

# BLOSSOM SOLAR LANDSCAPE STRATEGIES



**Introduction**

The Blossom Solar project is in northwestern Morrow County, Ohio. It is generally bordered by Iberia Bucyrus Road to the west, and State Route 38 to the east, and State Route 8 to the north, and Harding Highway East / 309 to the south. Flat to gently rolling topography composed of existing agricultural land and several large stands of trees and hedgerows in and around the project area, characterize the site.

The goals for landscape mitigation are threefold, with the primary goal of, over time, diffusing the view of the solar panels and reducing their presence on the landscape. Secondly, the planting design should fit into the existing rural vernacular by picking up on cues from the existing landscape features. Thirdly, the landscape should provide enduring ecological and sustainable value to the region.

**Design Approach**

The landscape mitigation design begins with an understanding of the existing landscape conditions and features that can serve as inspiration for the proposed design, to assure that it fits the existing context and appears to blend in versus stand out. The linear nature of the existing perimeter road network presents an opportunity to complement the existing hedgerows, and strategically plant new hedgerows that help to diffuse views of the solar panel arrays from near and afar. Where necessary, additional attention has been paid to site-specific conditions. Supplemental exhibits have been prepared throughout this document, to illustrate the deployment of specific modules and depict their effectiveness in mitigating views of the arrays.

Blossom Solar is proposing a modular system, consisting of native plants, that scales from medium density to high density and high density with evergreens, which is deployed on site in a 25 ft. band in select locations outside of the installed perimeter fence, The plant selections, from shorter native grasses, wildflower seed mixes and woody shrubs, to small and large trees, provide ecological benefits in the form of pollinator species for bees and other insects, food, and cover for small mammals. Once established, the plantings will absorb a great deal of storm water and filter chemical runoff from agricultural areas where possible. If practicable,

fencing around the perimeter of the buildable area will be selected to allow wildlife to move freely through the planting modules and into the secured array areas to maximize their ability to secure food and cover.

The Medium-Density planting module will be used to provide screening where arrays are near the road network and existing residential property boundaries and existing topography and vegetation are not providing view mitigation. Medium density planting combines pollinator seed mixes, ranging in height from 2-4 feet tall with a mix of warm and cool season grasses, perennial wildflowers, with multi-stem trees, ranging from 15-25 feet in height, to help diffuse views of the arrays from vehicular and pedestrian vantage points. Woody shrub masses are interspersed throughout to provide additional screening and food and cover for wildlife.

The High-Density planting module will provide a greater degree of view filtering where the arrays are closest to residential property boundaries and roads and additional height and mass are needed to help diffuse the views of the arrays. The high-density module builds on the medium density module by adding shade trees to the plant mix. Shade trees will provide long-term density and height to help screen views from higher vantage points. Large shade trees also provide additional ecological benefits in the form of bird and small mammal nesting locations, food and cover for beneficial insects and greater stormwater absorption capability.

The High-Density with Evergreens planting module will provide the highest degree of view filtering where the arrays are closest to residential property boundaries and roads and additional height, mass, and diffusion are needed to help diffuse the views of the arrays. With the addition of evergreen trees and double the quantity of small trees and shade trees, the module will provide the highest level of view mitigation, ecological benefits, and stormwater absorption.

**Plant Establishment and Maintenance**

Key to providing a sustainable (maintainable) and enduring landscape of any sort, is to start with plant selection and installation to put the plants in a position to succeed. A small percentage of

plant death is expected in the designed landscape; however, our installation and maintenance approach aim to achieve a high success rate. Our design does not rely on a 100% success rate to meet our goal of diffusing views of the solar panel arrays. Plants will be replaced selectively to maintain an appropriate amount of screening. Our approach begins with native plant selections which generally take less input energy (and water and soil amendments) to establish and maintain long-term, since they are adapted to the local / regional soil, water, and climate conditions.

Given that we have a matrix of pollinator plants, grasses, shrubs, and trees proposed for this landscape, it will take a strategic approach to plant and establish them. Trees, small trees / large shrubs, and smaller woody shrubs should be planted first. Planting the larger materials first, will allow the more delicate seed mix to be planted without being disturbed. Also, this sequence gives the smaller trees and shrubs time to establish while the grasses and perennials are shorter in the first year or two and are less likely to shade out the shrubs and trees, effectively, giving them a head start.

Planting from seed typically results in higher rates of success than plugs or containerized plants. Seeds have a better chance to adapt and establish with minimal resources of water and soil. Timing is an important consideration for any plant type. Seeding generally should occur between fall and late spring, which puts the plants in place when temperatures are right for germination. When dormant, bare-root woody plant materials can be planted between December 1 and April 15<sup>th</sup>. This reduces plant shock and stress, and the plants are in place when temperature and moisture become available. With respect to woody plant material, planting smaller “installed-size” plant material (bare-root, or small caliper or container), typically results in higher rates of plant survival, due to less impact / stress to the plant root system during transplant.

Tree and shrub planting would follow the current best practices outlined by the International Society of Arboriculture, (ISA) (<https://www.isa-arbor.com/education/onlineresources/cadplanningspecifications>) to make sure that the plants have the best chance of survival. Plant procurement is also very important and special attention will be paid to the selection of plant

material for this project. Proper plant structure, root flare location, and disease-free plants are important characteristics for a successful planting. Plants that do not meet the specifications will be rejected and replaced.

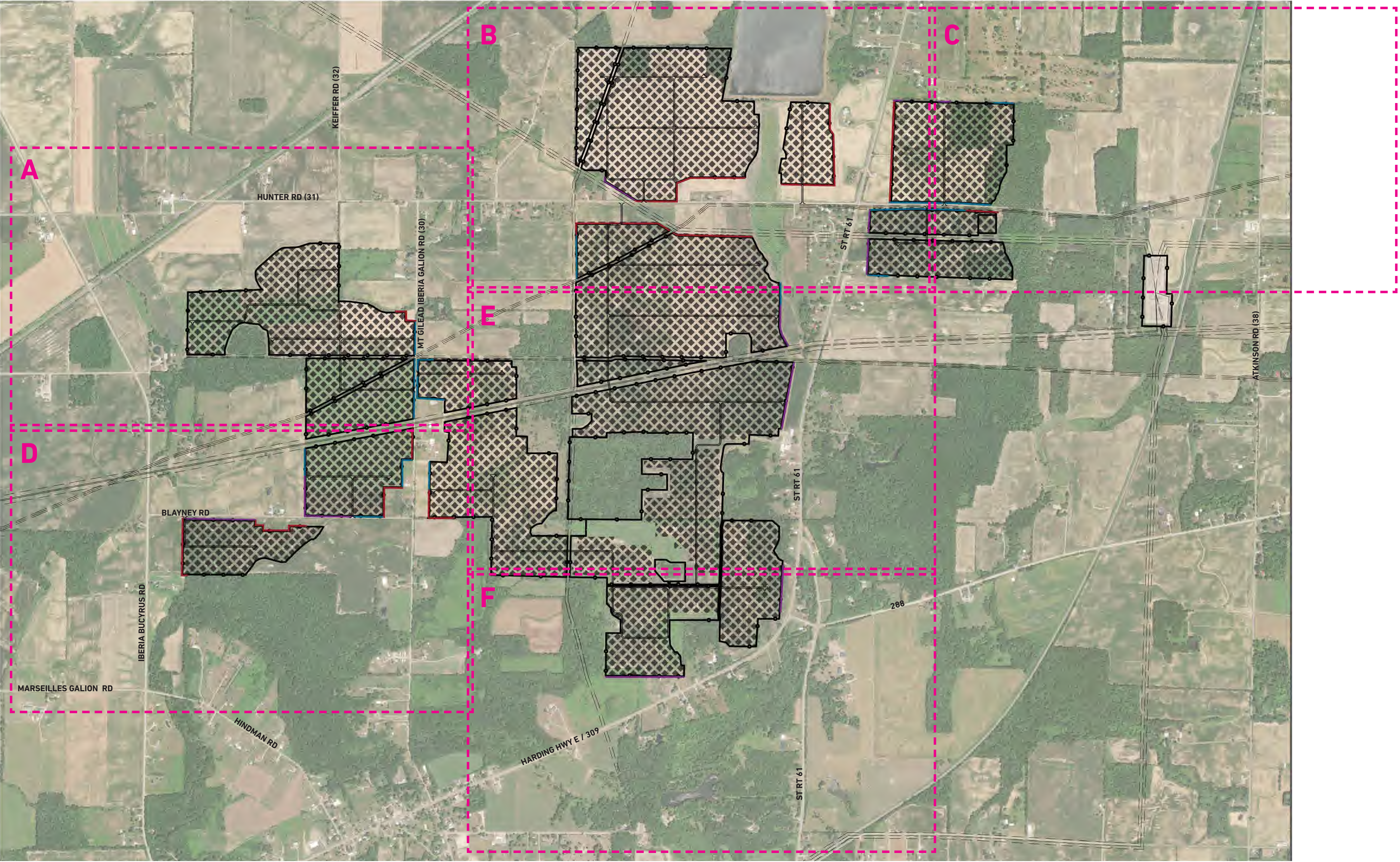
Pollinator mixes typically require 2-3 years to fully establish themselves. During this period, periodic mowing will take place to keep annual and perennial weeds at bay and encourage the establishment of pollinator species. Woody plant materials (trees, shrubs) establish over the course of 1-2 years with faster growth rates beginning in years 3-5 as root systems begin to recover from transplant shock and emerge from the rootball and root into native soils.

Lastly, maintaining the designed species mix is important to allow the desirable plants to thrive. Therefore, removing invasive species is important to give the plants a chance to establish and limit room for invasive species to root. Onsite and nearby Invasive plants must first be identified by trained staff to be sure that the right plants are removed. It is good practice to remove existing invasive species prior to planting new landscapes. The maintenance team will reference the Ohio Invasive Plants Council - “Invasive Plants of Ohio” document (<https://www.oipc.info/invasive-plants-of-ohio.html%20>) and the USDA – “Ohio State-listed Noxious Weeds” ([Ohio State-listed Noxious Weeds](#)) as a starting point for identifying and removing invasive species. This gives the maintenance team a good understanding of what invasive species they may encounter in the future. The invasive plants need to be removed with care to avoid damaging desirable plants. Educating and assisting adjacent property owners about invasive species and ways to control their introduction and spread, will be important to the overall success of maintaining the landscape.

**Conclusion**

The landscape mitigation design for the Blossom Solar project aims to complement and enhance the existing rural vernacular landscape through designed hedgerows and native pollinator plantings, while reducing the visual impact of the photovoltaic panels on neighboring properties. Added benefits of pollinator support, wildlife cover and habitat and stormwater absorption, broaden the impact of the central, sustainable goals of the overall project.









# BLOSSOM SOLAR | AREA A PLANTING STRATEGY

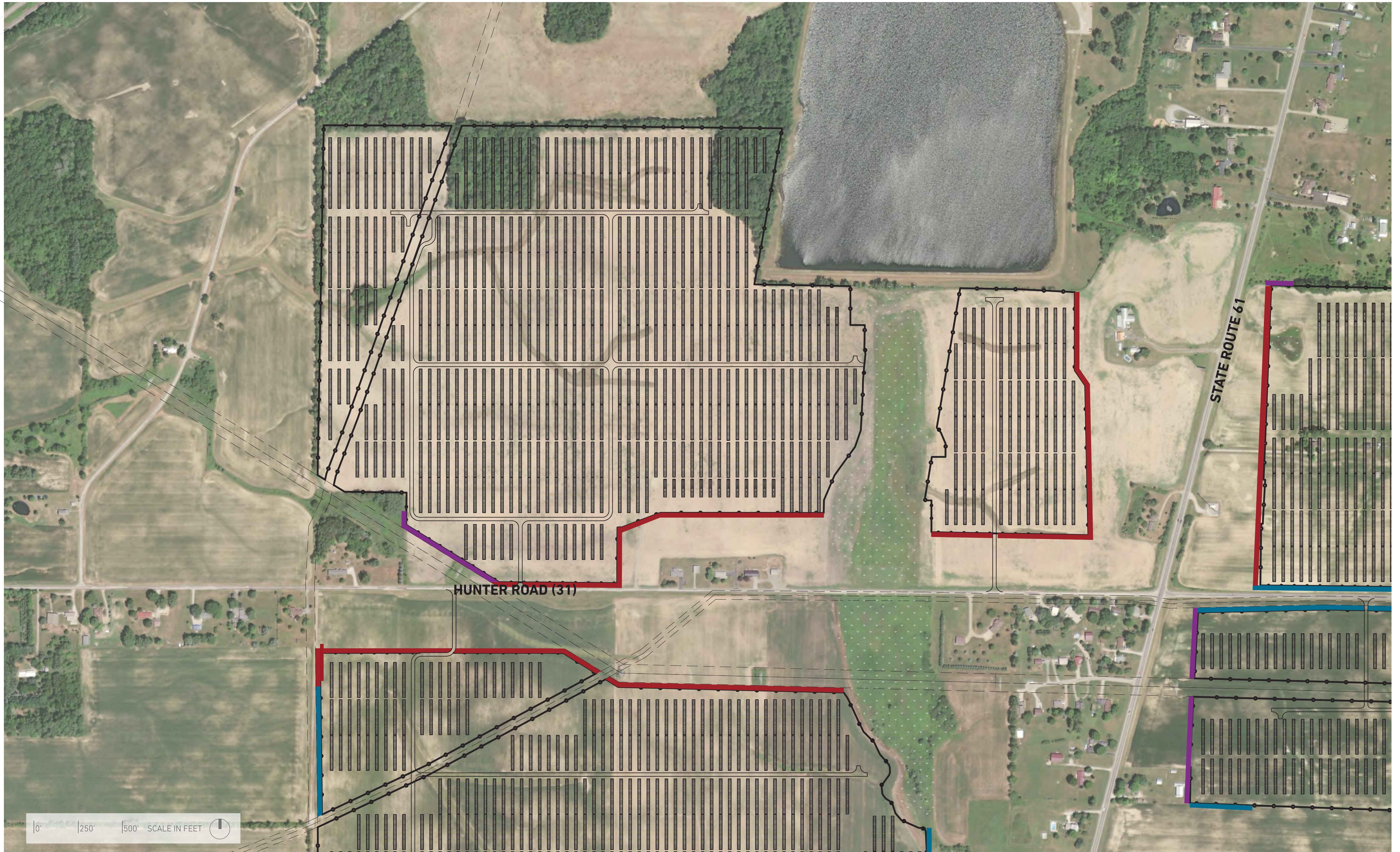
MEDIUM DENSITY PLANTING

HIGH DENSITY PLANTING

HIGH DENSITY WITH EVERGREEN PLANTING

BUILDABLE AREA





# BLOSSOM SOLAR | AREA B PLANTING STRATEGY

MEDIUM DENSITY PLANTING

HIGH DENSITY PLANTING

HIGH DENSITY WITH EVERGREEN PLANTING

BUILDABLE AREA

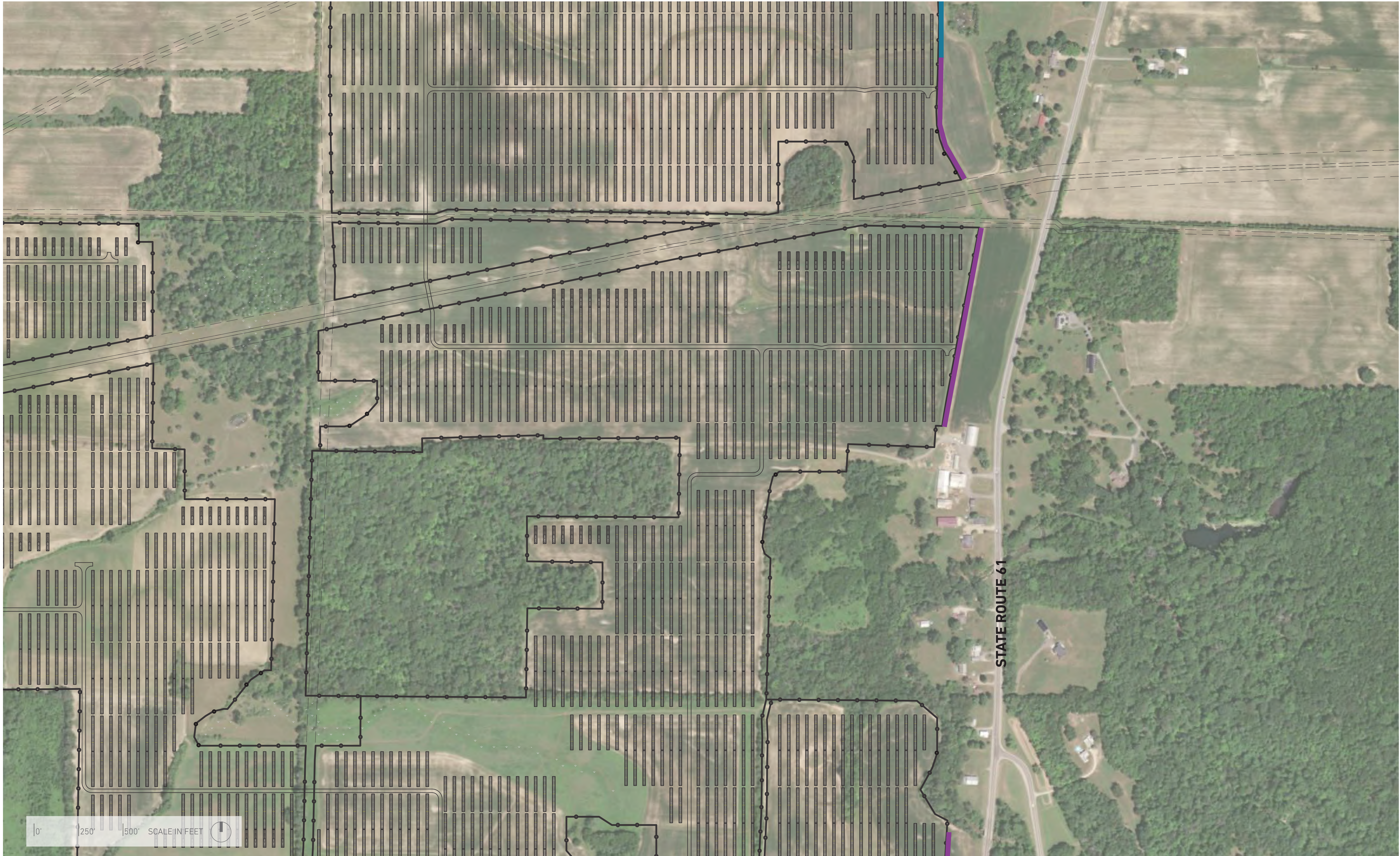












BLOSSOM SOLAR | AREA E PLANTING STRATEGY

- MEDIUM DENSITY PLANTING
- HIGH DENSITY PLANTING
- HIGH DENSITY WITH EVERGREEN PLANTING
- BUILDABLE AREA



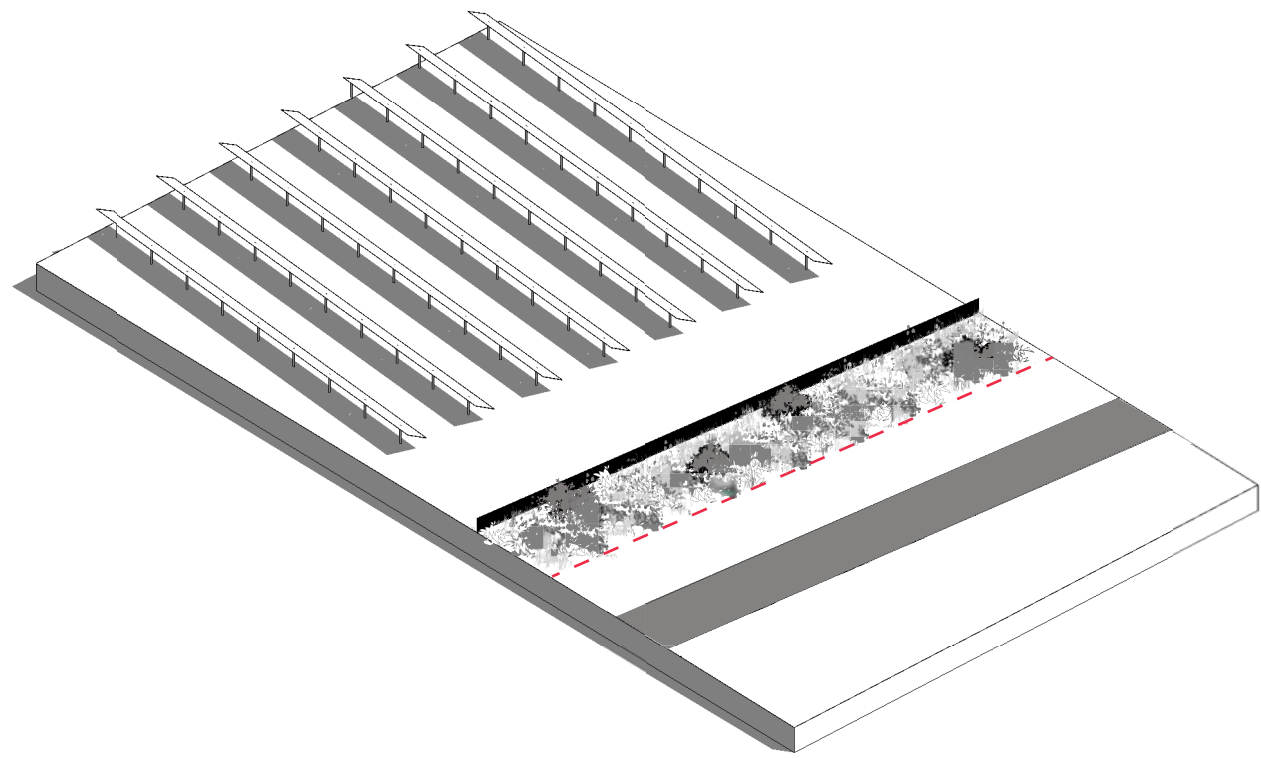


BLOSSOM SOLAR | AREA F PLANTING STRATEGY

- MEDIUM DENSITY PLANTING
- HIGH DENSITY PLANTING

- HIGH DENSITY WITH EVERGREEN PLANTING
- BUILDABLE AREA

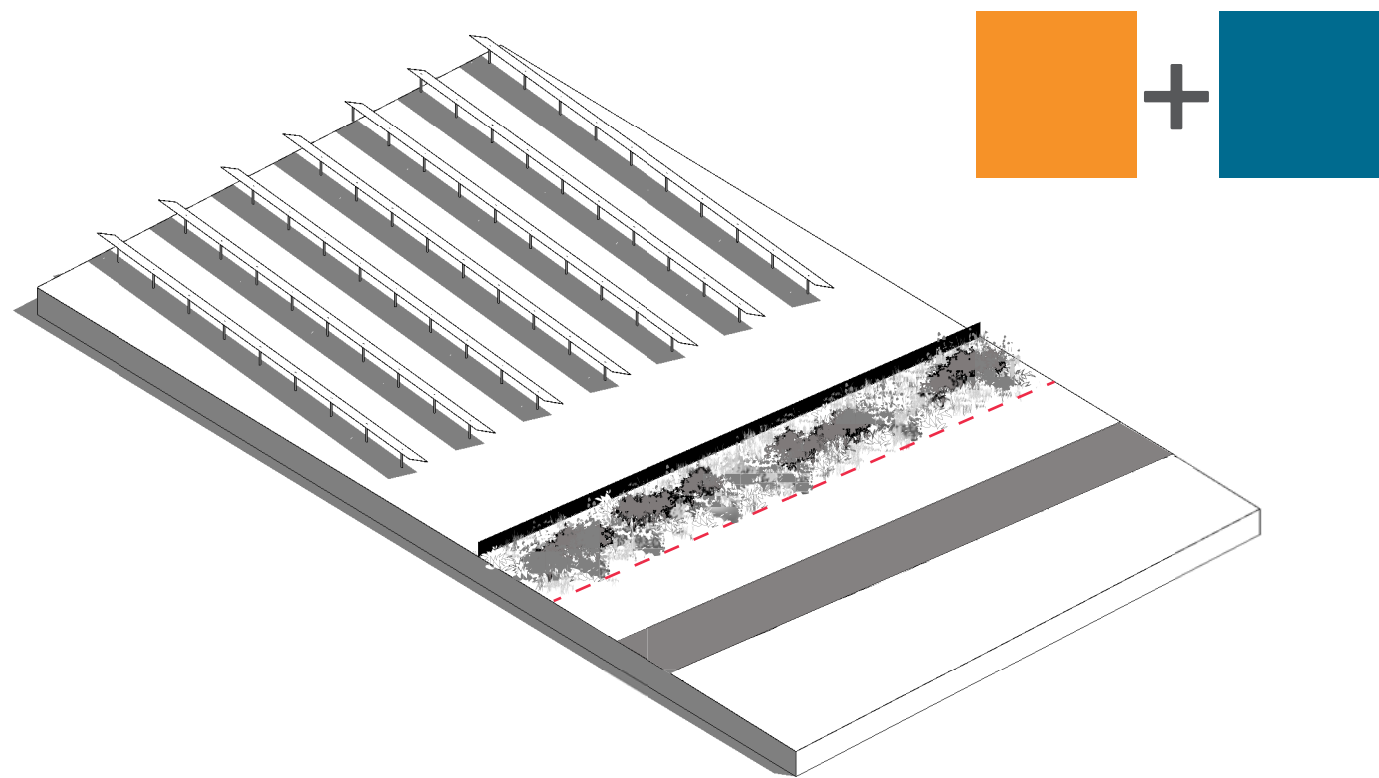




COMMON NAME	SCIENTIFIC NAME	SIZE AT PLANTING	BLOOM TIME
<strong>SHRUBS</strong>			
BLACK CHokeberry	ARONIA MELANOCARPUS	18"-24" HT #3 CONT.	MAY
BAYberry	MYRICA PENsYLVANICA	18"-24" HT #3 CONT.	
NINEBARK	PHYSOCARPUS OPULIFOLIUS	18"-24" HT #3 CONT.	MAY TO JUNE
SMOOTH SUMAC	RHUS GLABRA	18"-24" HT #3 CONT.	JUNE
ARROWWOOD VIBURNUM	VIBURNUM DENTATUM	18"-24" HT #3 CONT.	MAY TO JUNE
NANNYBERRY	VIBURNUM LENTAGO	18"-24" HT #3 CONT.	MAY
<strong>POLLINATOR MIX</strong>			
<u>PERMANENT GRASSES/SEDGES</u>			
SIDE-OATS GRAMA	BOUTELOUA CURTIPENDULA		JULY-AUG
PRAIRIE SEDGE SPECIES	CAREX SPP.		
CANADA WILD RYE	ELYMUS CANADENSIS		JULY-OCT
JUNE GRASS	KOELERIA MACRANTHA		JUNE-JULY
SWITCH GRASS	PANICUM VIRGATUM		JULY-SEPT
LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM		JULY-OCT
<u>TEMPORARY COVER</u>			
COMMON OAT	AVENA SATIVA		JUNE-JULY
ANNUAL RYE GRASS	LOLIUM MULTIFLORUM		MAY-SEP
<u>FORBS</u>			
LEAD PLANT	AMORPHA CANESCENS		JUNE-AUG
COMMON MILKWEED	ASCLEPIAS SYRIACA		JUNE-AUG
BUTTERFLY WEED	ASCLEPIAS TUBEROSA		JUNE-AUG
WHITE WILD INDIGO	BAPTISIA ALBA		JUNE-JULY
PARTRIDGE PEA	CHAMAECRISTA FASCICULATA		JUNE-SEPT
LANCELEAF COREOPSIS	COREOPSIS LANCEOLATA		MAY-JULY
PRAIRIE COREOPSIS	COREOPSIS PALMATA		JUNE-AUG
WHITE PRAIRIE CLOVER	DALEA CANDIDA		MAY-JUNE
PURPLE PRAIRIE CLOVER	DALEA PURPUREA		JUNE-AUG
PURPLE CONEFLOWER	ECHINACEA PURPUREA		JUNE-AUG
RATTLESNAKE MASTER	ERYNGIUM YUCCIFOLIUM		JUNE-SEPT
ROUNDHEADED BUSHCLOVER	LESPEDEZA CAPITATA		JULY-SEPT
ROUGH BLAZINGSTAR	LIATRIS ASPERA		JULY-OCT
WILD LUPINE	LUPINUS PERENNIS V. OCCIDENTALIS		MAY-JULY
WILD BERGAMOT	MONARDA FISTULOSA		JULY-SEPT
STIFF GOLDENROD	OLIGONEURON RIGIDUM		AUG-OCT
WILD QUININE	PARTHENIUM INTEGRIFOLIUM		JUNE-SEPT
FOXGLOVE BEARD TONGUE	PENSTEMON DIGITALIS		APRIL-JUNE
HAIRY BEARD TONGUE	PENSTEMON HIRSUTUS		MAY-JUNE
GREY-HEADED CONEFLOWER	RATIBIDA PINNATA		JUNE-AUG
BLACK-EYED SUSAN	RUDBECKIA HIRTA		JUNE-SEPT
SWEET BLACK-EYED SUSAN	RUDBECKIA SUBTOMENTOSA		JULY-SEPT
PRAIRIE DOCK	SILPHIUM TEREBINTHINACEUM		JULY-SEPT
SHOWY GOLDENROD	SOLIDAGA SPECIOSA		SEPT-NOV
HEATH ASTER	SYMPHYOTRICHUM ERICIODES		AUG-OCT
SMOOTH BLUE ASTER	SYMPHYOTRICHUM LAEVE		AUG-OCT
NEW ENGLAND ASTER	SYMPHYOTRICHUM NOVAE-ANGLIAE		AUG-OCT
COMMON SPIDERWORT	TRADESCANTIA OHIENSIS		MAY-JULY
HOARY VERVAIN	VERBENA STRICTA		JUNE-SEPT
SMOOTH TALL IRONWEED	VERNONIA GIGANTEA		AUG-OCT
CULIVER'S ROOT	VERONICASTRUM VIRGINICUM		MAY-AUG

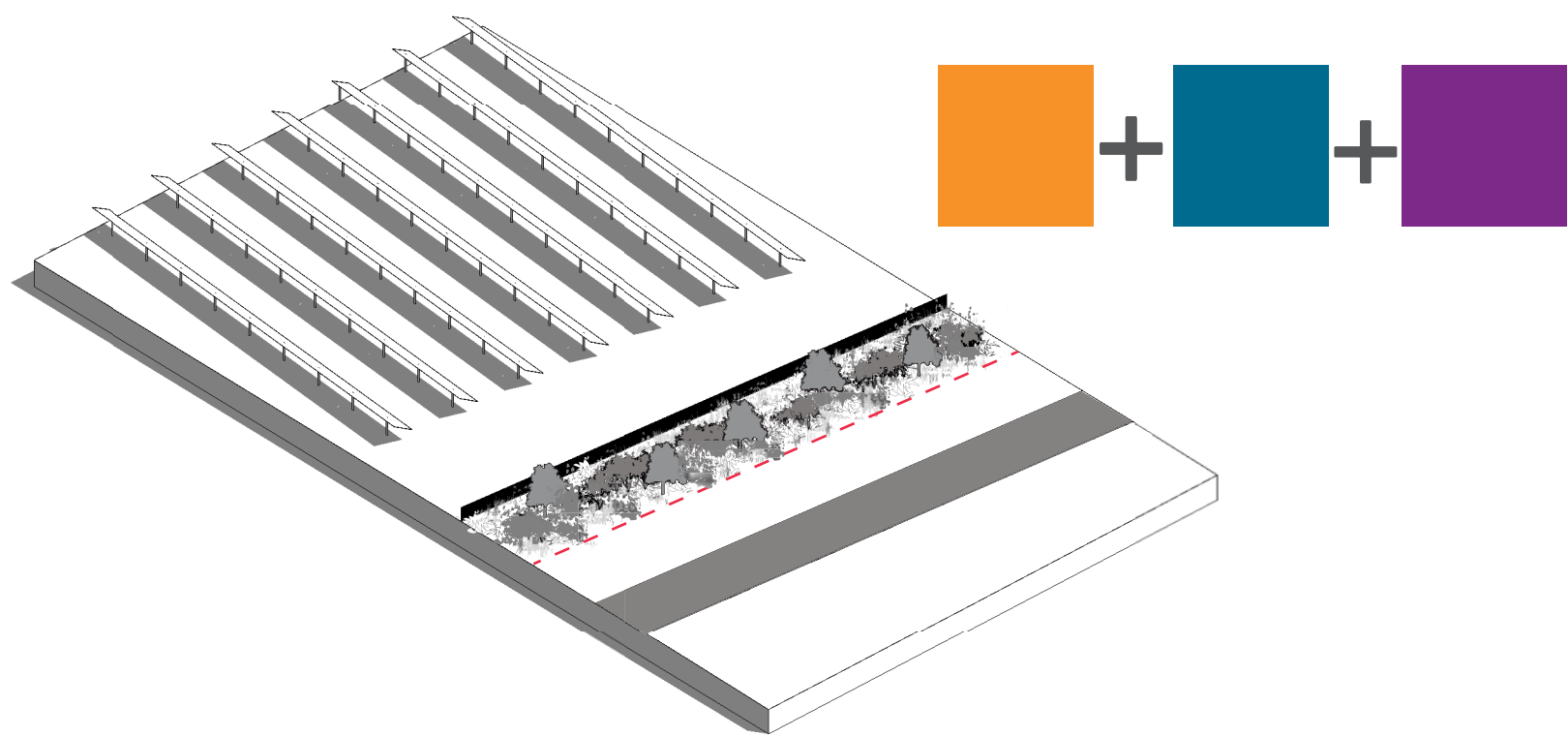


MEDIUM DENSITY PLANTING - POLLINATOR MIX AND LARGE SHRUB / SMALL TREES



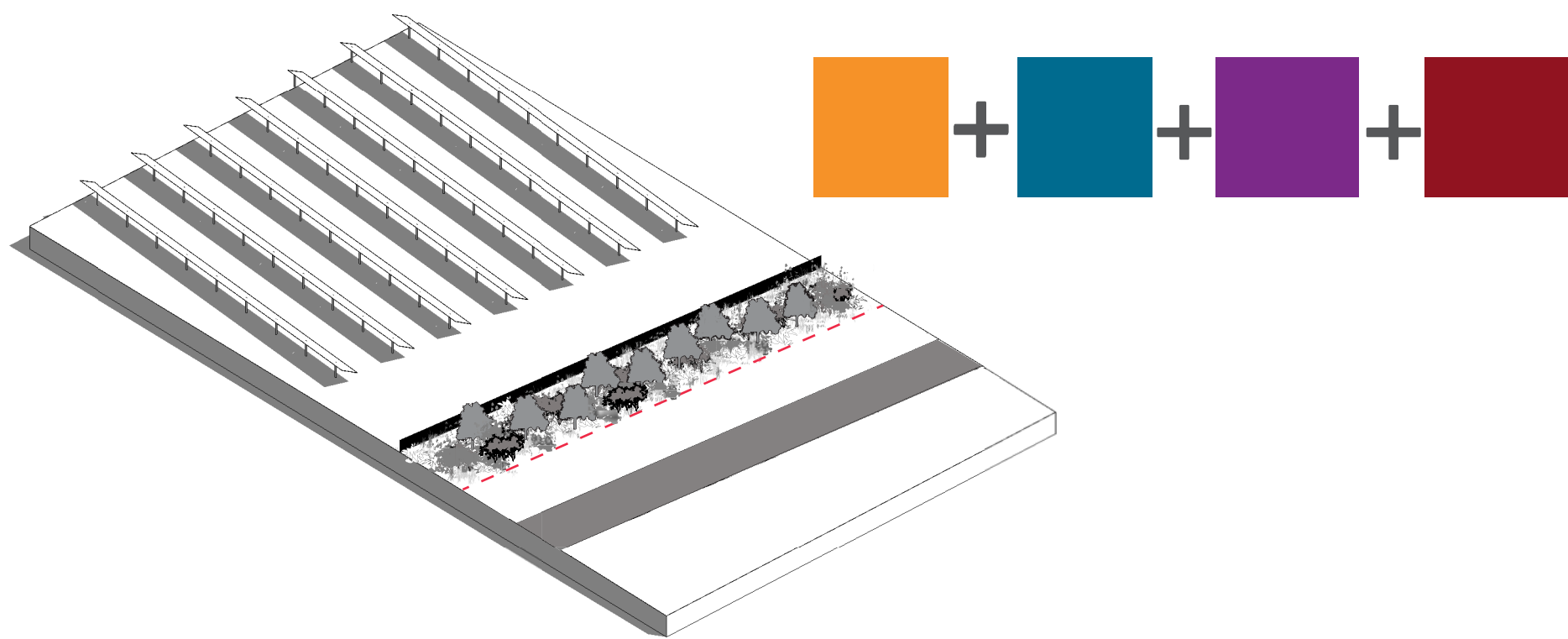
COMMON NAME	SCIENTIFIC NAME	SIZE AT PLANTING	BLOOM TIME
<b>SMALL TREES</b>			
SHABLOW SERVICEBERRY	AMELANCHIER CANADENSIS	36-48" HT/ #5 CONT.	APR-MAY
REDBUD	CERSIS CANADENSIS	36-48" HT/ #5 CONT.	APR
GRAY DOGWOOD	CORNUS RACEMOSA	18"-24" HT/ #5 CONT.	MAY TO JUNE
WITCH HAZEL	HAMAMELIS VIRGINIANA	18"-24" HT/ #5 CONT.	OCT TO DEC
<b>SHRUBS</b>			
BLACK CHOKEBERRY	ARONIA MELANOCARPUS	18"-24" HT #3 CONT.	MAY
BAYBERRY	MYRICA PENSYLVANICA	18"-24" HT #3 CONT.	
NINEBARK	PHYSOCARPUS OPULIFOLIUS	18"-24" HT #3 CONT.	MAY TO JUNE
SMOOTH SUMAC	RHUS GLABRA	18"-24" HT #3 CONT.	JUNE
ARROWWOOD VIBURNUM	VIBURNUM DENTATUM	18"-24" HT #3 CONT.	MAY TO JUNE
NANNYBERRY	VIBURNUM LENTAGO	18"-24" HT #3 CONT.	MAY

HIGH DENSITY PLANTING - POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES



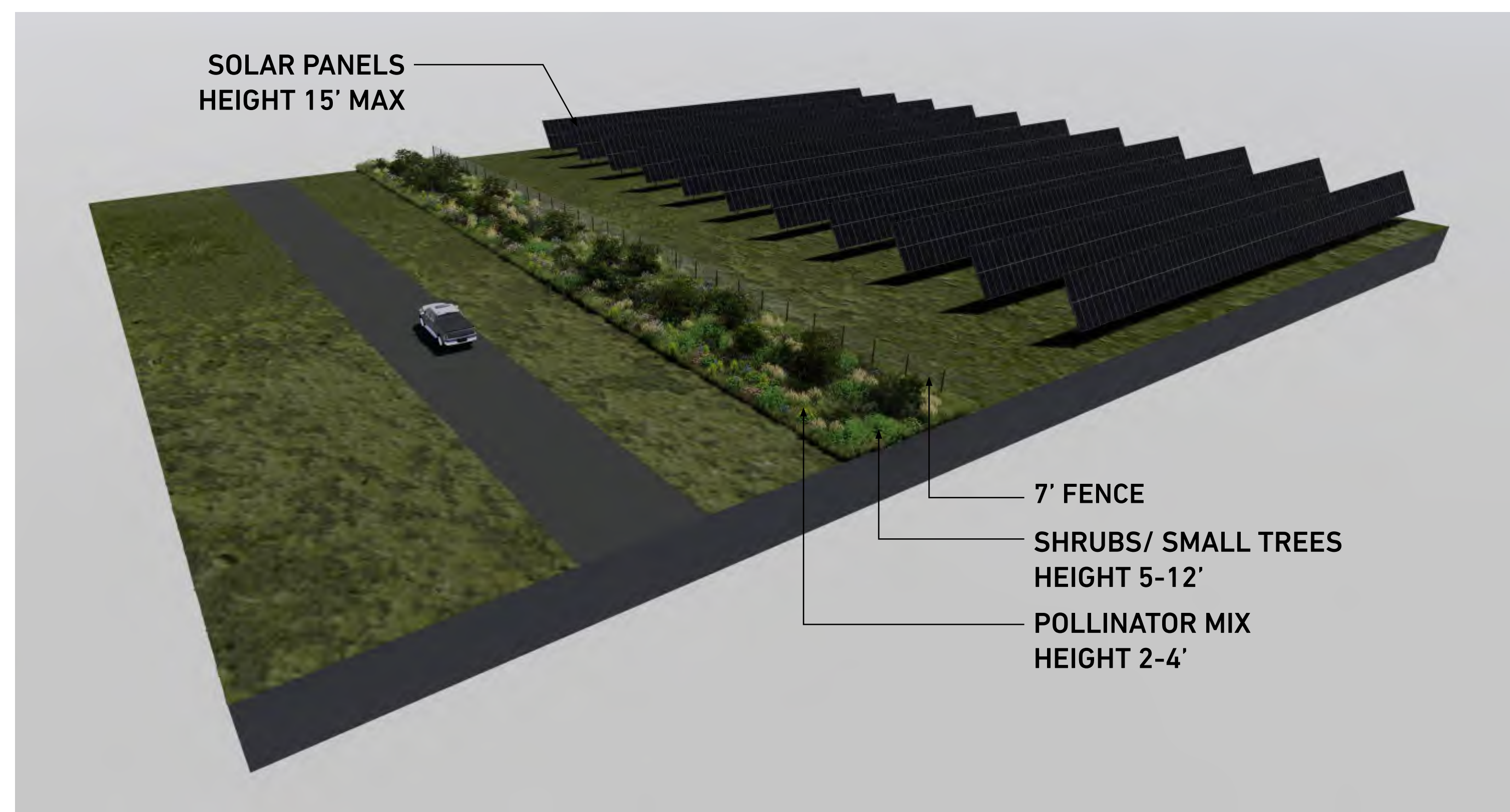
COMMON NAME	SCIENTIFIC NAME	SIZE AT PLANTING	BLOOM TIME
<b>SMALL TREES</b>			
SHABLOW SERVICEBERRY	AMELANCHIER CANADENSIS	36-48" HT/ #5 CONT.	APR-MAY
REDBUD	CERSIS CANADENSIS	36-48" HT/ #5 CONT.	APR
GRAY DOGWOOD	CORNUS RACEMOSA	18"-24" HT/ #5 CONT.	MAY TO JUNE
WITCH HAZEL	HAMAMELIS VIRGINIANA	18"-24" HT/ #5 CONT.	OCT TO DEC
<b>LARGE TREES</b>			
RED MAPLE	ACER RUBRUM	3-4' HT	
BLACK CHERRY	PRUNUS SEROTINA	3-4' HT	
HACKBERRY	CELTIS OCCIDENTALIS	3-4' HT	
CHINQUAPIN OAK	QUERCUS MUEHLENBERGII	3-4' HT	
KENTUCKY COFFEE TREE	GYMNOCLADUS DIOICUS	3-4' HT	

HIGH DENSITY WITH EVERGREEN PLANTING - POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES & EVERGREEN

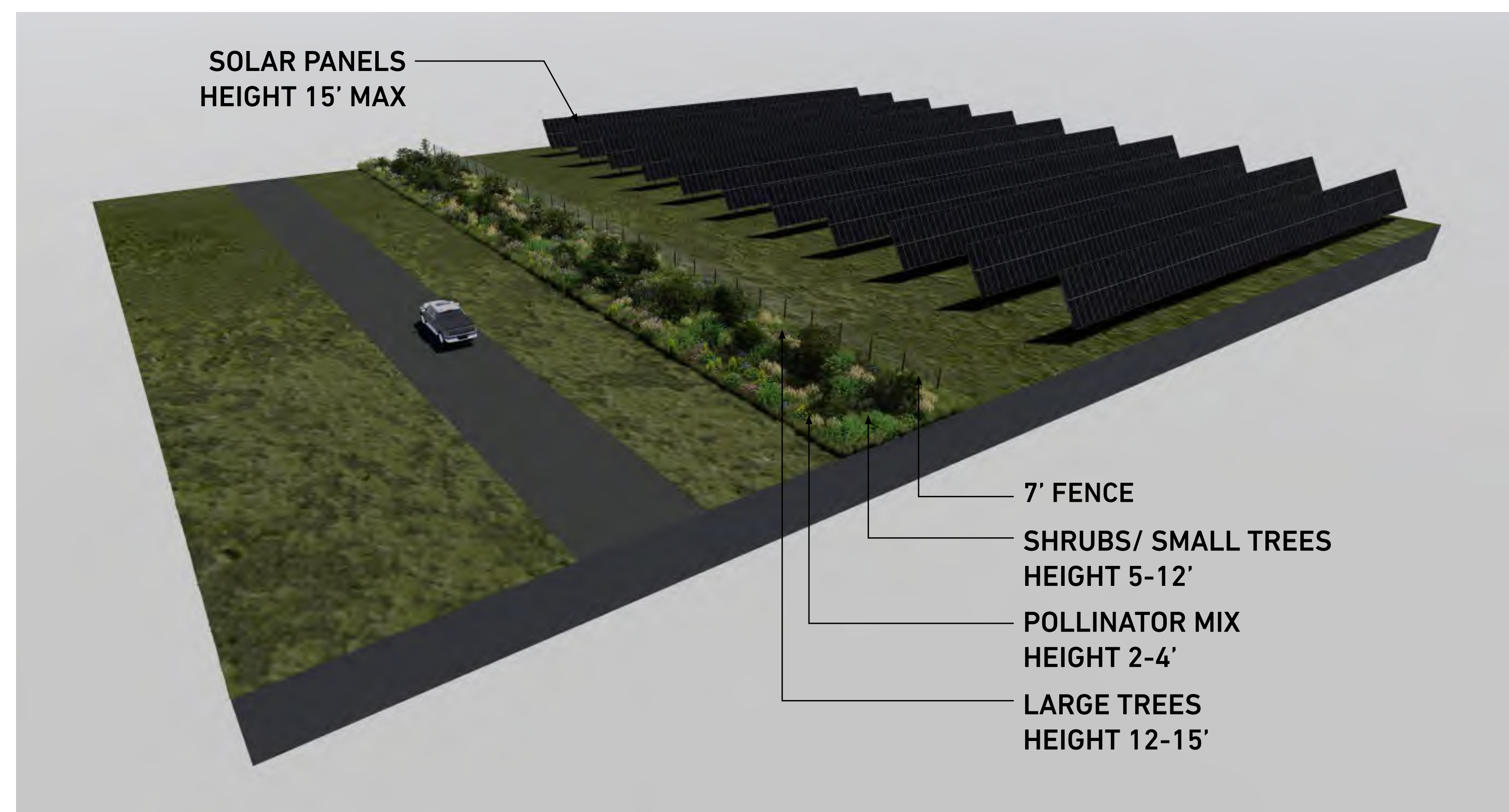


COMMON NAME	SCIENTIFIC NAME	SIZE AT PLANTING	BLOOM TIME
<b>SMALL TREES - ** THE QUANTITY OF SMALL TREES INCREASED FROM MEDIUM-HIGH X 2</b>			
SHABLOW SERVICEBERRY	AMELANCHIER CANADENSIS	36-48" HT/ #5 CONT.	APR-MAY
REDBUD	CERSIS CANADENSIS	36-48" HT/ #5 CONT.	APR
GRAY DOGWOOD	CORNUS RACEMOSA	18"-24" HT/ #5 CONT.	MAY TO JUNE
WITCH HAZEL	HAMAMELIS VIRGINIANA	18"-24" HT/ #5 CONT.	OCT TO DEC
<b>LARGE TREES - ** THE QUANTITY OF LARGE TREES INCREASED FROM MEDIUM-HIGH X 2</b>			
RED MAPLE	ACER RUBRUM	3-4' HT	
BLACK CHERRY	PRUNUS SEROTINA	3-4' HT	
HACKBERRY	CELTIS OCCIDENTALIS	3-4' HT	
CHINQUAPIN OAK	QUERCUS MUEHLENBERGII	3-4' HT	
KENTUCKY COFFEE TREE	GYMNOCLADUS DIOICUS	3-4' HT	
EASTERN WHITE PINE	PINUS STOBUS	3-4' HT	

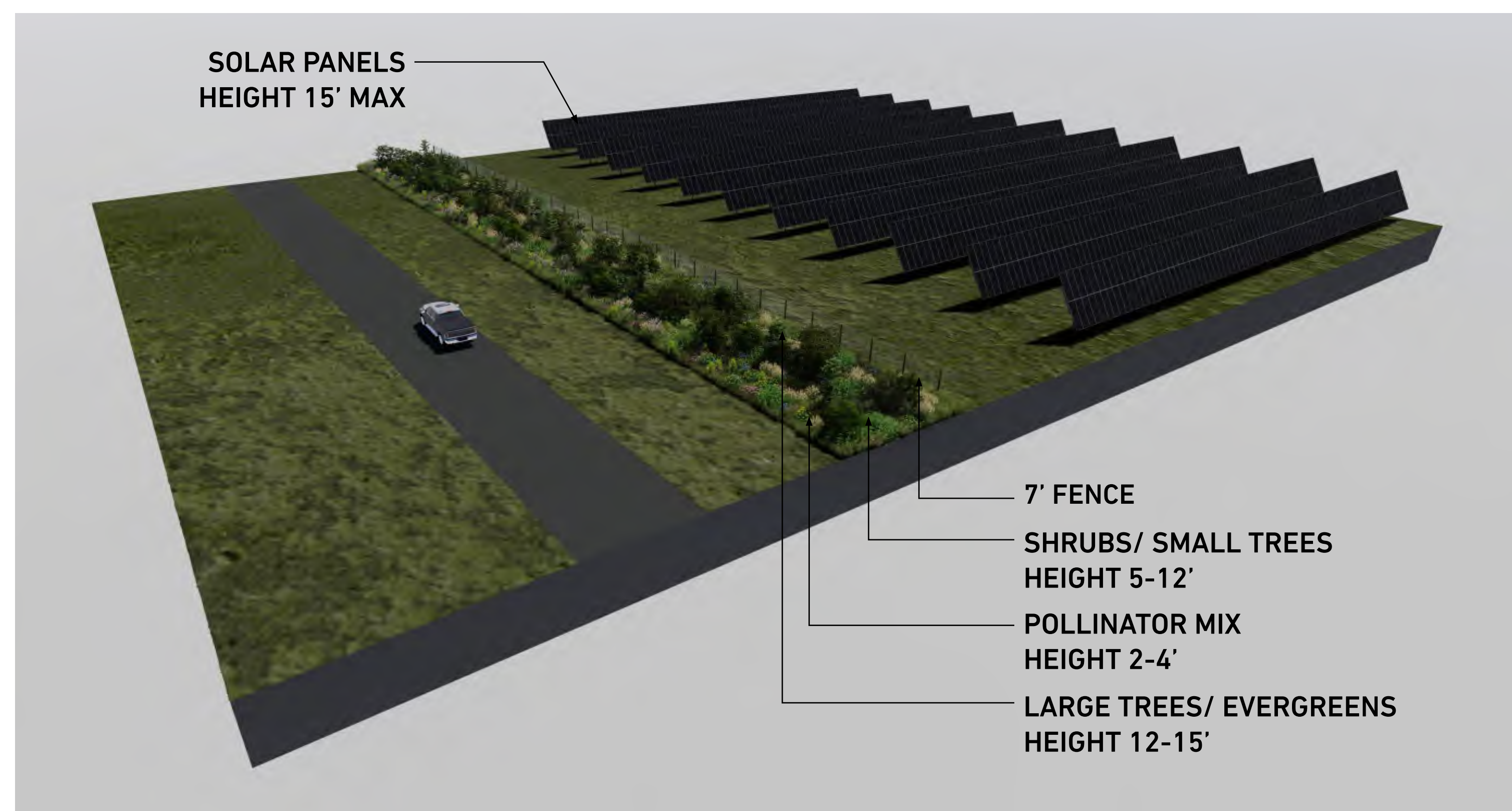




**5 YEAR MEDIUM DENSITY PLANTING - POLLINATOR MIX AND LARGE SHRUB / SMALL TREES**

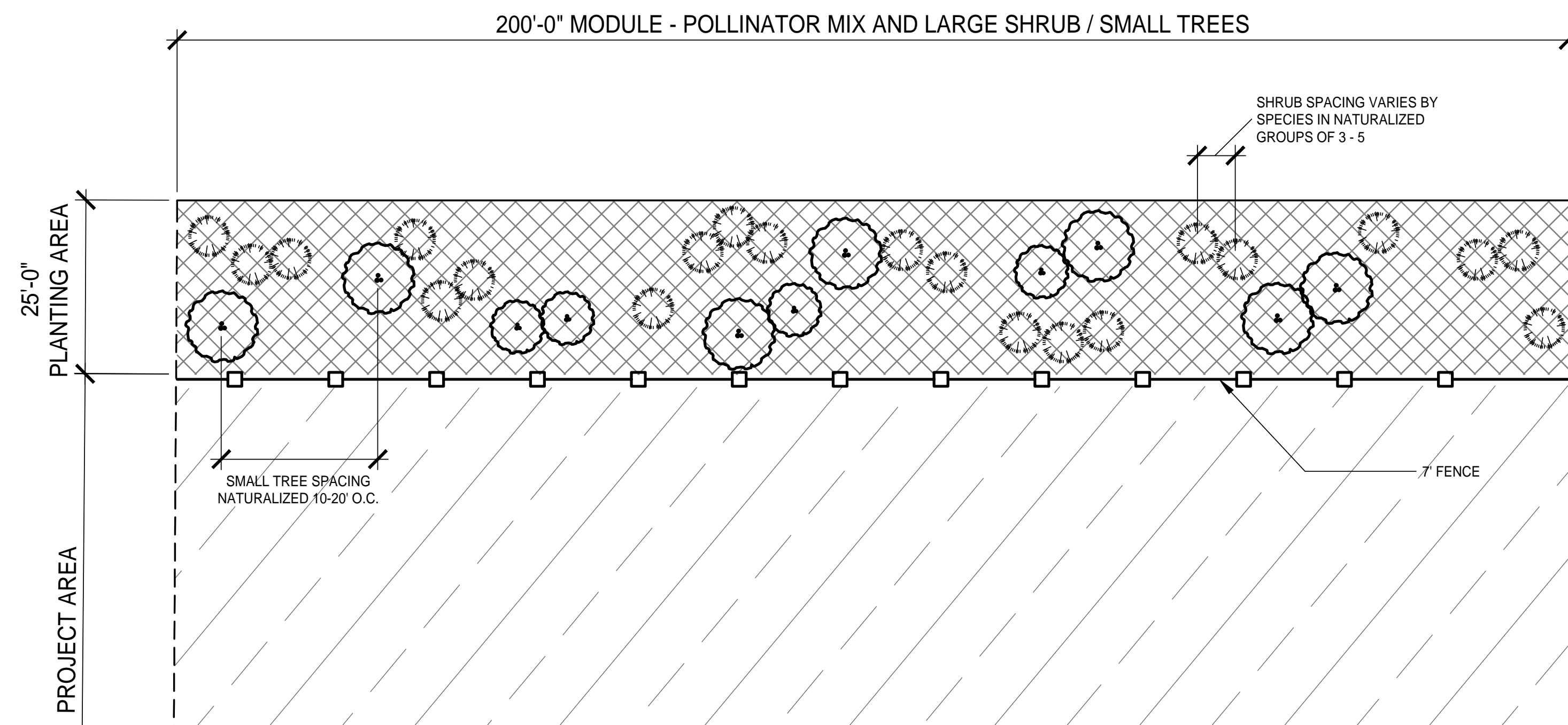


**5 YEAR HIGH DENSITY PLANTING -  
POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES**

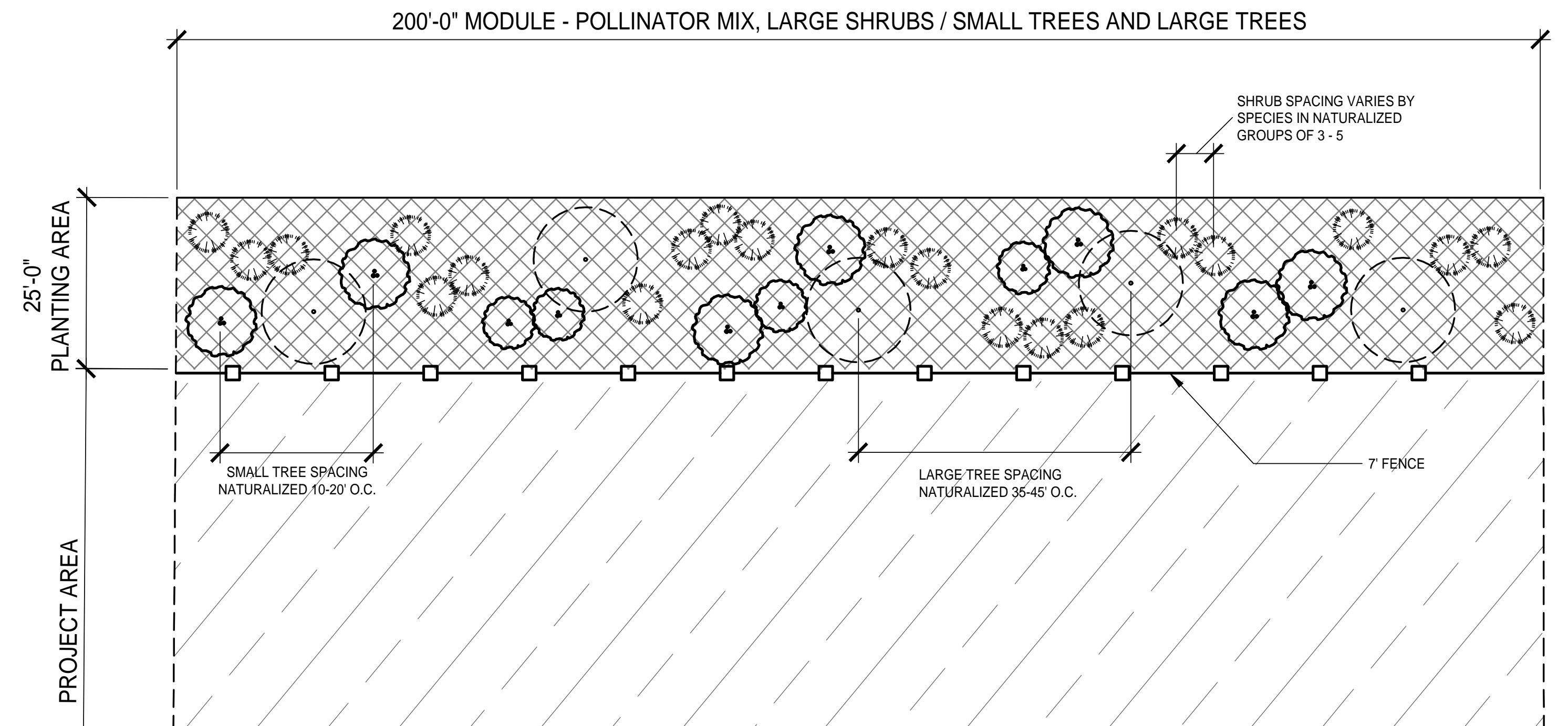


**5 YEAR HIGH DENSITY WITH EVERGREEN PLANTING -  
POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES & EVERGREENS**

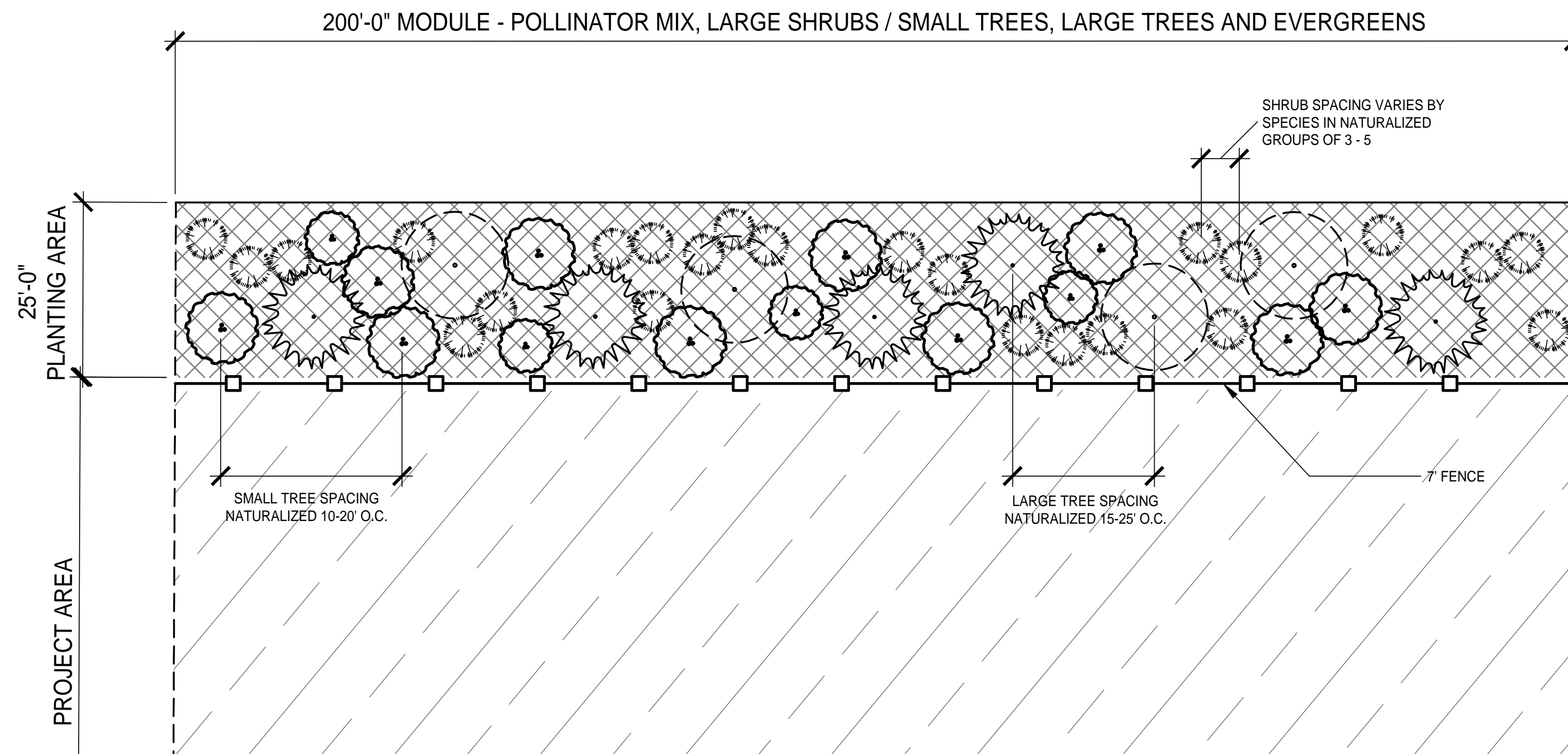




**MEDIUM DENSITY PLANTING - POLLINATOR MIX AND LARGE SHRUB / SMALL TREES**

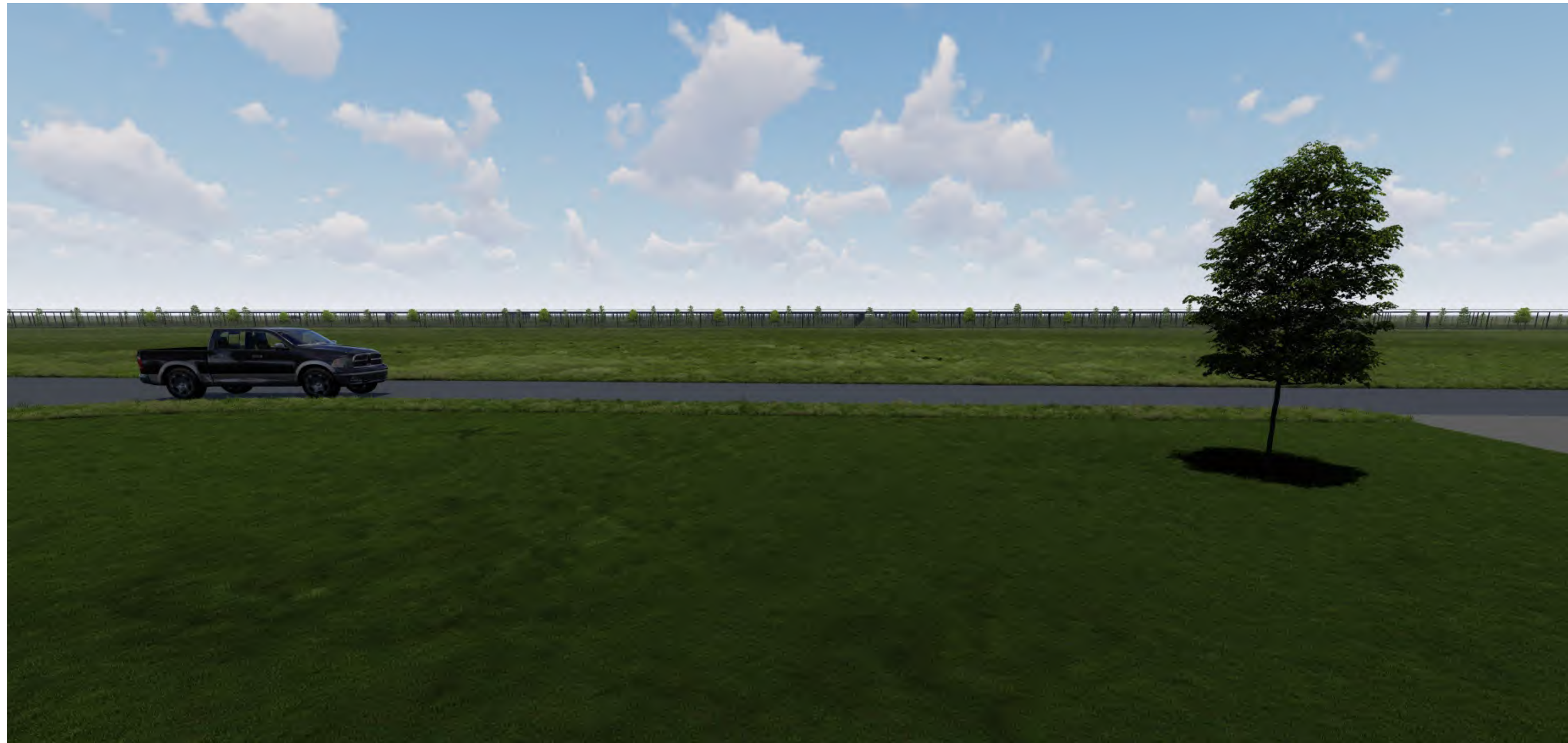


**HIGH DENSITY PLANTING -  
POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES**

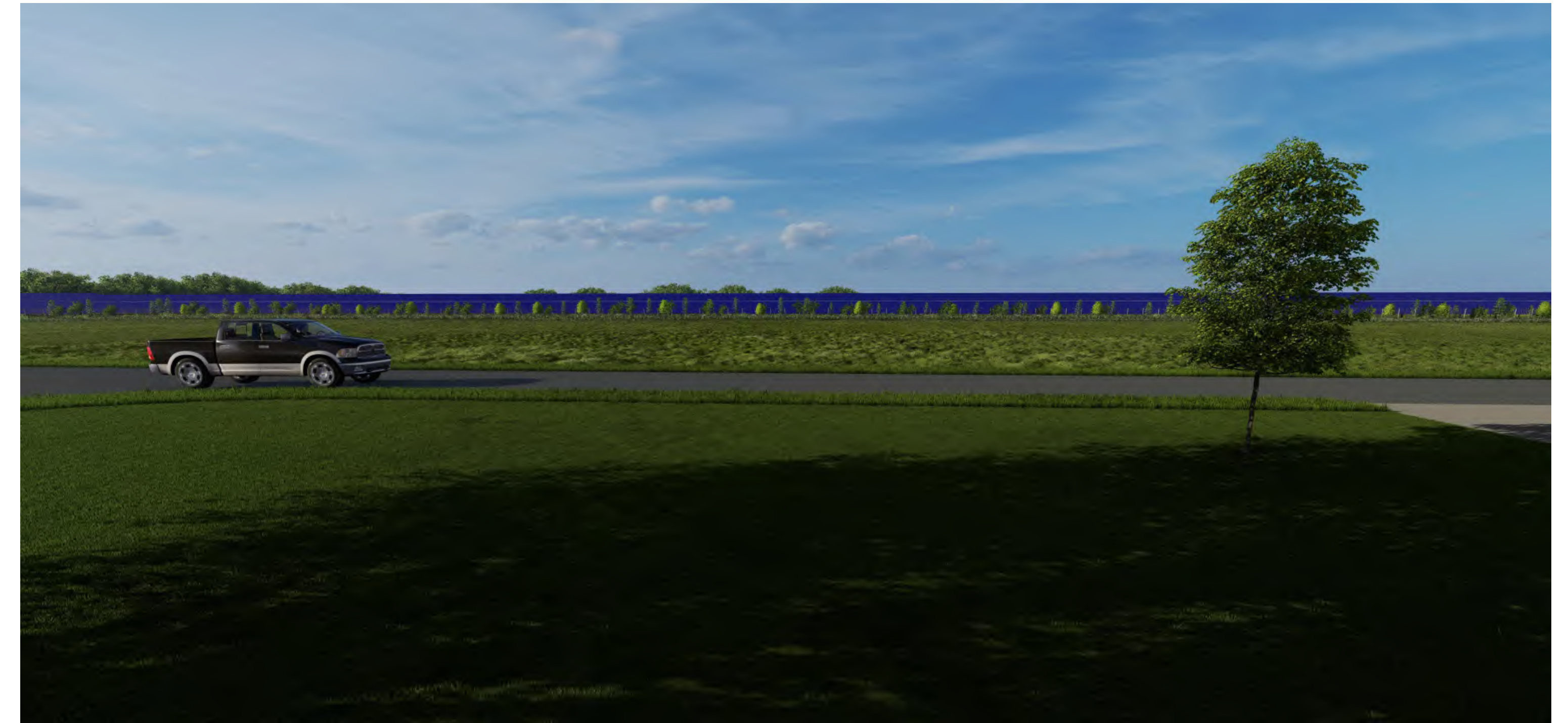


**HIGH DENSITY WITH EVERGREEN PLANTING -  
POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES & EVERGREENS**



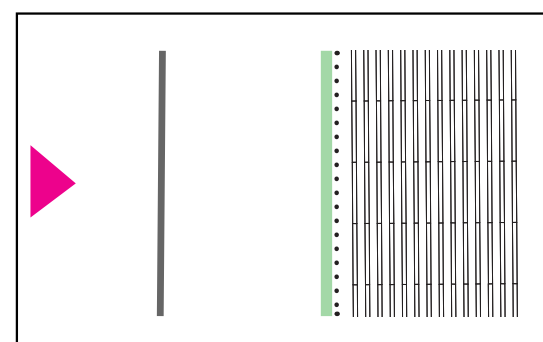


**HIGH DENSITY PLANTING - POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES**  
SOLAR PANELS FROM OVER A 300' DISTANCE. PANELS SHOWN FLAT AT MINIMUM 9' HEIGHT.



**HIGH DENSITY PLANTING - POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES**  
SOLAR PANELS FROM OVER A 300' DISTANCE. PANELS SHOWN AT MAXIMUM 15' HEIGHT, 60 DEGREE TILT.

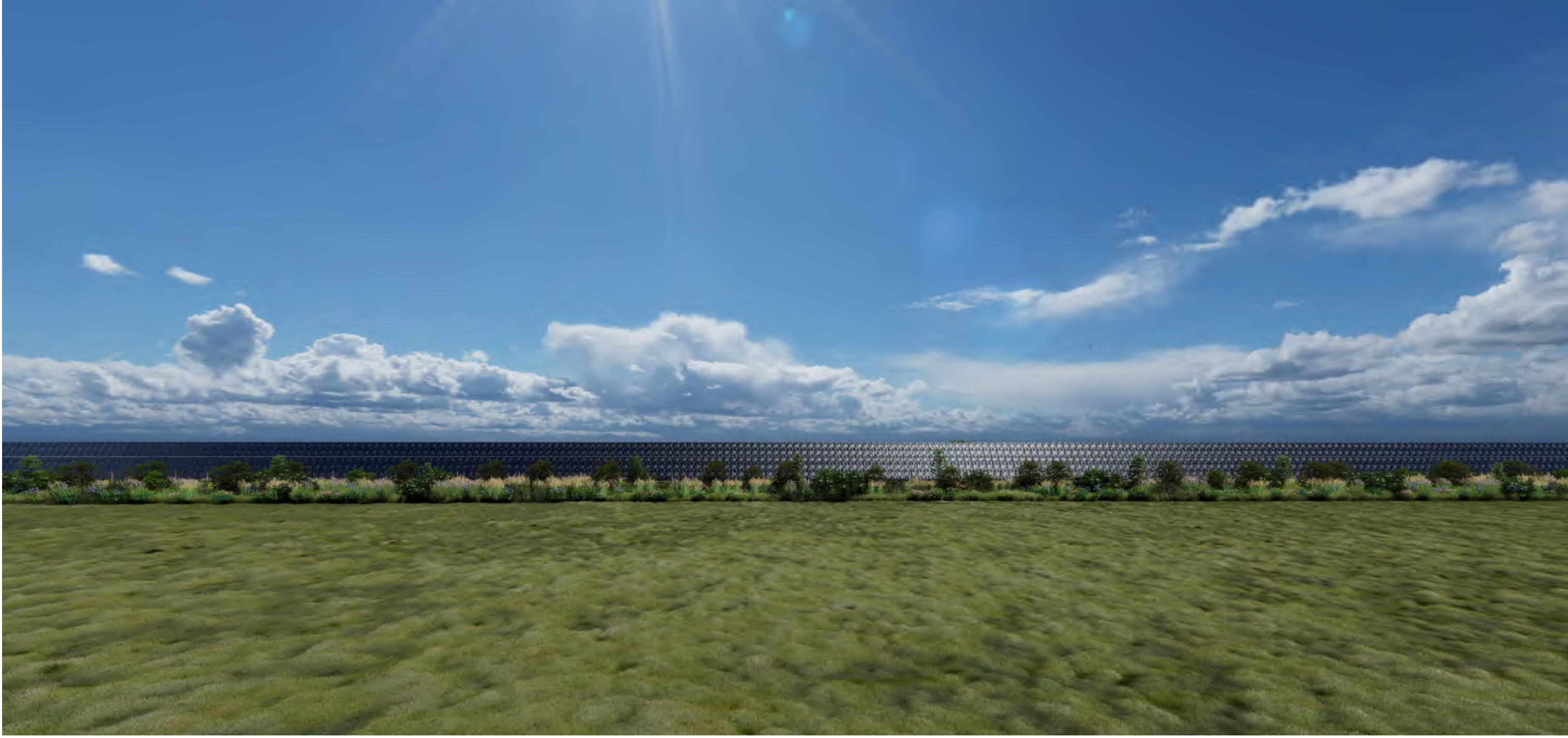
VIEW KEY  
PLAN  
N.T.S.





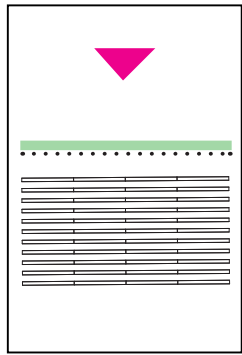


HIGH DENSITY PLANTING - POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES  
SOLAR PANELS FROM A 150' DISTANCE. PANELS SHOWN FLAT AT MINIMUM 9' HEIGHT.

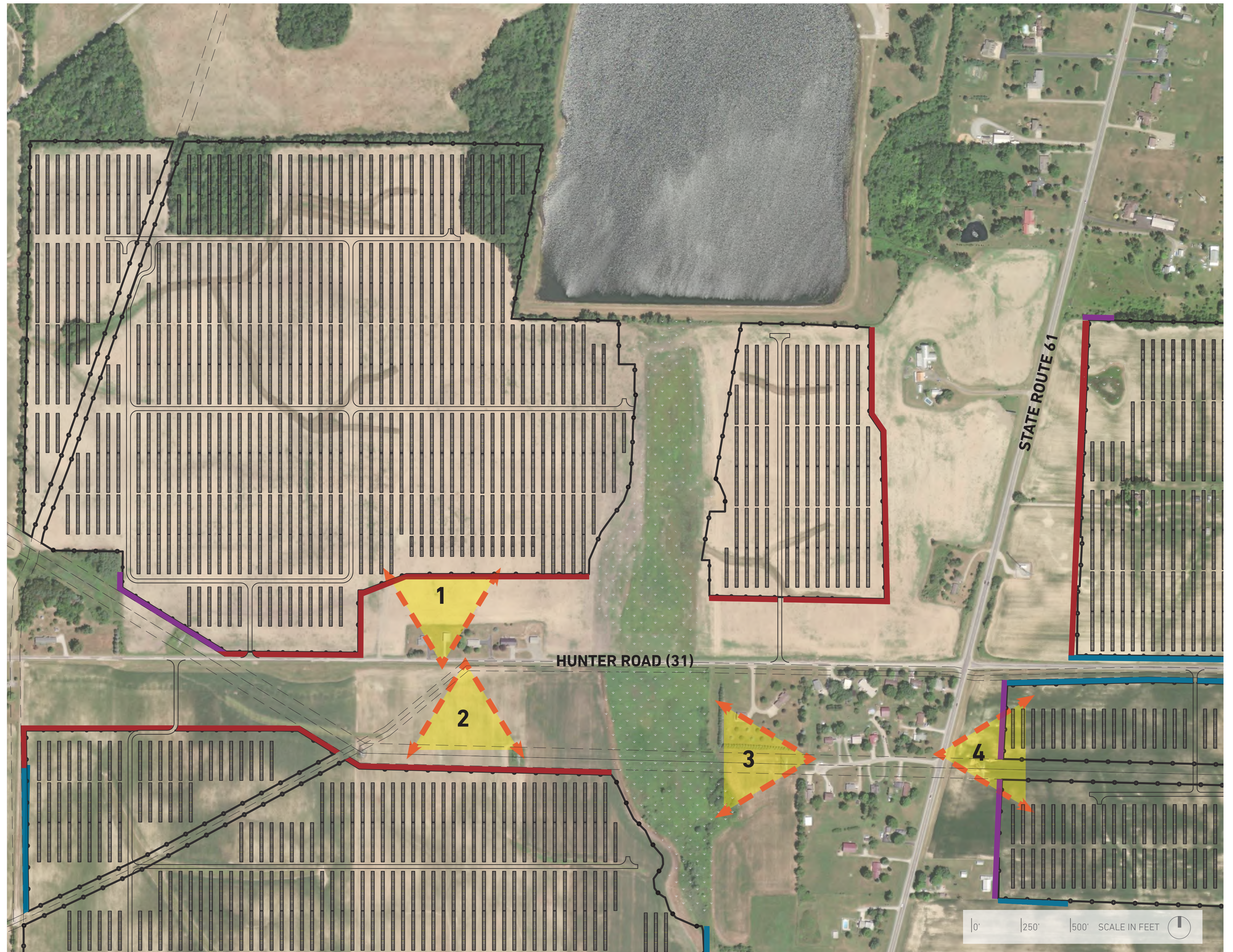


HIGH DENSITY PLANTING - POLLINATOR MIX, LARGE SHRUB / SMALL TREES AND LARGE TREES  
SOLAR PANELS FROM A 150' DISTANCE. PANELS SHOWN AT MAXIMUM 15' HEIGHT, 60  
DEGREE TILT.

VIEW KEY  
PLAN  
N.T.S.





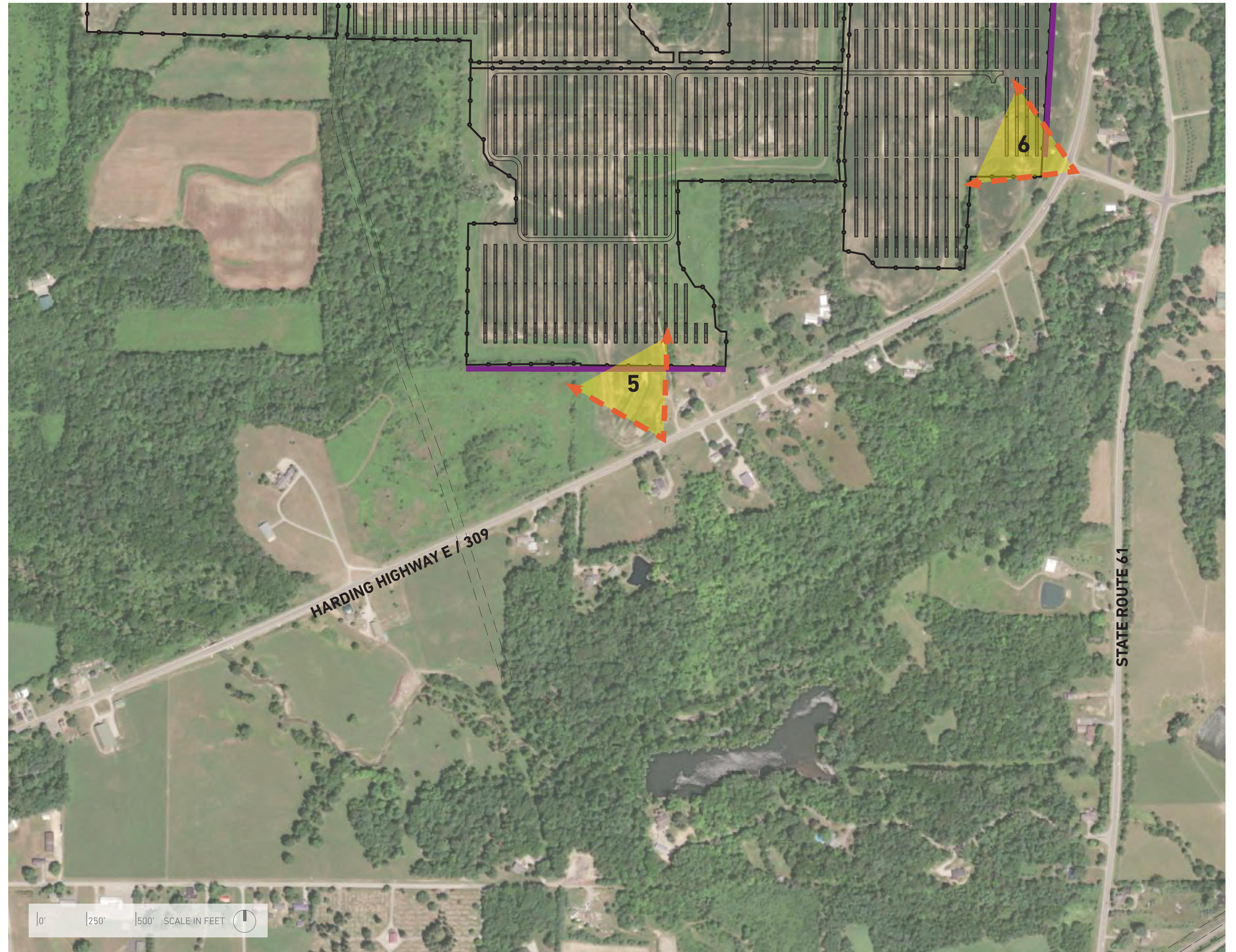




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MORNING VIEW - PANELS AT MAXIMUM HEIGHT OF 15 FEET







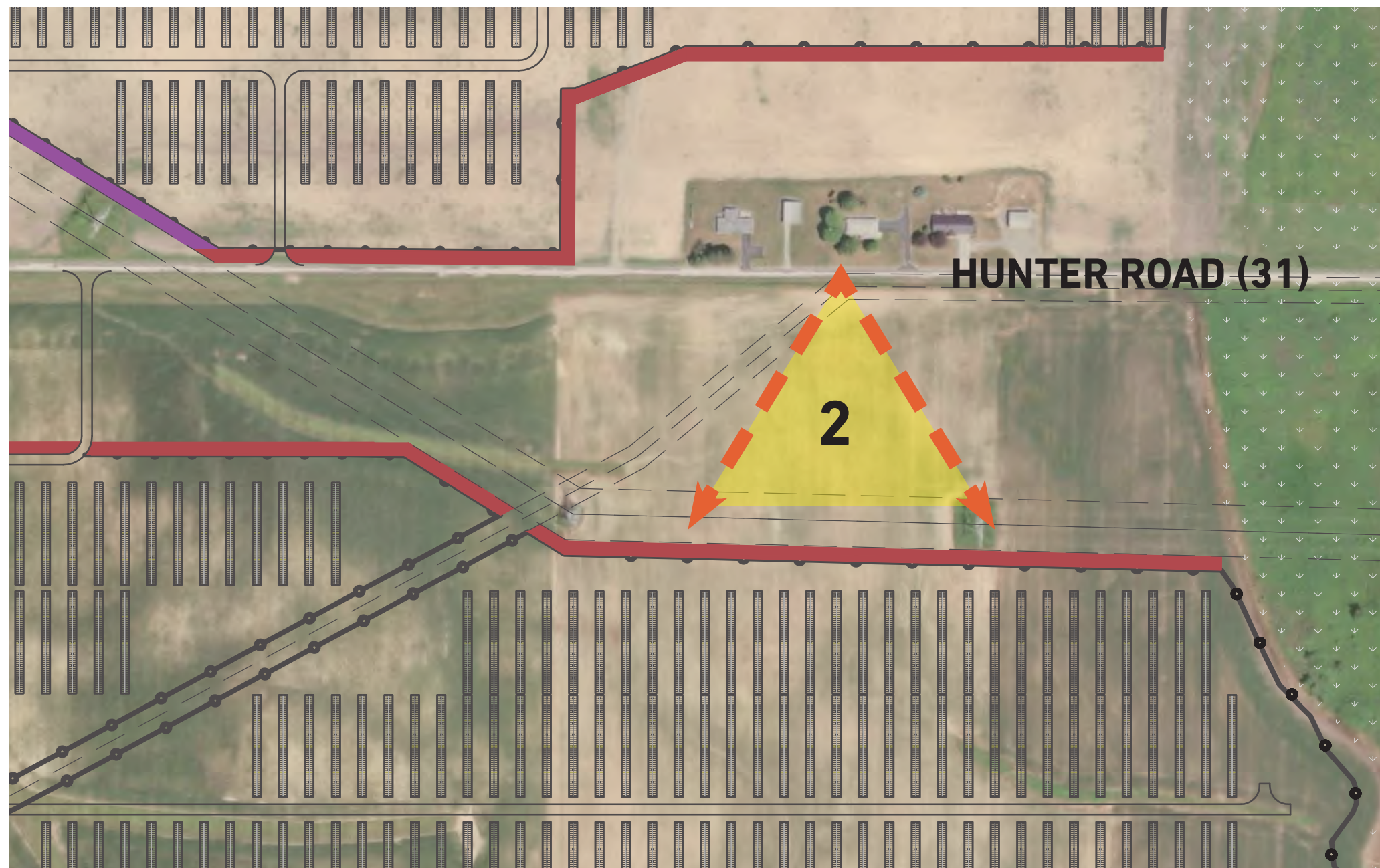
AFTERNOON VIEW - PANELS AT MINIMUM HEIGHT OF 9 FEET







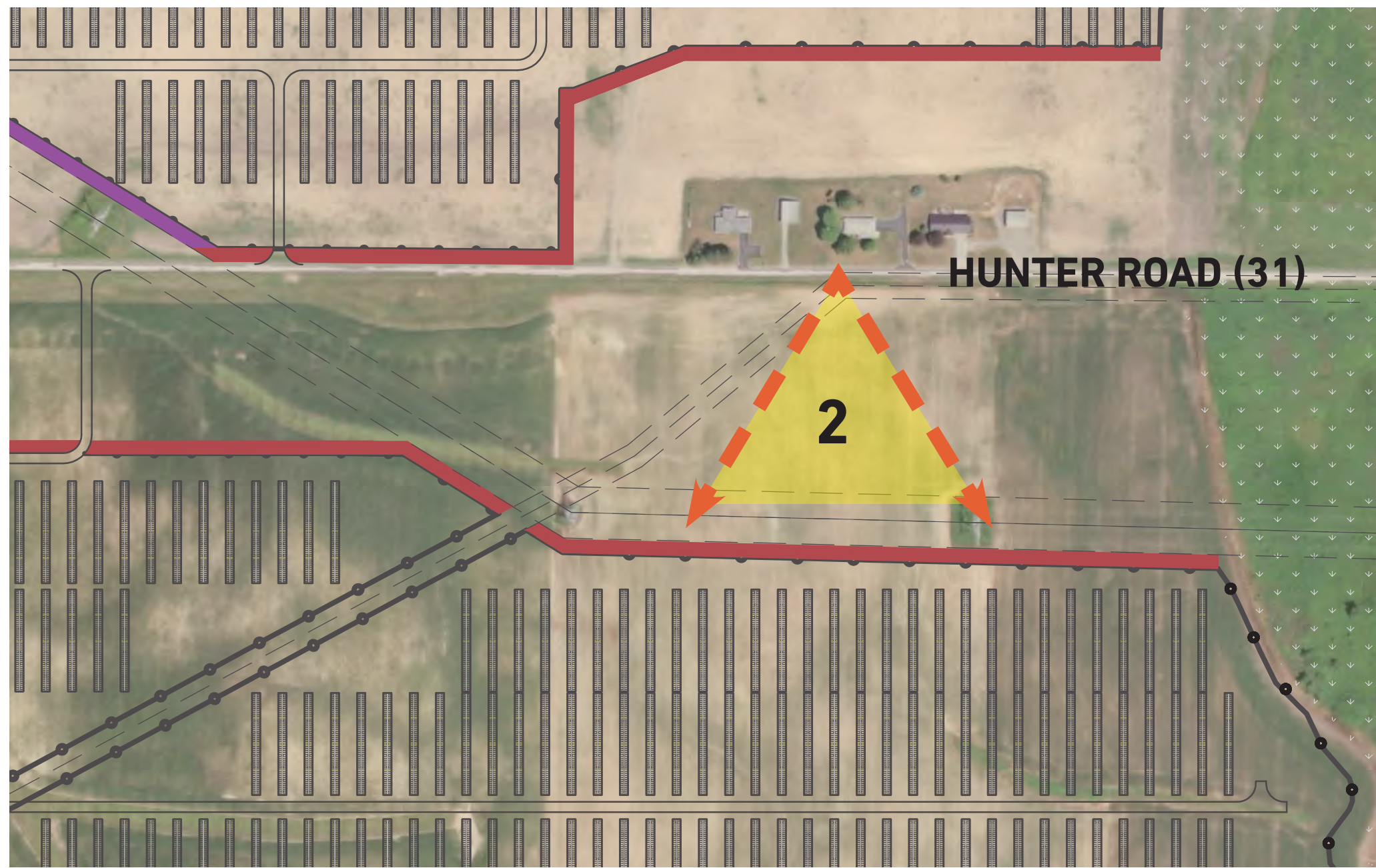
MORNING VIEW - PANELS AT MAXIMUM HEIGHT OF 15 FEET







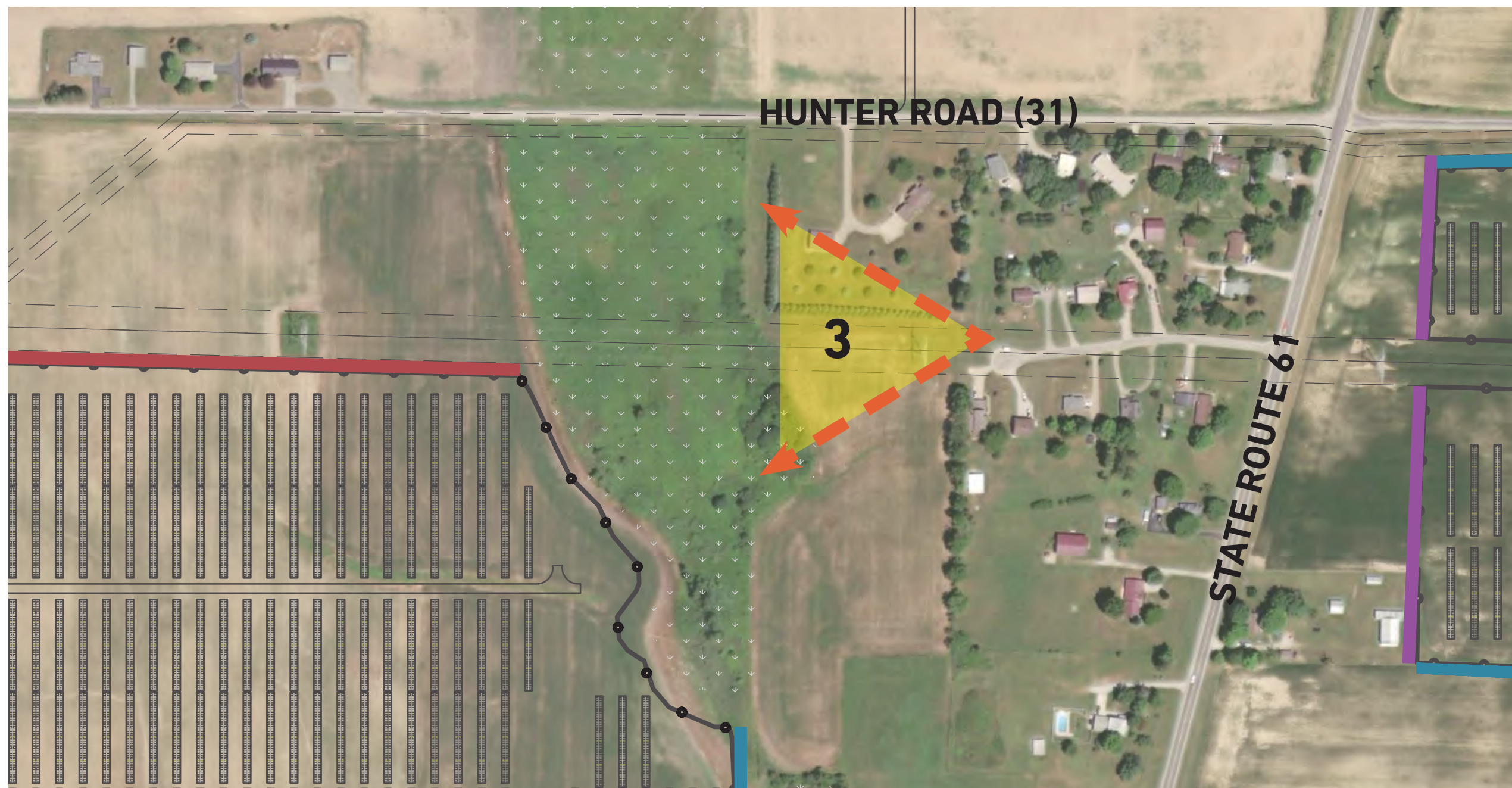
AFTERNOON VIEW - PANELS AT MINIMUM HEIGHT OF 9 FEET







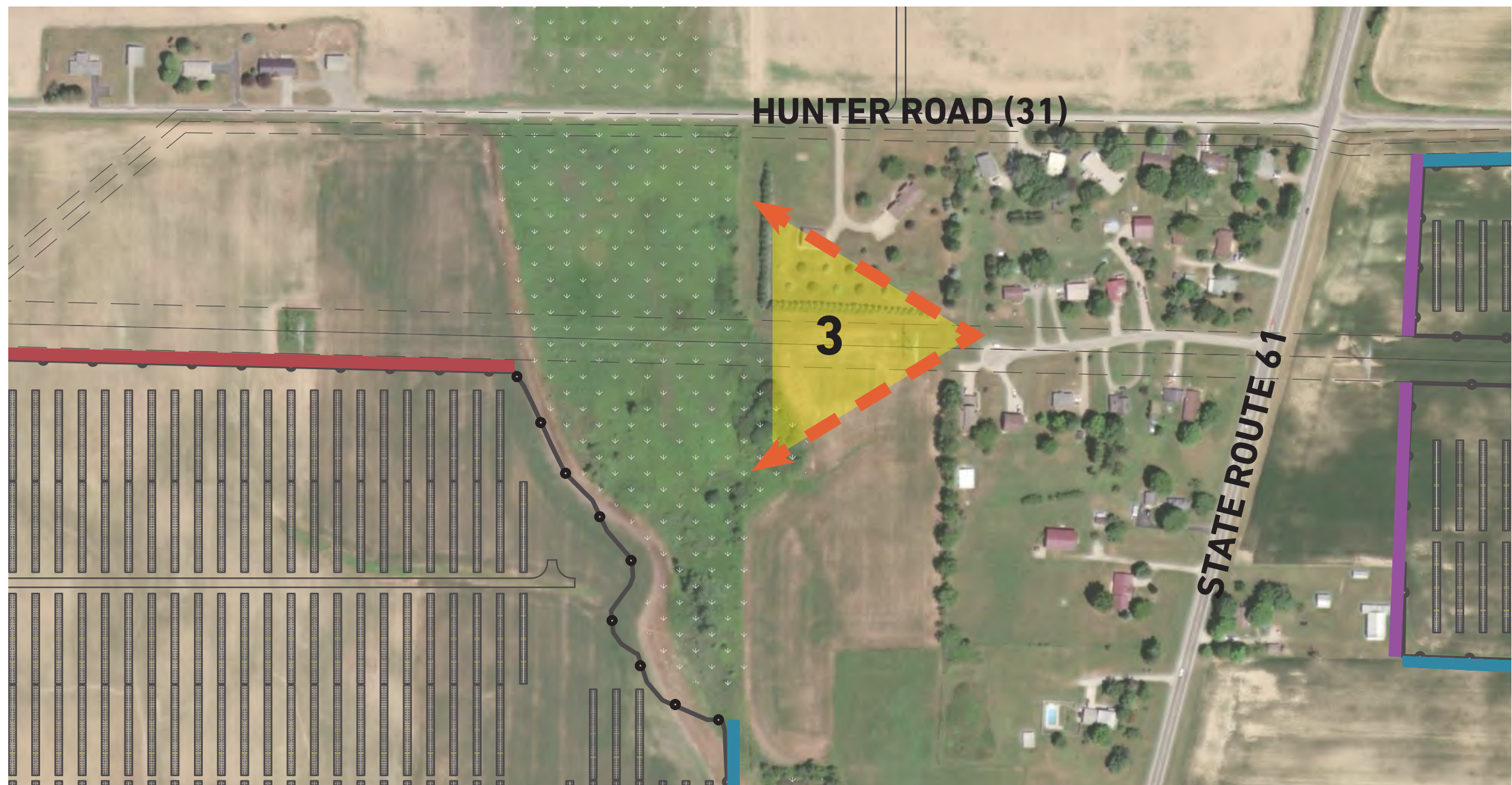
MORNING VIEW - PANELS AT MAXIMUM HEIGHT OF 15 FEET







AFTERNOON VIEW - PANELS AT MINIMUM HEIGHT OF 9 FEET







MORNING VIEW - PANELS AT MAXIMUM HEIGHT OF 15 FEET







AFTERNOON VIEW - PANELS AT MINIMUM HEIGHT OF 9 FEET





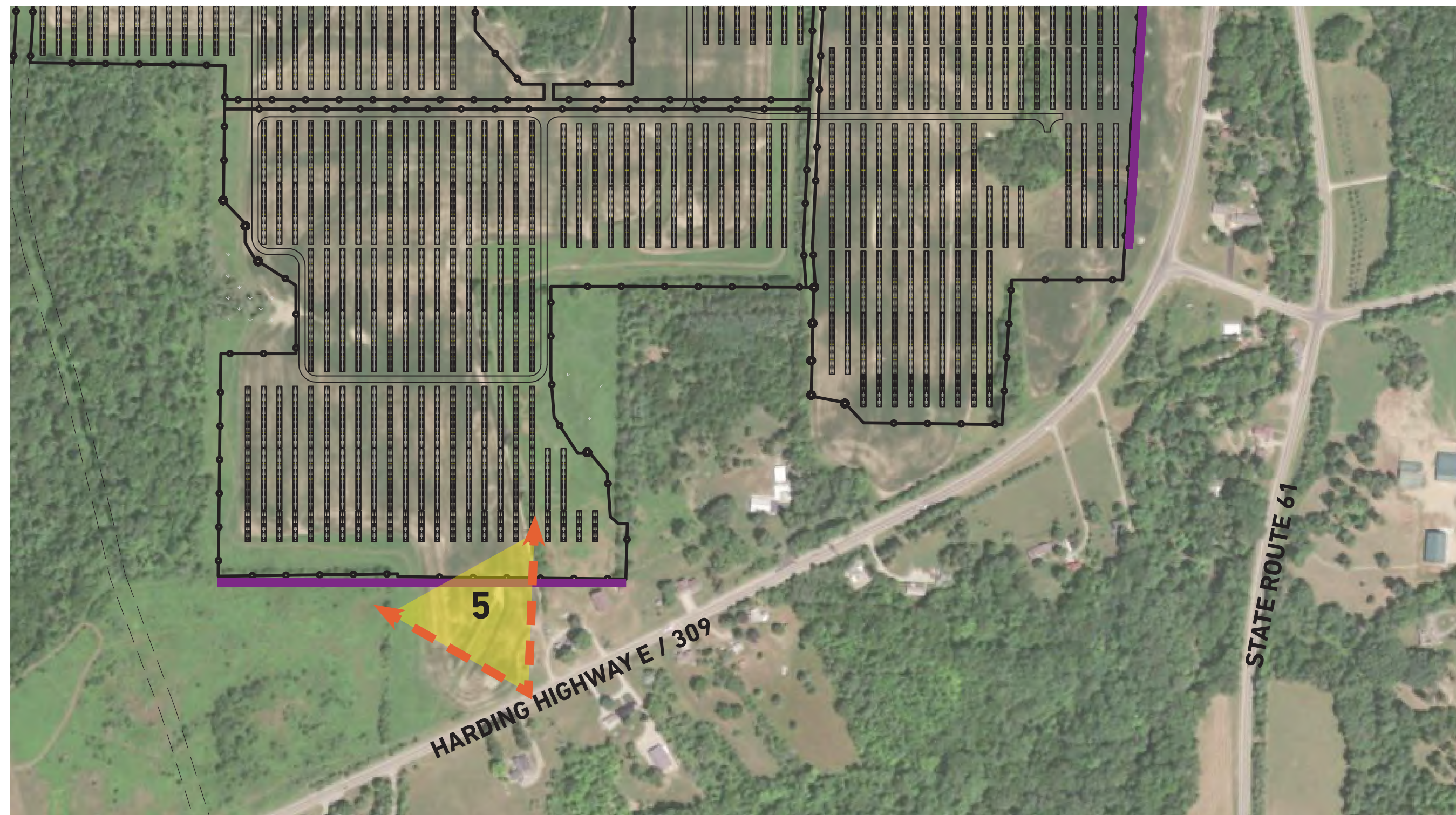
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MORNING VIEW - PANELS AT MAXIMUM HEIGHT OF 15 FEET



AFTERNOON VIEW - PANELS AT MINIMUM HEIGHT OF 9 FEET



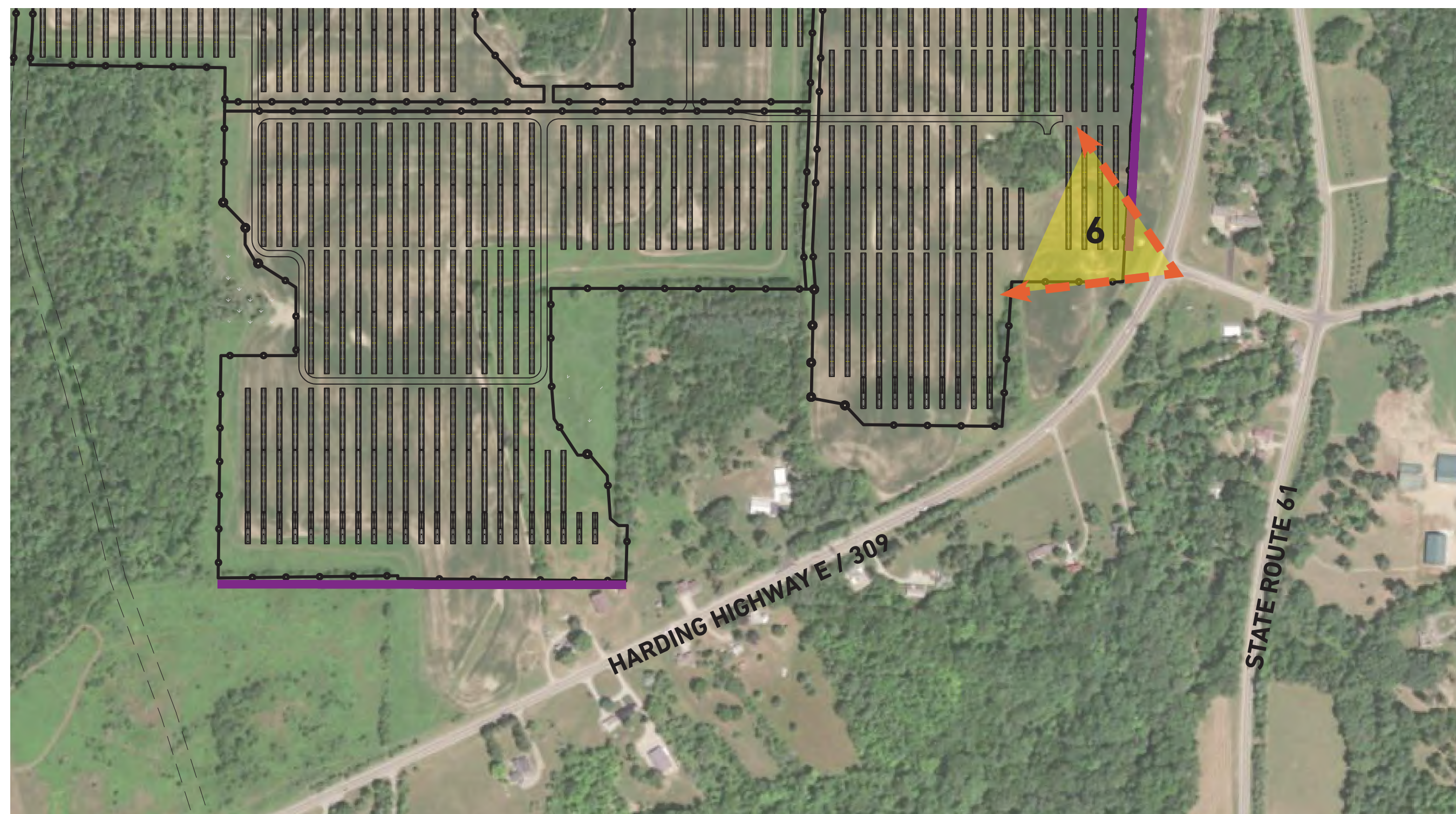


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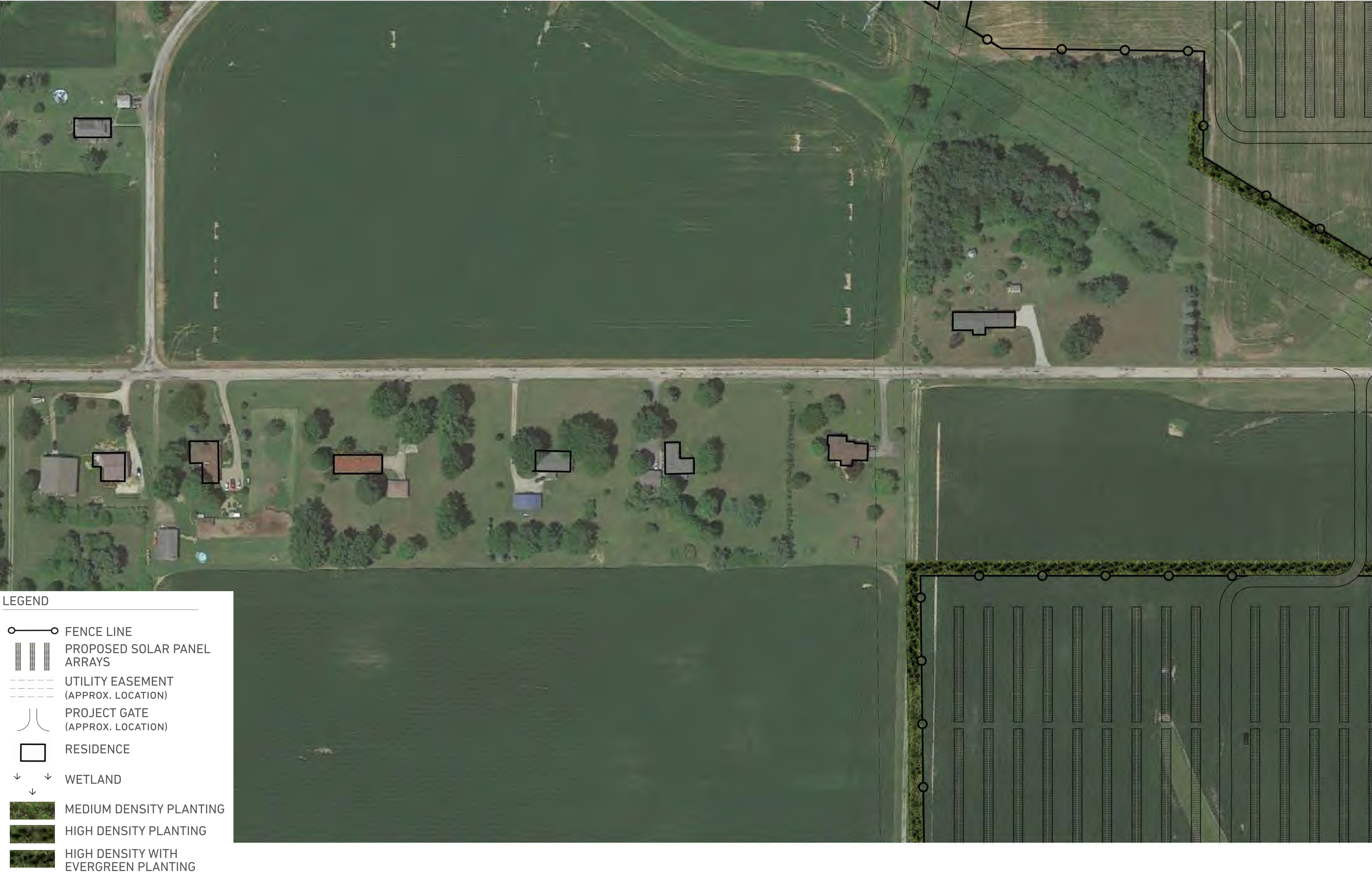


MORNING VIEW - PANELS AT MAXIMUM HEIGHT OF 15 FEET

AFTERNOON VIEW - PANELS AT MINIMUM HEIGHT OF 9 FEET





















LEGEND

- FENCE LINE
- PROPOSED SOLAR PANEL ARRAYS
- UTILITY EASEMENT (APPROX. LOCATION)
- PROJECT GATE (APPROX. LOCATION)
- RESIDENCE
- WETLAND
- MEDIUM DENSITY PLANTING
- HIGH DENSITY PLANTING
- HIGH DENSITY WITH EVERGREEN PLANTING







LEGEND

- FENCE LINE
- PROPOSED SOLAR PANEL ARRAYS
- UTILITY EASEMENT (APPROX. LOCATION)
- PROJECT GATE (APPROX. LOCATION)
- RESIDENCE
- WETLAND
- MEDIUM DENSITY PLANTING
- HIGH DENSITY PLANTING
- HIGH DENSITY WITH EVERGREEN PLANTING



LEGEND

- FENCE LINE
- PROPOSED SOLAR PANEL ARRAYS
- UTILITY EASEMENT (APPROX. LOCATION)
- PROJECT GATE (APPROX. LOCATION)
- RESIDENCE
- WETLAND
- MEDIUM DENSITY PLANTING
- HIGH DENSITY PLANTING
- HIGH DENSITY WITH EVERGREEN PLANTING



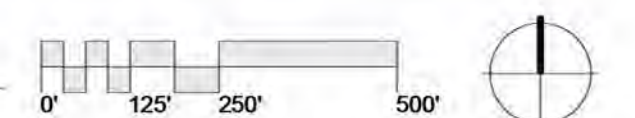








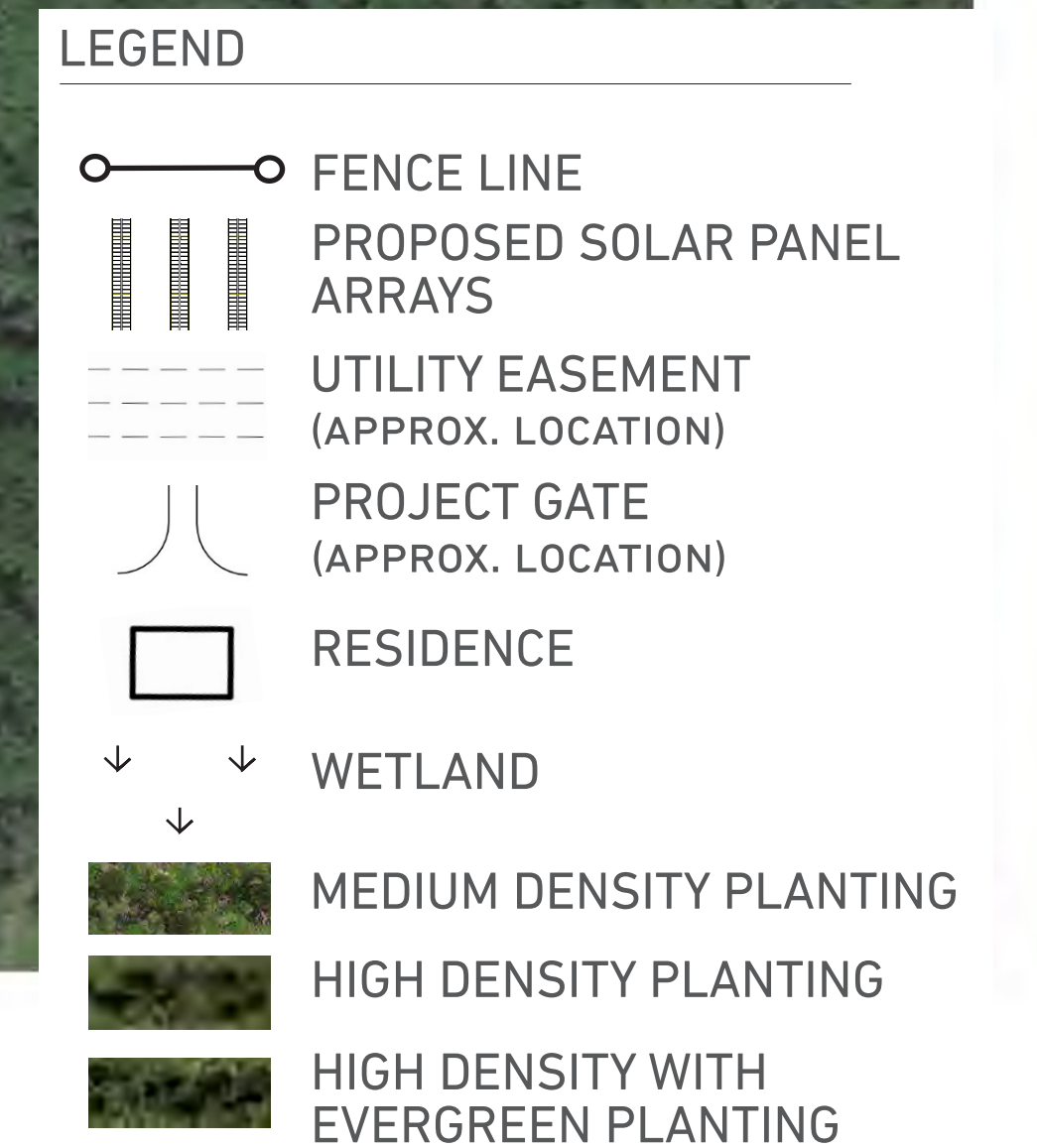
BLOSSOM AREA 6  
SCALE: 1" = 150'-0"



















- LEGEND
- FENCE LINE
  - PROPOSED SOLAR PANEL ARRAYS
  - UTILITY EASEMENT (APPROX. LOCATION)
  - PROJECT GATE (APPROX. LOCATION)
  - RESIDENCE
  - WETLAND
  - MEDIUM DENSITY PLANTING
  - HIGH DENSITY PLANTING
  - HIGH DENSITY WITH EVERGREEN PLANTING

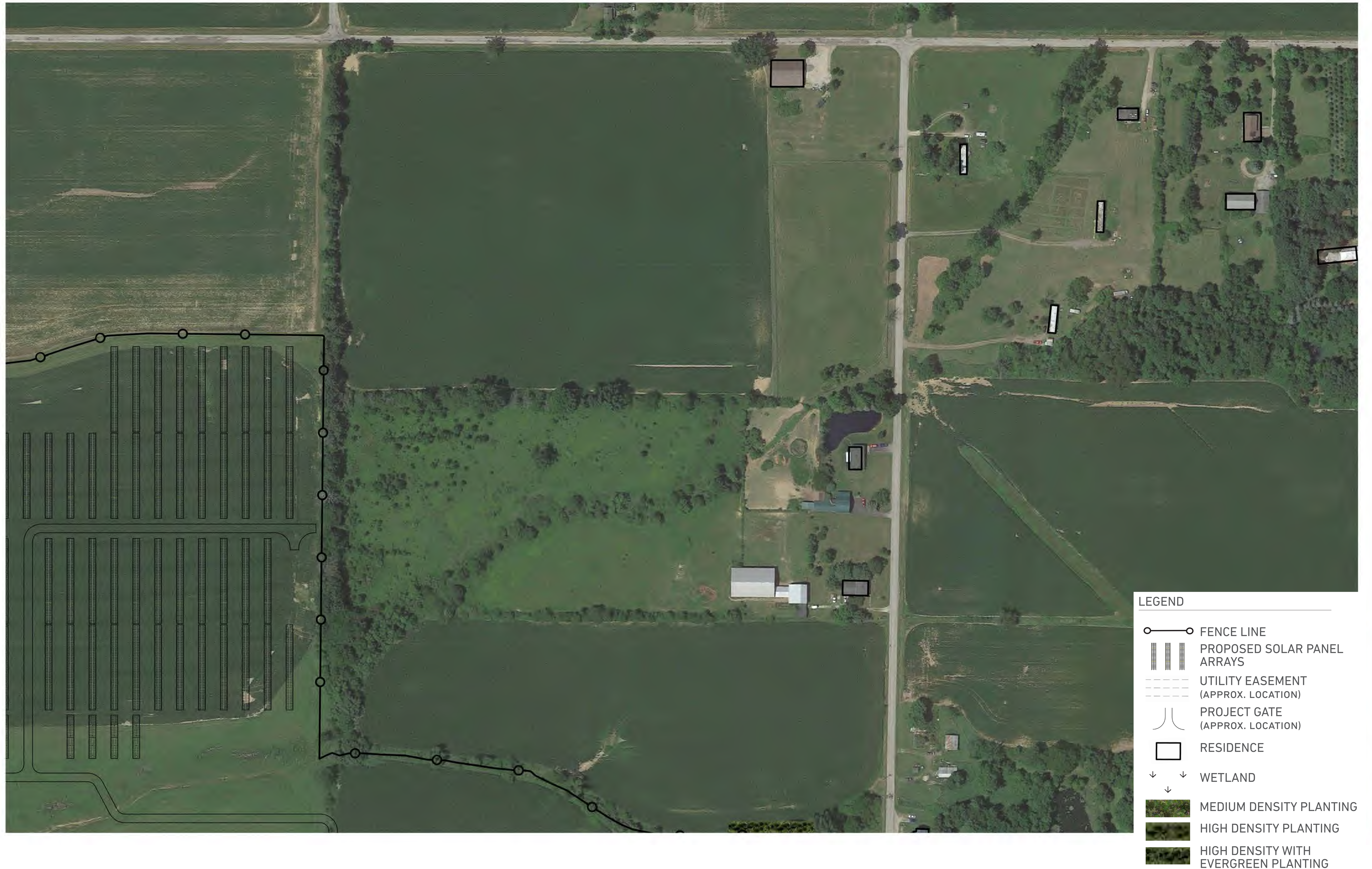




























**LEGEND**

- FENCE LINE
- PROPOSED SOLAR PANEL ARRAYS
- UTILITY EASEMENT (APPROX. LOCATION)
- PROJECT GATE (APPROX. LOCATION)
- RESIDENCE
- WETLAND
- MEDIUM DENSITY PLANTING
- HIGH DENSITY PLANTING
- HIGH DENSITY WITH EVERGREEN PLANTING



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**in**

**Case No(s). 22-0151-EL-BGN**

Summary: Application Application Exhibit Z (Landscaping Plan) electronically filed  
by Mr. Michael J. Settineri on behalf of Blossom Solar, LLC