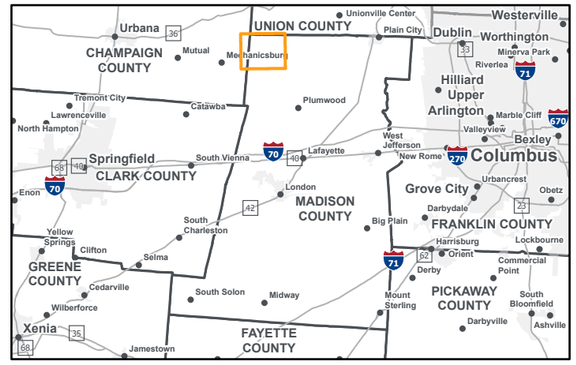
- UG Collection

Transportation

- Access Road
- Gate
- Fence

Facilities

- S — Substation
- L — Laydown Yard
- Participating Residence
- Non-Participating Residence



PRELIMINARY DESIGN – NOT FOR CONSTRUCTION

PROJECT: MADISON FIELDS	
DEVELOPER: SAVION, LLC	ENGINEER:
DATE: 11/9/2022	SCALE: 1 INCH : 1,833 FEET
NOTES:	

SHEET:
RECEPTOR DISTANCE FROM PROJECT COMPONENT

MADISON FIELDS SOLAR PROJECT

SAVION
A RENEWABLE ENERGY COMPANY

- Project Boundary
- Property

Solar Array

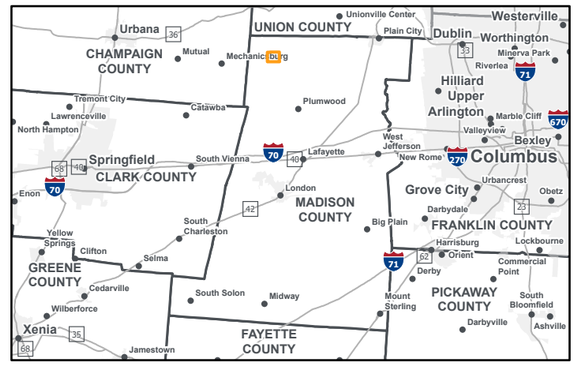
- Inverter
- Panel

Electrical

- UG Collection

Transportation

- Access Road
- Fence
- Participating Residence
- Non-Participating Residence



PRELIMINARY DESIGN – NOT FOR CONSTRUCTION

PROJECT: MADISON FIELDS	
DEVELOPER: SAVION, LLC	ENGINEER:
DATE: 11/9/2022	SCALE: 1 INCH : 500 FEET
NOTES:	

SHEET:
RECEPTOR DISTANCE FROM PROJECT COMPONENT SW FOCUS AREA

Appendix B: Preliminary Landscape Screening Plan

LEGEND

	NATIVE HABITAT LANDSCAPE SCREENING
	SITE BOUNDARY
	SECURITY FENCE
	SOLAR ARRAYS
	AREA FOR SUBSTATION
	ACCESS ROADS

INSET 1

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Stantec
5209 Center Street
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Client/Project

180 MW AC SOLAR PROJECT
MADISON FIELDS SOLAR PROJECT
MADISON COUNTY, OHIO

DRAFT

File Name: Madison_landscape_plan	SS	CD	DM	22.11.18
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Title

CONTEXT MAP

Project No.	Scale	
2028113208	AS SHOWN	
Drawing No.	Sheet	Revision
1	1 of 2	0

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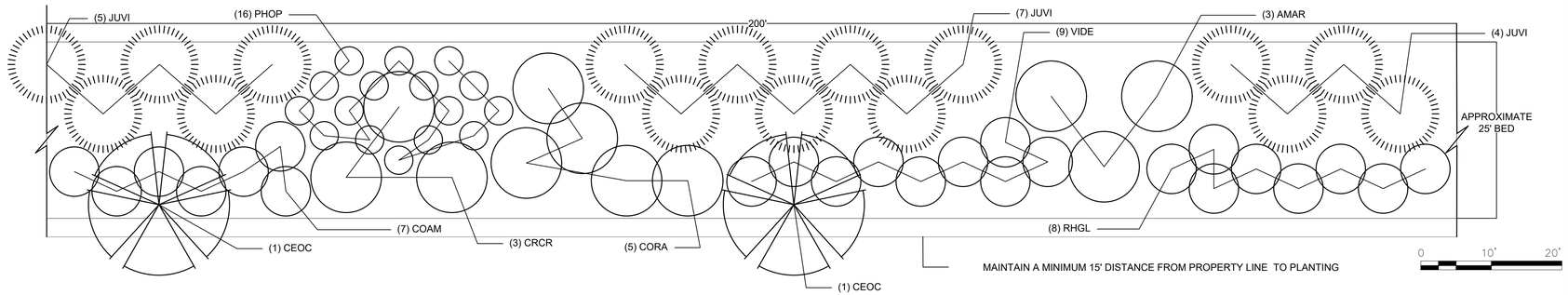
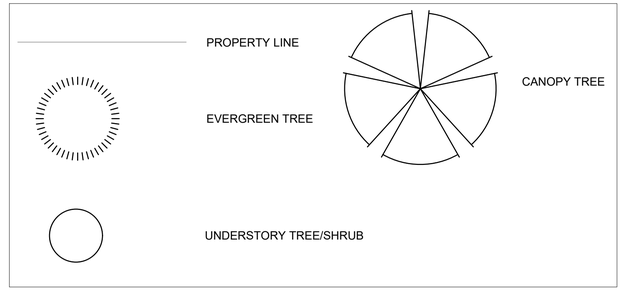
ORIGINAL SHEET - ANSI D

PLAN OF TYPICAL 200' SEGMENT OF NATIVE HABITAT LANDSCAPE SCREENING





NATIVE HABITAT LANDSCAPE SCREENING: 500 LF

SYMBOL	BOTANICAL NAME	COMMON NAME	APPROXIMATE MATURE HEIGHT	APPROXIMATE MATURE SPREAD	CONTAINER TYPE	CONTAINER TYPE	TOTAL ESTIMATED QUANTITY	NOTES
AMAR	AMELANCHIER ARBOREA*	DOWNY SERVICEBERRY	25'	25'	B&B	MULTI-STEM, MINIMUM 4' HEIGHT.	6	•SPACE PLANTS AS SHOWN IN TYPICAL LAYOUT. •INTENT IS TO LET THE CANOPIES GROW TOGETHER AND CREATE A FILTERED VIEW OF THE SOLAR EQUIPMENT.
CEOC	CELTIS OCCIDENTALIS*	COMMON HACKBERRY	80'	80'	B&B	MINIMUM 6' HEIGHT, MINIMUM 1.5" CALIPER	5	
CORA	CORNUS RACEMOSA*	GRAY DOGWOOD	15'	15'	CONTAINER	MINIMUM 24" HEIGHT	15	
COAM	CORYLUS AMERICANA*	AMERICAN HAZELNUT	15'	10'	CONTAINER	MINIMUM 24" HEIGHT	21	
CRCR	CRATAEGUSS CRUS-GALLI*	COCKSPUR HAWTHORN	25'	25'	B&B	MINIMUM 5' HEIGHT, MINIMUM 1" CALIPER	9	
JUVI	JUNIPERUS VIRGINIANA 'HETZII'*	HETZII REDCEDAR	15'	15'	CONTAINER	MINIMUM 4' HEIGHT	40	
PHOP	PHYSOCARPUS OPULIFOLIUS*	COMMON NINEBARK	8'	6'	CONTAINER	MINIMUM 24" HEIGHT	48	
RHGL	RHUS GLABRA*	SMOOTH SUMAC	15'	10'	CONTAINER	MINIMUM 3' HEIGHT	16	
VIDE	VIBURNUM DENTATUM*	ARROWWOOD VIBURNUM	12'	10'	CONTAINER	MINIMUM 24" HEIGHT	18	
**NATIVE SPECIES*						**TOTAL QUANTITY**	**178**	

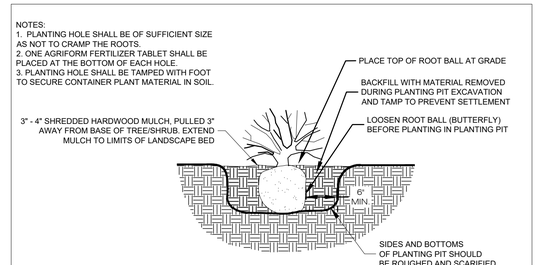
VEGETATIVE SCREENING NOTES:

SHRUB AND TREE INSTALLATION

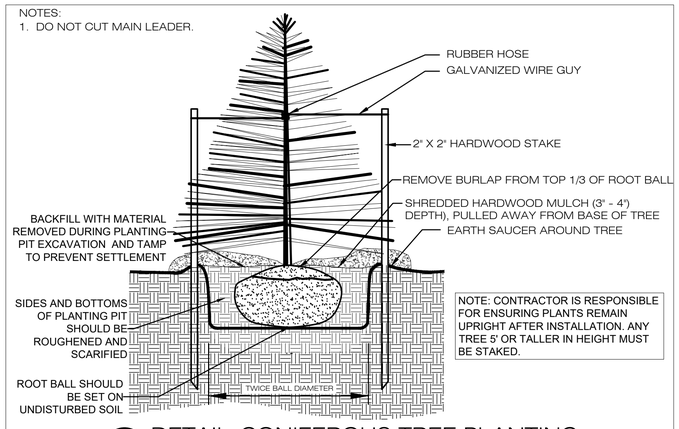
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL WORK COVERED UNDER THESE PLANS.
2. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNIFORMLY BRANCHED AND HAVE A VIGOROUS ROOT SYSTEM. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE FROM DEFECTS, DECAY, DISEASES, INSECT PEST EGGS, AND ALL FORMS OF INFESTATION. ALL PLANT MATERIAL SHALL BE FRESH, FREE FROM TRANSPLANT SHOCK OR VISIBLE WILT. PLANTS DEEMED UNHEALTHY SHALL BE REJECTED.
3. ALL PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS AND STANDARDS DESCRIBED IN THE CURRENT ISSUE OF "THE AMERICAN STANDARD FOR NURSERY STOCK," PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, 1250 I STREET, N.W., SUITE 500, WASHINGTON, D.C. 20005.
4. ALL CONTAINER STOCK SHALL HAVE BEEN PROPAGATED IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL. CONTAINER STOCK WITH POORLY DEVELOPED ROOT SYSTEMS SHALL NOT BE ACCEPTED.
5. PLANTS SHALL BE PREPARED FOR SHIPMENT IN A MANNER THAT SHALL NOT CAUSE DAMAGE TO THE BARK, BUDS, BRANCHES, STEMS, OR OVERALL SHAPE OF THE STOCK. CONTAINER GROWN PLANTS SHALL BE TRANSPORTED IN THE CONTAINERS IN WHICH THEY HAVE BEEN GROWN.
6. PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL AT THE SITE SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. OUTSIDE STORAGE AREAS SHALL BE SHADED AND PROTECTED FROM THE WIND AND SUN. PLANTS STORED ON SITE SHALL BE PROTECTED FROM ANY DRYING AT ALL TIMES BY COVERING THE BALLS OR ROOTS WITH MOIST SAWDUST, WET BURLAP, WOOD CHIPS, SHREDDED BARK, PEAT MOSS, OR OTHER SIMILAR MULCHING MATERIAL.
7. PLANT SUBSTITUTIONS MAY BE MADE BASED ON AVAILABILITY BUT MUST BE OF SIMILAR SIZE AND LANDSCAPE (SCREENING) VALUE. ALL SUBSTITUTIONS MUST BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.
9. NO PLANTING SHALL OCCUR WHEN THE SOIL IS FROZEN.

PLANTING SEQUENCE

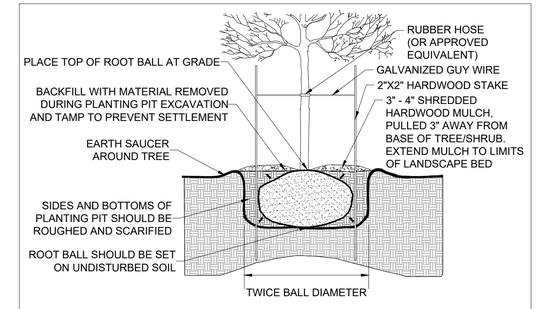
1. DIG THE PLANTING HOLE A MINIMUM OF 2x WIDTH OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH. BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PERMIT ADJUSTING. DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH.
2. HOLES FOR INDIVIDUAL PLANTINGS SHALL BE EXCAVATED TO PRODUCE VERTICAL SIDES AND FLAT BOTTOMS. ALL PLANTING HOLES SHALL HAVE ROUGHED, SCARIFIED SIDES AND BOTTOMS.
3. THE CONTRACTOR SHALL APPLY AGRIFORM FOREST STARTER TABLETS, OR EQUIVALENT PRODUCT, TO EACH PLANT AS PER MANUFACTURER'S DIRECTIONS ON LABEL AT TIME OF PLANTING.
4. LIFT AND SET THE TREE BY ROOT BALL ONLY. DO NOT LIFT USING THE TREE TRUNK AND DO NOT USE TREE TRUNK AS A LEVER.
5. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY HIGHER IF THE SOIL IS PRONE TO SETTLING.
6. BACKFILL WITH EXISTING TOPSOIL THAT HAS BEEN WELL-TILLED OR BROKEN UP.
7. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.
8. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.
9. THE CONTRACTOR SHALL RESTORE AREAS DISTURBED BY THE INSTALLATION OF SHRUBS AND TREES.



DETAIL: CONTAINER SHRUB INSTALLATION
N.T.S.



DETAIL: CONIFEROUS TREE PLANTING
N.T.S.



DETAIL: TREE PLANTING
N.T.S.

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Stantec
5209 Center Street
Williamsburg, VA 23188
www.stantec.com

Client/Project

180 MW AC SOLAR PROJECT

MADISON FIELDS SOLAR PROJECT

MADISON COUNTY, OHIO

DRAFT

File Name: madison_landscape_plan	SS	DM	CD	22.11.28
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

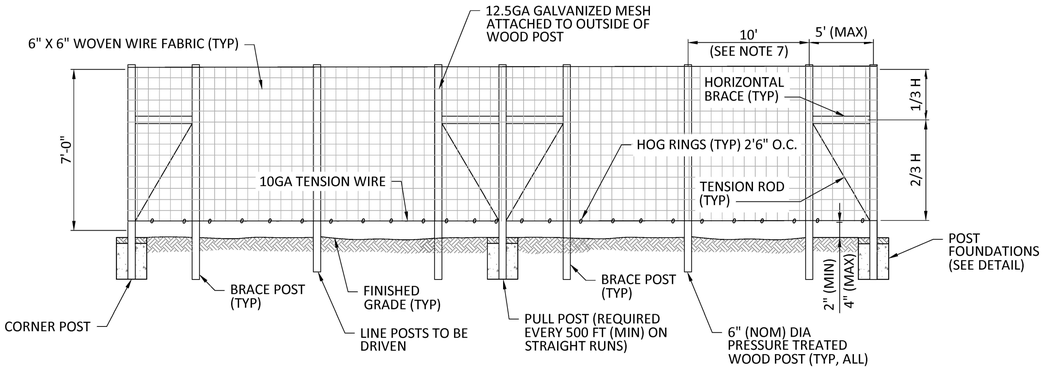
Title

PLANTING SCHEDULE AND DETAILS

Project No.	Scale	
2028113208	AS SHOWN	
Drawing No.	Sheet	Revision
2	2 of 2	0

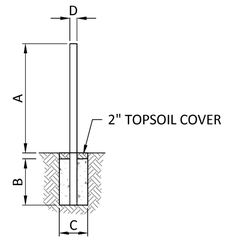
ORIGINAL SHEET - ANSI D

Appendix C: Fencing Details



SOLAR SITE FENCE DETAIL

NTS (NOT TO SCALE)



FOUNDATION IN SOIL

NTS

POST TYPE	MINIMUM HEIGHT ABOVE GROUND A (FT-IN)	DEPTH IN SOIL B (IN)	CONC FOUNDATION DIAMETER * C (IN)	POST DIAMETER D (IN)
LINE POST	7'-0"	36	N/A	5" - 6"
TERMINAL/END POST	7'-0"	43	12" MIN	6" - 7"
CORNER/PULL POST	7'-0"	43	12" MIN	6" - 7"
BRACE POST	7'-0"	43	N/A	6" - 7"
4" STEEL GATE POST	7'-0"	36	12" MIN	4"

* WHEN REQUIRED BY GEOTECHNICAL EOR

NOTE:

THE MINIMUM HEIGHTS MAY REQUIRE ADDITIONAL LENGTH TO MEET THE GRADE REQUIREMENTS OF A GIVEN DESIGN.

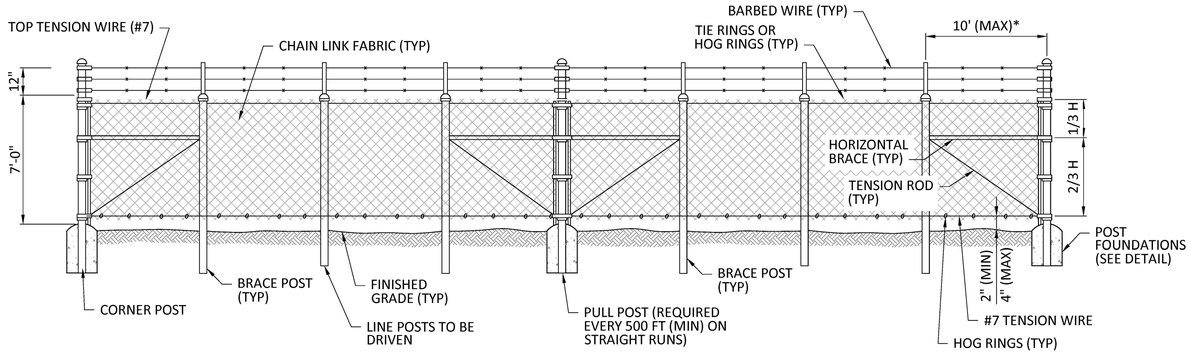
SOLAR FENCE AND GATE POST FOUNDATION DETAIL

NOTES:

1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE INSTALLED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. ALL FENCE FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE SECURE AREA.
2. REFER TO CM-008 FOR THE FENCING & GATE SPECIFICATIONS AND ADDITIONAL INFORMATION.
3. LINE AND BRACE POSTS ARE INTENDED TO BE DRIVEN IN PLACE. CONTRACTOR MAY USE DIFFERENT MEANS FOR INSTALLATION.
4. REFER TO SITE PLAN 'CS' SERIES DRAWINGS FOR AGRICULTURAL FENCE, SUBSTATION FENCE, AND ALL GATE LOCATIONS.
5. AUGER DRILLED HOLES SHALL BE THE SAME NOMINAL DIAMETER AS THE POST SIZE (TYP).
6. CONCRETE FOUNDATIONS SHALL BE COVERED WITH +/-2" OF TOPSOIL, AND SHALL BE FLUSH WITH THE BOTTOM OF CONCRETE TO ALLOW FOR FREEZE/THAW WEEPING.
7. LINE POST SPACING SHALL BE OPTIMIZED BASED ON FENCE ALIGNMENT, NOT TO EXCEED 10'.
8. CONTRACTOR SHALL IMPLEMENT EFFORTS TO AVOID ENTRAPPING WILDLIFE WITHIN THE SOLAR ARRAY DURING CONSTRUCTION/INSTALLATION OF THE FENCE. THE SOLAR FACILITY SHALL BE CHECKED REGULARLY OR HAVE STRUCTURES INSTALLED TO ALLOW WILDLIFE TO ESCAPE.
9. GROUNDING BY OTHERS.

CONCRETE SPECIFICATIONS

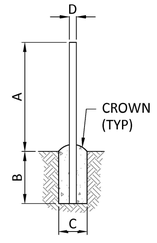
1. USE 2,500 PSI MINIMUM 28 DAY CONCRETE COMPRESSIVE STRENGTH.
2. CONCRETE MIX SHALL USE TYPE 1A. MAX W/C RATIO .60 & CONCRETE SLUMP 4" MAX.
3. CONSOLIDATE PLACED CONCRETE WITH MECHANICAL VIBRATING EQUIPMENT, PER ACI 301.



* OPTIMIZE POST SPACING BASED ON FENCING LAYOUT

SUBSTATION FENCE DETAIL

NTS



FOUNDATION IN SOIL

NTS

POST TYPE	MINIMUM HEIGHT ABOVE GROUND A (FT-IN)	DEPTH IN SOIL B (IN)	CONC FOUNDATION DIAMETER * C (IN)	POST DIAMETER D (IN)
LINE POST	7'-0"	36	N/A	1.9"
TERMINAL/END POST	8'-0"	43	12" MIN	2.375"
CORNER/PULL POST	8-0"	43	12" MIN	2.375"
BRACE POST	8'-0"	43	N/A	1.660"
4" GATE POST	8'-0"	36	12" MIN	4"

* WHEN REQUIRED BY GEOTECHNICAL EOR

NOTE:

THE MINIMUM HEIGHTS MAY REQUIRE ADDITIONAL LENGTH TO MEET THE GRADE REQUIREMENTS OF A GIVEN DESIGN.

SUBSTATION FENCE AND GATE POST FOUNDATION DETAIL

REV	DESIGN BY	CHECKED BY	DATE
0	ISSUED FOR CONSTRUCTION		
	P. GREEN	N. BEECHER	11-04-22

MADISON FIELDS SOLAR PROJECT

Kiewit

SAVION
A RENEWABLE ENERGY COMPANY

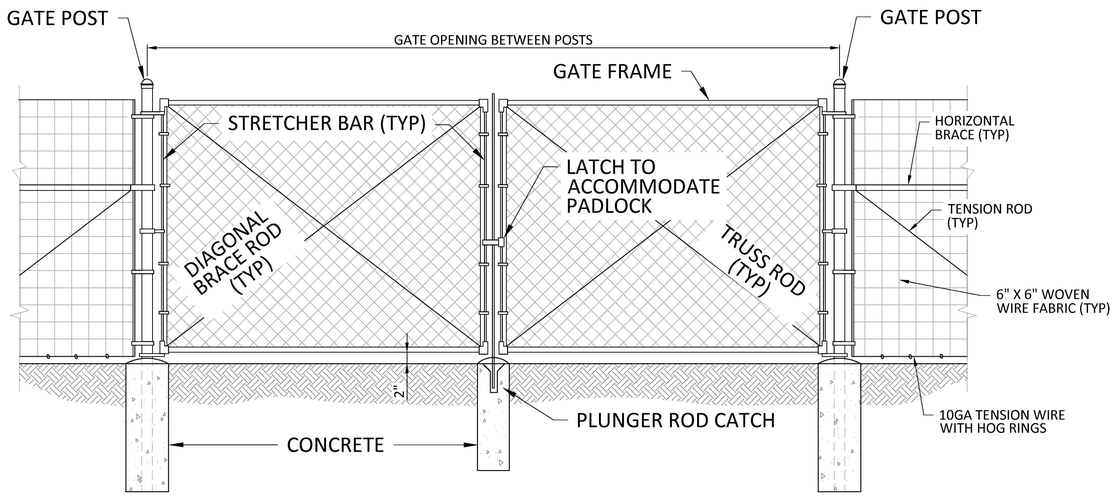
STATE OF OHIO
John Tucker
JOHN TUCKER
E-88074
REGISTERED
PROFESSIONAL ENGINEER

FENCING DETAILS

ENGINEER/DESIGN ORIGINATOR	P. GREEN
LEAD ENG	J. TUCKER
ENG MGR	T. BEST
PROJ MGR	T. BEST

DRAWING NUMBER

20036602-CD-061



DOUBLE SWING GATE
DETAIL
NTS

NOTES:

1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE INSTALLED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. ALL FENCE FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE SECURE AREA.
2. REFER TO CM-008 FOR THE FENCING & GATE SPECIFICATIONS AND ADDITIONAL INFORMATION.
3. LINE AND BRACE POSTS ARE INTENDED TO BE DRIVEN IN PLACE. CONTRACTOR MAY USE DIFFERENT MEANS FOR INSTALLATION.
4. REFER TO SITE PLAN 'CS' SERIES DRAWINGS FOR AGRICULTURAL FENCE, SUBSTATION FENCE, AND ALL GATE LOCATIONS.
5. AUGER DRILLED HOLES SHALL BE THE SAME NOMINAL DIAMETER AS THE POST SIZE (TYP).
6. CONCRETE FOUNDATIONS SHALL BE COVERED WITH +/-2" OF TOPSOIL, AND SHALL BE FLUSH WITH THE BOTTOM OF CONCRETE TO ALLOW FOR FREEZE/THAW WEEPING.
7. LINE POST SPACING SHALL BE OPTIMIZED BASED ON FENCE ALIGNMENT, NOT TO EXCEED 10'.
8. CONTRACTOR SHALL IMPLEMENT EFFORTS TO AVOID ENTRAPPING WILDLIFE WITHIN THE SOLAR ARRAY DURING CONSTRUCTION/INSTALLATION OF THE FENCE. THE SOLAR FACILITY SHALL BE CHECKED REGULARLY OR HAVE STRUCTURES INSTALLED TO ALLOW WILDLIFE TO ESCAPE.
9. GROUNDING BY OTHERS.

CONCRETE SPECIFICATIONS

1. USE 2,500 PSI MINIMUM 28 DAY CONCRETE COMPRESSIVE STRENGTH.
2. CONCRETE MIX SHALL USE TYPE 1A. MAX W/C RATIO .60 & CONCRETE SLUMP 4" MAX.
3. CONSOLIDATE PLACED CONCRETE WITH MECHANICAL VIBRATING EQUIPMENT, PER ACI 301.

REV	DESIGN BY	CHECKED BY	DATE
0	ISSUED FOR CONSTRUCTION		
	P. GREEN	N. BEECHER	11-04-22

MADISON FIELDS SOLAR PROJECT

Kiewit

SAVION
A RENEWABLE ENERGY COMPANY

STATE OF OHIO
JOHN TUCKER
E-88074
REGISTERED
PROFESSIONAL ENGINEER

FENCING DETAILS

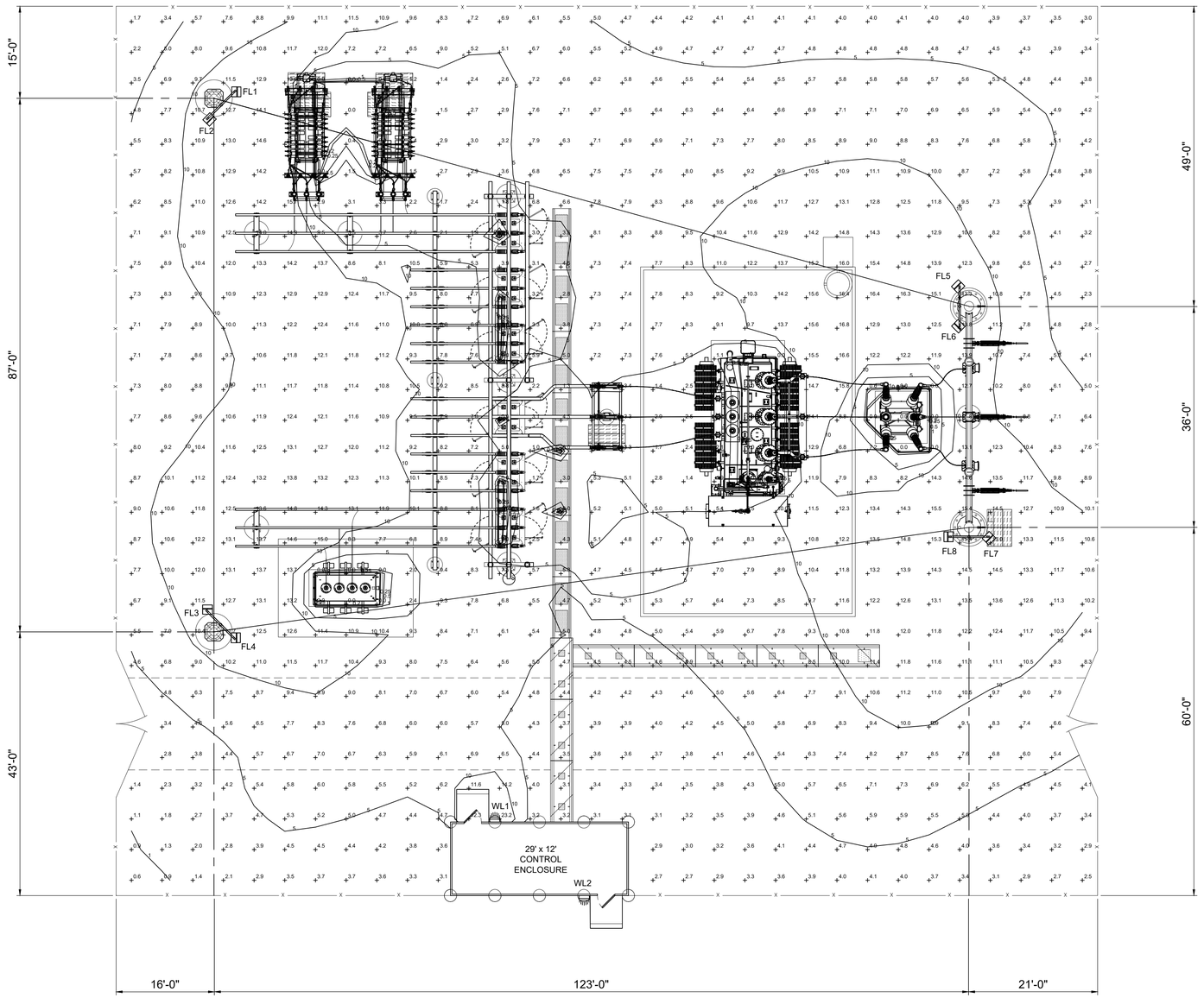
ENGINEER/DESIGN ORIGINATOR	P. GREEN
LEAD ENG	J. TUCKER
ENG MGR	T. BEST
PROJ MGR	T. BEST

DRAWING NUMBER

20036602-CD-062

Appendix D: Substation and Switchyard Lighting Drawings

LIGHT FIXTURE DETAILS			
LIGHT FIXTURES	ORIENTATION (DEG.) HORIZONTAL PLANE	TILT (DEG.) VERTICAL PLANE	MOUNTING HEIGHT (FT)
FL1 (A)	90°	35°	35
FL2 (A)	135°	35°	35
FL3 (A)	0°	35°	35
FL4 (A)	90°	35°	35
FL5 (A)	315°	35°	35
FL6 (A)	225°	35°	35
FL7 (A)	135°	35°	35
FL8 (A)	270°	35°	35
WL1 (B)	0°	45°	8
WL2 (B)	180°	45°	8

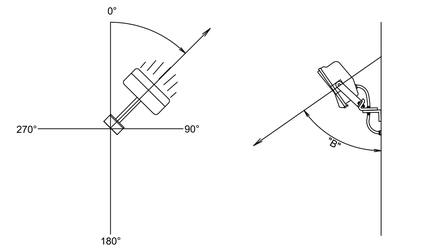


LEGEND

—— # ——	ILLUMINATION CONTOUR (FOOT CANDLE) AT 3'-0" ABOVE GROUND LEVEL
	360W LED FLOODLIGHT
	25W LED WALL PACK

REFERENCE DRAWINGS

GENERAL ARRANGEMENT PLAN	20036602-PDS-500



0 10' 20'

SCALE IN FEET
3/32"=1'-0"

- PRELIMINARY -
NOT FOR CONSTRUCTION

REV			
A	ISSUED FOR 60% REVIEW		
	J. MESSER	D. JOHNSON	10-07-22
REV	DESIGN BY	CHECKED BY	DATE

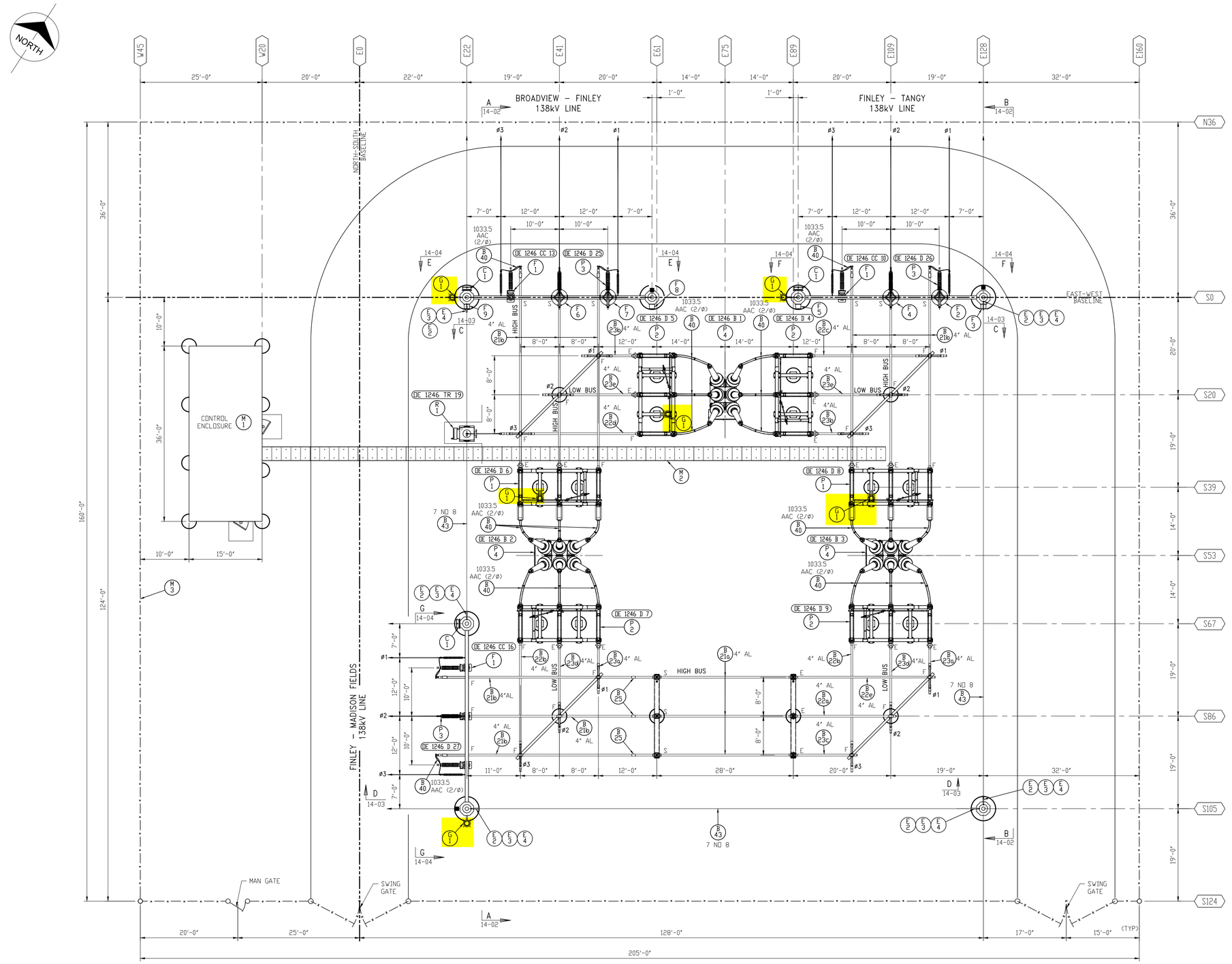
SAVION
MADISON FIELDS SOLAR

Kiewit
KIEWIT POWER ENGINEERS
LICENSE #COA.01218

138 - 34.5KV SUBSTATION
LIGHTING PLAN

ENGINEER/DESIGN ORIGINATOR	D. JOHNSON
LEAD ENG	A. TAYLOR
ENG MGR	T. BEST
PROJ MGR	N. SCHIEGNER

DRAWING NUMBER
20036602-PDS-530



NOTES:

1. IF THE CONNECTOR IS SUBJECT TO FREEZING AND IS INSTALLED SUCH THAT THE BARREL MAY COLLECT WATER (UPRIGHT POSITION OR IF THE CONDUCTOR IS ENTERING THE FITTING FROM ABOVE), THEN A ¼" DIAMETER WEEP HOLE SHOULD BE DRILLED FROM THE LOWEST POINT OF THE BARREL INTO THE END OF THE BORE.
2. DRILL ¼" DIAMETER WEEP HOLE AT THE LOWEST POINT OF EACH BUS SECTION FOR DRAINAGE.
3. BUS LENGTHS SHOWN ARE ESTIMATED AND THAT EXACT FIELD MEASUREMENTS MUST BE TAKEN SO THAT ACCURATE BUS LENGTHS CAN BE CUT.
4. BUS DAMPER WIRE MUST BE INSTALLED IN ALL BUSSES NOTED ON THE DRAWING. BUS DAMPER WIRE SHOULD BE PRE-STRETCHED AND TACK WELDED AT BOTH ENDS INSIDE THE TUBING.
5. ALL CONNECTORS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. LEVELING DISTANCE SHALL BE 3" MEASURED FROM TOP OF CONCRETE TO BOTTOM OF BASEPLATE UNLESS OTHERWISE SPECIFIED. LEVELING HEIGHT SHALL NOT EXCEED 3-1/4". CONTACT ENGINEER ABOUT ANY LEVELING HEIGHTS THAT EXCEED THIS REQUIREMENT.
7. FIELD FURNISH & INSTALL JUNCTION BOX FOR YARD LIGHT WIRING CONNECTIONS AS NEEDED.

LEGEND:

- E – EXPANSION FITTING
- F – FIXED FITTING
- S – SLIP FITTING
- ● OPERATING SHAFT LOCATION
- ■ MOTOR OPERATOR SHAFT LOCATION

ELECTRICAL DESIGN CLEARANCES				
MAX. SYSTEM VOLTAGE	MINIMUM	DESIGN	MINIMUM	DESIGN
	Ø-G	Ø-G	Ø-Ø	Ø-Ø
145 KV 550 BIL	42"	45"	53"	84"
FE ENGINEERING TO BE CONTACTED BEFORE LESS THAN DESIGN CLEARANCES NEED TO BE USED.				

BY: M J
APP: SRC
DATE: %DATE%
ISSUE: CONSTRUCTION
DRAWING BY BURNS & McDONNELL.

FirstEnergy
Energy Delivery Technical Services

DIST. CODE: –
SCALE: 1"=10'-0"
SIZE: 36x24

OPERATING COMPANY: OHIO EDISON (OE)
REGION: OH-SO
AREA: MARION
FACILITY: FINLEY

TITLE: GENERAL ELECTRICAL LAYOUT PLAN VIEW 138kV

SAP NETWORK NO.: 17120959
DOC. ID: 0-1246-14-01
REV.: –

Revision/Date

Summary: Notice - Certificate Compliance Condition 13 – Landscape and Lighting Plan electronically filed by Christine M.T. Pirik on behalf of Madison Fields Solar Project, LLC