

## **CASE NO. 895-AT-18**

SUPPLEMENTAL MEMORANDUM #5

March 22, 2018

**Petitioner:** Zoning Administrator

**Request:** Amend the Champaign County Zoning Ordinance to add “Solar Farm” as a new principal use under the category “Industrial Uses: Electric Power Generating Facilities” and indicate that Solar Farm may be authorized by a County Board Special Use Permit in the AG-1 Zoning District and the AG-2 Zoning District; add requirements and fees for “Solar Farm”; add any required definitions; and make certain other revisions are made to the Ordinance as detailed in the full legal description in Attachment A.

**Location:** Unincorporated Champaign County

**Time Schedule for Development:** As soon as possible

**Prepared by:** **Susan Burgstrom**  
Senior Planner

**John Hall**  
Zoning Administrator

**Brookens Administrative Center**  
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[www.co.champaign.il.us/zoning](http://www.co.champaign.il.us/zoning)

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### **STATUS**

The preliminary draft Finding of Fact dated March 29, 2018 is still under review. Staff is also working on an analysis of Best Prime Farmland disturbance for a solar farm and for by-right residential development. P&Z Staff plan to have both distributed prior to the March 29<sup>th</sup> hearing.

Revisions have been made to the proposed text amendment based on additional research, public testimony, and ZBA input. Attachment I is an annotated copy of the revisions and Attachment J is a clean copy of the proposed revisions. See the “Revisions to Draft Amendment” section below for more information.

A new alternative for the section on the decommissioning plan requirements has been included as Attachment K. See the “Alternative Decommissioning Requirements for Solar PV Farm” section below.

Testimony was received from several residents and businesses at the March 15, 2018 ZBA meeting. Staff hopes to have draft minutes complete prior to the March 29, 2018 ZBA meeting. Two witnesses provided additional information based on their testimony. Tim Montague submitted a fact sheet on decommissioning solar panel systems, which is Attachment B. Cindy Ihrke’s testimony and informational sources she mentioned are in Attachment C.

Staff received an article from Patti Petrie on March 19, 2018, from the New York Cooperative Extension: Considerations for Transferring Agricultural Land to Solar Panel Energy Production; see Attachment D.

Staff received several items from Patrick Brown on March 20-21, 2018:

- Example Specifications Sheets and Warranties for two Tier 1 solar modules – Trina Solar and Jinko Solar (Attachment E)
- Typical solar farm layout for 3 completed BayWa-re projects – 3 MW, 5 MW, and 20 MW (Attachment F)
- Solar Spotlight: Illinois, which was requested during the March 15, 2018 public hearing (Attachment G)

## REVISIONS TO DRAFT AMENDMENT

Revisions made since the February 22, 2018, version of the amendment are marked with red underline in the annotated version in Attachment I. The amendment has been revised as follows:

1. The overall amendment has been changed from “Solar Farm” to “Photovoltaic (PV) Solar Farm”. This change affects Definitions and everything in Sec. 6.1.5. This revision is due to complexities and challenges that would be present with other types of Solar Farms (primarily “concentrating solar farms”) that would require different standards than are adequate for PV Solar Farms.
2. Revised separation for adjacent lots that are three acres or less in area (Sec. 6.1.5 D.2.). This revision was briefly mentioned in the plan view illustrations of screening that were Attachment E to Supplemental Memorandum #4.
3. New minimum separations for PV SOLAR FARM electrical substation and transmission lines (new Sec. 6.1.5 D.4.).
4. A requirement has been added that tile repairs cannot be waived or modified except as authorized in the Special Use Permit (Sec. 6.1.5 F.2.(h). and other minor revisions related to the Agricultural Impact Mitigation Agreement (Sec. 6.1.5 F.3.). The addition regarding tile repairs was briefly reviewed in Supplemental Memorandum #3.
5. Revised buffer for dwellings within 1,000 feet including a greater fence separation for adjacent lots that are three acres or less in area (Sec. 6.1.5 M.2. and M.1.(c)). This revision was briefly mentioned in the plan view illustrations of screening that were Attachment E to Supplemental Memorandum #4.
6. Clarification of when underground wiring must be removed as part of decommissioning (new Sec. 6.1.5 Q.3.i.).
7. Reduction in the amount of financial assurance from 150% to 125% (Sec. 6.1.5 Q.4.(a) and 4.9(e)(5)). Staff reviewed case files and meeting minutes for Zoning Case 273-AT-00 Part B that added this requirement on March 21, 2002, but could find no documentation of the “150%” that is used in Sec. 6.1.1 A.5. for the minimum amount of financial assurance other than the fact this was as additional 50% of the construction cost due to the length of time between construction and possible decommissioning. The change to 125% is recommended based on an assumed inflation of 3% for five consecutive years (based on proposed updating

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of the financial assurance) and a minimum 10% contingency cost added to the estimated cost of decommissioning and then rounding that total to 125%.

8. Requirement for State's Attorney's Office review and approval of Letter of Credit and Escrow Account (new Sec. 6.1.5 Q.4.(h)).
9. Revised Zoning Use Permit fees for PV Solar Farm (Sec. 9.3.1 J.). This revision was briefly reviewed in Supplemental Memorandum #3.
10. Revision of Special Use Permit fees for PV Solar Farm (Sec. 9.3.3 B.8.). This minor revision corrected for some error in the previous proposed fees and provides greater consistency in fee ranges regarding the 7.5 megawatt nameplate rating threshold.

### **ALTERNATIVE DECOMMISSIONING STANDARDS**

An alternative decommissioning standard is proposed for PV SOLAR FARMS that use SOLAR PV modules having an unlimited warranty of at least 10 years and also having a limited power warranty to provide not less not than 80% nominal power output up to 25 years and proof of that warranty is provided at the time of Zoning Use Permit approval. This alternative standard is based on a modification of the Illinois Department of Agriculture Agricultural Impact Mitigation Agreement (AIMA) decommissioning structure as follows:

1. The amount of the financial assurance is 125% of the decommissioning estimate as compared to 100% required by the AIMA and the 150% required by the previous proposed amendment. This revision has not been proposed for Section 6.1.1 A.5. even though it is recommended by the Zoning Administrator.
2. The same incremental approach to establishing the financial assurance in eleven years (same as AIMA) except that the first step is at the time of permitting, similar to the previous proposed amendment.
3. The three increments are 12.5%, 62.5%, and 125%.
4. The conversion to an escrow account is not required until years 20 through 25, so that the escrow account will be in place by the end of the limited power warranty.

This alternative decommissioning should protect County interests without unduly burdening the solar farm developer with unnecessary costs.

If the County Board eventually adopts this alternative it should also consider revising the existing decommissioning requirements for a wind farm using a similar approach although warranties provided for wind farm turbines are nothing like the warranties available for this better class of PV modules.

**ATTACHMENTS**

- A Legal advertisement
- B Fact Sheet: Decommissioning solar panel systems, New York State Research and Development Authority (NYSERDA), received from Tim Montague on March 15, 2018
- C Cindy Ihrke's articles received during March 15, 2018 ZBA public hearing
- D Article: Considerations for Transferring Agricultural Land to Solar Panel Energy Production, NC Cooperative Extension, received from Patti Petrie on March 19, 2018
- E Example Specifications Sheets and Warranties for two Tier 1 solar modules, received from Patrick Brown on March 20, 2018
- F Typical Solar Farm Layout received for 3 completed BayWa-re projects – 3 MW, 5 MW, and 20 MW, received March 21, 2018 from Patrick Brown, BayWa-re Solar Projects LLC
- G Solar Spotlight: Illinois, Solar Energy Industries Association, received from Patrick Brown on March 20, 2018
- H LRMP Land Use Goals, Objectives, and Policies
- I Revised Proposed amendment (annotated) dated March 22, 2018
- J Revised Proposed amendment (clean) dated March 22, 2018
- K Alternative Decommissioning Requirements for Solar PV Farm and comparative table, dated March 22, 2018

**LEGAL PUBLICATION: WEDNESDAY, FEBRUARY 14, 2018**

**CASE: 895-AT-18**

**NOTICE OF PUBLIC HEARING REGARDING A PROPOSED AMENDMENT TO THE  
CHAMPAIGN COUNTY ZONING ORDINANCE.**

CASE: 895-AT-18

The Champaign County Zoning Administrator, 1776 East Washington Street, Urbana, has filed a petition to change the text of the Champaign County Zoning Ordinance. The petition is on file in the office of the Champaign County Department of Planning and Zoning, 1776 East Washington Street, Urbana, IL.

A public hearing will be held **Thursday, March 1, 2018, at 6:30 p.m.** prevailing time in the Lyle Shields Meeting Room, Brookens Administrative Center, 1776 East Washington Street, Urbana, IL, at which time and place the Champaign County Zoning Board of Appeals will consider a petition to:

Amend the Champaign County Zoning Ordinance as follows:

Part A. Amend Section 3 by adding definitions including but not limited to “NOXIOUS WEEDS” and “SOLAR FARM”.

Part B. Add paragraph 4.2.1 C.5. to indicate that SOLAR FARM may be authorized by County Board SPECIAL USE permit as a second PRINCIPAL USE on a LOT in the AG-1 DISTRICT or the AG-2 DISTRICT.

Part C. Amend Section 4.3.1 to exempt SOLAR FARM from the height regulations except as height regulations are required as a standard condition in new Section 6.1.5.

Part D. Amend subsection 4.3.4 A. to exempt WIND FARM LOT and SOLAR FARM LOT from the minimum LOT requirements of Section 5.3 and paragraph 4.3.4 B. except as minimum LOT requirements are required as a standard condition in Section 6.1.4 and new Section 6.1.5.

Part E. Amend subsection 4.3.4 H.4. to exempt SOLAR FARM from the Pipeline Impact Radius regulations except as Pipeline Impact Radius regulations are required as a standard condition in new Section 6.1.5.

Part F. Amend Section 5.2 by adding “SOLAR FARM” as a new PRINCIPAL USE under the category “Industrial Uses: Electric Power Generating Facilities” and indicate that SOLAR FARM may be authorized by a County Board SPECIAL USE Permit in the AG-1 Zoning DISTRICT and the AG-2 Zoning DISTRICT and add new footnote 15. to exempt a SOLAR FARM LOT from the minimum LOT requirements of Section 5.3 and paragraph 4.3.4 B. except as minimum LOT requirements are required as a standard condition in new Section 6.1.5.

Part G. Add new paragraph 5.4.3 F. that prohibits the Rural Residential OVERLAY DISTRICT from being established inside a SOLAR FARM County Board SPECIAL USE Permit.

Part H. Amend Subsection 6.1.1 A. as follows:

1. Add SOLAR FARM as a NON-ADAPTABLE STRUCTURE and add references to the new Section 6.1.5 where there are existing references to existing Section 6.1.4.
2. Revise subparagraph 6.1.1 A.11.c. by deleting reference to Section 6.1.1A. and add reference to Section 6.1.1A.2.

Part I. Add new subsection 6.1.5 SOLAR FARM County Board SPECIAL USE Permit with new standard conditions for SOLAR FARM.

Part J. Add new subsection 9.3.1 J. to add application fees for a SOLAR FARM zoning use permit.

Part K. Add new subparagraph 9.3.3 B.8. to add application fees for a SOLAR FARM County Board SPECIAL USE permit.

All persons interested are invited to attend said hearing and be heard. The hearing may be continued and reconvened at a later time.

Catherine Capel, Chair  
Champaign County Zoning Board of Appeals

**TO BE PUBLISHED: WEDNESDAY, FEBRUARY 14, 2018 ONLY**

Send bill and one copy to: Champaign County Planning and Zoning Dept.  
Brookens Administrative Center  
1776 E. Washington Street  
Urbana, IL 61802  
Phone: 384-3708

**FACT SHEET**

# DECOMMISSIONING SOLAR PANEL SYSTEMS



This fact sheet provides information to local governments and landowners on decommissioning of large-scale solar panel systems.

As local governments develop solar regulations and landowners negotiate land leases, it is important to understand the options for decommissioning solar panel systems and restoring project sites to their original status.

From a land use perspective, solar panel systems are generally considered large-scale when they constitute the primary use of the land, and can range from less than one acre in urban areas to 10 or more acres in rural areas. Depending on where they are sited, large-scale solar projects can have habitat, farmland, and aesthetic impacts. As a result, large-scale systems must often adhere to specific development standards.

### Abandonment and decommissioning defined

**Abandonment** occurs when a solar array is inactive for a certain period of time.

- Abandonment requires that solar panel systems be removed after a specified period of time if they are no longer in use. Local governments establish timeframes for the removal of abandoned systems based on aesthetics, system size and complexity, and location. For example, the Town of Geneva, NY, defines a solar panel system as abandoned if construction has not started within 18 months of site plan approval, or if the completed system has been nonoperational for more than one year.<sup>1</sup>
- Once a local government determines a solar panel system is abandoned, and has provided thirty (30) days prior written notice to the owner it can take enforcement actions, including imposing civil penalties/fines, and removing the system and imposing a lien on the property to recover associated costs.

**Decommissioning** is the process for removing an abandoned solar panel system and remediating the land.

- When describing requirements for decommissioning sites, it is possible to specifically require the removal of infrastructure, disposal of any components, and the stabilization and revegetation of the site.

### What is a decommissioning plan?

Local governments may require to have a plan in place to remove solar panel systems at the end of their lifecycle, which is typically 20-40 years. A decommissioning plan outlines required steps to remove the system, dispose of or recycle its components, and restore the land to its original state. Plans may also include an estimated cost schedule and a form of decommissioning security (see Table 1).

### What is the estimated cost of decommissioning?

Given the potential costs of decommissioning and land reclamation, it is reasonable for landowners and local governments to proactively consider system removal guarantees. A licensed professional engineer, preferably with solar development experience, can estimate decommissioning costs, which vary across the United States. Decommissioning costs will vary depending upon project size, location, and complexity. Table 1 provides an estimate of potential decommissioning costs for a ground-mounted 2-MW solar panel system. Figures are based on estimates from the Massachusetts solar market. Decommissioning costs for a New York solar installation may differ. Some materials from solar installations may be recycled, reused, or even sold resulting in no costs or compensation. Consider allowing a periodic reevaluation of decommissioning costs during the project's lifetime by a licensed professional engineer, as costs could decrease and the required payment should be reduced accordingly.

**Table 1:** Sample list of decommissioning tasks and estimated costs

| Tasks   | Estimated Cost (\$) |
|---|---------------------|
| Remove Rack Wiring                                | \$2,459             |
| Remove Panels                                     | \$2,450             |
| Dismantle Racks                                   | \$12,350            |
| Remove Electrical Equipment                       | \$1,850             |
| Breakup and Remove Concrete Pads or Ballasts      | \$1,500             |
| Remove Racks                                      | \$7,800             |
| Remove Cable                                      | \$6,500             |
| Remove Ground Screws and Power Poles              | \$13,850            |
| Remove Fence                                      | \$4,950             |
| Grading   | \$4,000             |
| Seed Disturbed Areas                              | \$250               |
| Truck to Recycling Center                         | \$2,250             |
| <b>Current Total</b>                              | <b>\$60,200</b>     |
| <b>Total After 20 Years (2.5% inflation rate)</b> | <b>\$98,900</b>     |

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<sup>1</sup> Town of Geneva, N.Y. CODE § 130-4(D)(5) (2016)



## How can decommissioning be ensured?

Landowners and local governments can ensure appropriate decommissioning and reclamation by using financial and regulatory mechanisms. However, these mechanisms come with tradeoffs. Including decommissioning costs in the upfront price of solar projects increases overall project costs, which could discourage solar development. As a result, solar developers are sometimes hesitant to provide or require financial surety for decommissioning costs.

It is also important to note that many local governments choose to require a financial mechanism for decommissioning. Although similar to telecommunications installations, there is no specific authority to do so as part of a land use approval for solar projects (see Table 2). Therefore, a local government should consult their municipal attorney when evaluating financial mechanisms.

The various financial and regulatory mechanisms to decommission projects are detailed below.

**Table 2:** Relevant Provisions of General City, Town, and Village Laws Relating to Municipal Authority to Require Conditions, Waivers, and Financial Mechanisms

| Site Plan Review                   | General City Law | Town Law  | Village     |
|------------------------------------|------------------|-----------|-------------|
| Conditions                         | 27-a (4)         | 274-a (4) | 7-725-a (4) |
| Waivers                            | 27-a (5)         | 274-a (5) | 7-725-a (5) |
| Performance bond or other security | 27-a (7)         | 274-a (7) | 7-725-a (7) |
| Subdivision                        | General City Law | Town Law  | Village Law |
| Waivers                            | 33 (7)           | 277 (7)   | 7-730 (7)   |
| Performance bond or other security | 33 (8)           | 277 (9)   | 7-730 (9)   |
| Special                            | General City Law | Town Law  | Village Law |
| Conditions                         | 27-b (4)         | 274-b (4) | 7-725-b (4) |
| Waivers                            | 27-b (5)         | 274-b (5) | 7-725-b (5) |

Source: Referenced citations may be viewed using the NYS Laws of New York Online

Excerpts from these statutes are also contained within the "Guide to Planning and Zoning Laws of New York State," New York State Division of Local Governments Services, June 2011: [www.dos.ny.gov/lg/publications/Guide\\_to\\_planning\\_and\\_zoning\\_laws.pdf](http://www.dos.ny.gov/lg/publications/Guide_to_planning_and_zoning_laws.pdf)

## Financial mechanisms

### Decommissioning Provisions in Land-Lease Agreements.

If a decommission plan is required, public or private landowners should make sure a decommissioning clause is included in the land-lease agreement. This clause may depend on the decommissioning preferences of the landowner and the developer. The clause could require the solar project developer to remove all equipment and restore the land to its original condition after the end of the contract, or after generation drops below a certain level, or it could offer an option for the landowner to buy-out and continue to use the equipment to generate electricity. The decommissioning clause should also address abandonment and the possible failure of the developer to comply with

the decommissioning plan. This clause could allow for the landowner to pay for removal of the system or pass the costs to the developer.

**Decommissioning Trusts or Escrow Accounts.** Solar developers can establish a cash account or trust fund for decommissioning purposes. The developer makes a series of payments during the project's lifecycle until the fund reaches the estimated cost of decommissioning. Landowners or third-party financial institutions can manage these accounts. Terms on individual payment amounts and frequency can be included in the land lease.

**Removal or Surety Bonds.** Solar developers can provide decommissioning security in the form of bonds to guarantee the availability of funds for system removal. The bond amount equals the decommissioning and reclamation costs for the entire system. The bond must remain valid until the decommissioning obligations have been met. Therefore, the bond must be renewed or replaced if necessary to account for any changes in the total decommissioning cost.

**Letters of credit.** A letter of credit is a document issued by a bank that assures landowners a payment up to a specified amount, given that certain conditions have been met. In the case that the project developer fails to remove the system, the landowner can claim the specified amount to cover decommissioning costs. A letter of credit should clearly state the conditions for payment, supporting documentation landowners must provide, and an expiration date. The document must be continuously renewed or replaced to remain effective until obligations under the decommissioning plan are met.<sup>2</sup>

## Nonfinancial mechanisms

Local governments can establish nonfinancial decommissioning requirements as part of the law. Provisions for decommissioning large-scale solar panel systems are similar to those regulating telecommunications installations, such as cellular towers and antennas. The following options may be used separately or together.

- **Abandonment and Removal Clause.** Local governments can include in their zoning code an abandonment and removal clause for solar panel systems. These cases effectively become zoning enforcement matters where project owners can be mandated to remove the equipment via the imposition of civil penalties and fines, and/or by imposing a lien on the property to recover the associated costs. To be most effective, these regulations should be very specific about the length of time that constitutes abandonment. Establishing a timeframe for the removal of a solar panel system can be based on system aesthetics, size, location, and complexity. Local governments should include a high degree of specificity when defining "removal" to avoid ambiguity and potential conflicts.

<sup>2</sup> See a letter of credit submitted to the Vermont Public Service Board by NextSun Energy, LLC [http://psb.vermont.gov/sites/psb/files/docketsandprojects/Solar/Exhibit%20Petitioner%20JL-7%20\(Revised%20326.14\).pdf](http://psb.vermont.gov/sites/psb/files/docketsandprojects/Solar/Exhibit%20Petitioner%20JL-7%20(Revised%20326.14).pdf)



- **Special Permit Application.** A local government may also mandate through its zoning code that a decommissioning plan be submitted by the solar developer as part of a site plan or special permit application. Having such a plan in place allows the local government, in cases of noncompliance, to place a lien on the property to pay for the costs of removal and remediation.
- **Temporary Variance/Special Permit Process.** As an alternative to requiring a financial mechanism as part of a land use approval, local governments could employ a temporary variance/special permit process (effectively a re-licensing system). Under this system, the locality would issue a special permit or variance for the facility for a term of 20 or more years; once expired (and if not renewed), the site would no longer be in compliance with local zoning, and the locality could then use their regular zoning enforcement authority to require the removal of the facility.

### What are some examples of abandonment and decommissioning provisions?

The New York State Model Solar Energy Law provides model language for abandonment and decommissioning provisions: [www.cuny.edu/about/resources/sustainability/reports/NYS\\_Model\\_Solar\\_Energy\\_LawToolkit\\_FINAL\\_final.pdf](http://www.cuny.edu/about/resources/sustainability/reports/NYS_Model_Solar_Energy_LawToolkit_FINAL_final.pdf)

The following provide further examples that are intended to be illustrative and do not confer an endorsement of content:

- Town of Geneva, N.Y., § 130-4(D):  
[ecode360.com/28823382](http://ecode360.com/28823382)
- Town of Olean, N.Y., § 10.25.5:  
[www.cityofolean.org/council/minutes/ccmin2015-04-14.pdf](http://www.cityofolean.org/council/minutes/ccmin2015-04-14.pdf)

### Is there a checklist for decommissioning plans?

The following items are often addressed in decommissioning plans requirements:<sup>3</sup>

- Defined conditions upon which decommissioning will be initiated (i.e., end of land lease, no operation for 12 months, prior written notice to facility owner, etc.).
- Removal of all nonutility owned equipment, conduit, structures, fencing, roads, and foundations.
- Restoration of property to condition prior to solar development.
- The timeframe for completion of decommissioning activities.
- Description of any agreement (e.g., lease) with landowner regarding decommissioning.
- The party responsible for decommissioning.
- Plans for updating the decommissioning plan.
- Before final electrical inspection, provide evidence that the decommissioning plan was recorded with the Register of Deeds.

## Additional Resources

Template Solar Energy Development Ordinance for North Carolina (see Appendix G at pg. 21 for Sample Decommissioning Plan): [nccleantech.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance\\_V1.0\\_12-18-13.pdf](http://nccleantech.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance_V1.0_12-18-13.pdf)

Land Use Planning for Solar: [training.ny-sun.ny.gov/images/PDFs/Land\\_Use\\_Planning\\_for\\_Solar\\_Energy.pdf](http://training.ny-sun.ny.gov/images/PDFs/Land_Use_Planning_for_Solar_Energy.pdf)

Zoning Guide for Solar: [training.ny-sun.ny.gov/images/PDFs/Zoning\\_for\\_Solar\\_Energy\\_Resource\\_Guide.pdf](http://training.ny-sun.ny.gov/images/PDFs/Zoning_for_Solar_Energy_Resource_Guide.pdf)

Information on First Solar's recycling program for all of their modules: [www.firstsolar.com/en/Technologies-and-Capabilities/Recycling-Services](http://www.firstsolar.com/en/Technologies-and-Capabilities/Recycling-Services)

PV Cycle: Europe's PV recycling program: [www.pvcycle.org/](http://www.pvcycle.org/)

Solar Energy Industries Association (SEIA) information on solar panel recycling: [www.seia.org/policy/environment/pv-recycling](http://www.seia.org/policy/environment/pv-recycling)

Silicon Valley Toxics Coalition: [svtc.org/](http://svtc.org/)

Silicon Valley Toxic Coalition Solar Scorecard: [www.solarscorecard.com/2015/2015-SVTC-Solar-Scorecard.pdf](http://www.solarscorecard.com/2015/2015-SVTC-Solar-Scorecard.pdf)

End-of-life PV: then what? - Recycling solar panels: [www.renewableenergyfocus.com/view/3005/end-of-life-pv-then-what-recycling-solar-pv-panels/](http://www.renewableenergyfocus.com/view/3005/end-of-life-pv-then-what-recycling-solar-pv-panels/)

NY-Sun, a dynamic public-private partnership, will drive growth in the solar industry and make solar technology more affordable for all New Yorkers. NY-Sun brings together and expands existing programs administered by the New York State Energy Research and Development Authority (NYSERDA), Long Island Power Authority (LIPA), PSEG Long Island, and the New York Power Authority (NYPA), to ensure a coordinated, well-supported solar energy expansion plan and a transition to a sustainable, self-sufficient solar industry.

<sup>3</sup>North Carolina Solar Center, NC Sustainable Energy Center: December 2013 Template Solar Energy Development Ordinance for North Carolina [https://nccleantech.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance\\_V1.0\\_12-18-13.pdf](https://nccleantech.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance_V1.0_12-18-13.pdf)



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## Craven County Center

300 Industrial Dr New Bern, NC 28562

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» **Considerations for Transferring Agricultural Land to Solar Panel Energy Production**

# Considerations for Transferring Agricultural Land to Solar Panel Energy Production

The decision to transfer land use from agricultural production to solar panel electrical production (solar farms) should be made by careful examination of immediate and long-term potential risks and benefits. Currently, the transition seems a logical and profitable venture since payments made by contractors are much greater than revenue received from farmland rental. However, one must also consider that the transfer of land from agricultural use may also result in additional tax liability, greater insurance requirements, personal injury/liability issues, potential future environmental mitigation, and even the inability to transfer lands into other uses.

This article will briefly address: 1) General Economic & Resource Considerations; 2) General Land Maintenance; 3) Tax Implications; 4) Comparison of Commercial vs Agricultural Land Environmental Concerns; 5) Wildlife Impacts; 6) Proximity to Airports; 7) Fire Safety; 8) Drainage, Stormwater & Soil Quality Considerations; 9) Vegetative Buffer Zones; 10) Weed, Shrub & Tree Maintenance; 11) Evaluation of the Contract; 12) Farmland Preservation Programs; and, 13) Future Considerations.

## GENERAL ECONOMIC & RESOURCE CONSIDERATIONS

Within Craven County, NC, agricultural farm sales since 2007 (field crop and livestock production only) ranged from \$40-\$70 million annually depending upon price of commodities and yield. According to an economic study by NCSU in 2008, jobs and

services supporting this industry added over \$312 million to the local economy. However, the number of farmlands converted to other uses over the past 15 years has exceeded a twenty square mile area. This directly effects farmers and the local economy. Thus, any additional loss of farmland will adversely affect the agricultural economy.

In contrast, landowner income may be significantly higher from solar farm income compared to agricultural rental income. Additionally, transition of farmland to commercial property increases tax revenue for the county. Too, some increase in jobs is likely during construction and may remain for maintenance, depending upon contractual agreements. Assuming the solar farm's usefulness remains until full term of contract (usually 15-20 years), income and taxes generated could add value to the landowner and county.

In addition to personal and governmental revenue, one must also consider one of the goals for establishing solar panels is to provide energy production to lessen the reliance upon energy sources that are considered a negative impact upon the environment or are available in limited quantity. However, energy production from solar farms is not equal for all locations. Too, current federal or state mandates and tax incentives that make this technology feasible may not exist in the future. Lastly, technology changes rapidly. Thus, carefully examine the transition. Past solar and wind farm production has experienced this situation and many sites were abandoned rather than upgraded.

Also consider that the goal of those developing solar farms is to make a profit. Farmland within Craven County, NC is valued between \$2,500-\$4,000 per acre. Yet companies are willing to pay upward to \$800-\$1000/ac per year for twenty years. This is a much, much higher payment to the landowner than the company would make should they simply decide to purchase the farm. Thus, it begs the question as to why a company would choose to pay a much higher rate to a landowner rather than purchase the farm to realize a higher profit. Logically, this decision does not appear to be the most profitable choice for the developing company. As such, there is more than profit to consider when transitioning farmland to solar farms.

Perhaps the most troubling issue involving solar farm establishment is to consider the possibility that the solar farm is abandoned within the first few years. If this occurs, what risks or financial obligation will the landowner face? Can the solar farm actually be decommissioned with ease and low cost? Will the farm be limited in use due to environmental, wetland or even contractual limitation? These types of consideration must be examined prior to converting land from agricultural use to solar farms.

# TAX IMPLICATIONS

Under the current North Carolina tax system, agricultural land is eligible to be taxed based upon farm use. This system, known as Present Use Value (PUV), defers commercial tax rates on agricultural lands as long as the use of the land remains agricultural. This protects farmland by taxing the land at a lower rate rather than commercial/development value. However, when land enrolled in the PUV system is converted to non-agricultural uses, three years of taxes are due, with interest, based upon the commercial value of the land. Thus, one must be prepared to pay these taxes and interest should land be transferred from agricultural use.

Conversely, if the landowner wishes to maintain the land in the PUV system, then agricultural production and solar production must be maintained simultaneously. While this is permitted, to be done successfully requires establishment of some type of agricultural production that is compatible with solar farm use. Typically, development of a pasture production either for grazing or harvest has been established. However, this also adds additional management and costs. As such, depending upon the size of the parcel of land and the landowner's personal desires, this may or may not be a consideration. (Click [HERE](#) to read an editorial supporting this type of venture.

Additional tax implications, tax credits, estimated commercial values and information is available [HERE](#).

# COMPARISON OF COMMERCIAL VERSES AGRICULTURAL ENVIRONMENTAL CONCERNS

Land classification may impact land use. Many current farms are lands that were considered wetlands that were cleared decades ago when this activity was allowed. As land currently in agricultural use, it is protected as a "previously cleared wetland" (PC) and farmers are allowed to continue farming the land. Under current regulations, PC farmland will be permitted to change from agricultural to commercial use. However, future conversion from a solar farm established on PC farmland to non-agricultural uses will be regulated by various agencies and environmental regulations. In worst case scenario, solar farms established on PC farmland may not be permitted to other uses without wetland mitigation. PC farmlands, may, however, be eligible to convert back into agricultural production depending upon soil hydrology.

Conversion of PC farmlands may also impact farm program participation for the current tenant farmer. If an entire farm is not placed into solar energy production, then the

remaining portion of the farm still in agricultural production must meet requirements set forth in the 2014 Farm Bill. Currently, a farmer tending any farm or portion of farm that is not in compliance with all wetland provisions jeopardizes federal farm support programs for all lands tended and may face fines and penalties. This could result in thousands to hundreds of thousands of dollars loss to the farmer, depending upon the size of the farming operation and value of crops produced. Currently, the USDA Farm Service Agency, the USDA Natural Resource and Conservation Service, and the Army Corps of Engineers coordinates to make these wetland and compliance determination. All landowners are encouraged to examine the land classification and status prior to conversion of land from agricultural production to avoid potential liability and regulatory actions.

In addition to potential wetland ramifications, some farms may be near rivers or streams with restrictive land uses. As example, the Neuse Rules and associated legislation established a 50-foot vegetative buffer requirement along the Neuse River and tributaries of the river (Blue line streams). If land currently utilized as agricultural production lies within this buffer, the land is allowed to continue in agricultural production. However, if removed from agricultural production, no alternative land use is permitted.

Another scenario, and admittedly perhaps the worst case scenario, involves abandonment of the solar farm. Solar farms left idle not only decrease land value, abandonment also subjects the land to provisions of the Clean Water Act. Thus, if land is left idle for long and the land also has a wetland hydrology, reclaiming the land may be difficult, if not impossible. Should this occur, within Eastern Coastal Carolina, land use would be regulated by the EPA, the Corps of Engineers and the Coastal Area Management Act.

These examples are provided to emphasize the need to examine environmental rules and regulations prior to establishment of a solar farm. Generally speaking, farmlands that are not classified as PC or do not have portions of the farmland with wetland hydrology do not fall under many regulations restricting land use. For these farmlands, simply consider that historically, environmental rules have not become less restrictive, but more restrictive.

## **GENERAL LAND MAINTENANCE**

Often, with the inclusion of a land rental agreement, a farmer actively maintains ditch banks by removing unwanted vegetation or soil; grades roads or paths; mows near wooded areas; or, provides other general farm maintenance. As a solar farm, these tasks fall back to the landowner. If no equipment is owned to perform these tasks, equipment will need to be purchased to maintain the farm. Alternatively, these tasks

may be contracted.

Farmland maintenance will especially be critical shortly after development or for land that has a permanent stream in order to protect against erosion or flooding concerns. Removal from agricultural land use does not exempt the landowner from soil or stream maintenance that might otherwise impact water flow or degrade soil or water quality.

Many soils within Craven County, NC are either very coarse sand or soils that drain poorly. Both of these situations may result in topsoil either shifting, sinking or eroding near the base of equipment. Slight shifts in solar panels will alter the degree of tilt required for the unit to function properly or even may cause a fire hazard (See Fire Safety). Thus, replacement of eroded topsoil should be a priority, especially between the time after completion of the construction and establishment of a permanent ground cover.

Flooding is another issue that should be examined. Storm events within this area historically cause flooding for some areas. Maps showing the flood plains are available for review at <http://www.ncfloodmaps.com/> . However, also consider that continued development and increased impervious surface modifies this map data. Thus, some variance is likely due to a changing environment, increased development and water management (or lack thereof).

One should also consider that Eastern NC is at risk for frequent tropical storm systems. Trees and debris will fall into the area. As farmland, the farmer tending the land normally assumes the responsibilities and cost of cleanup. In some cases, the farmer may qualify for financial assistance for cleaning up the debris. Commercial property may or may not qualify for such and it will be the responsibility of the landowner to clean up debris.

## **WEED, SHRUB & TREE MAINTENANCE**

Left alone without cultivation and management, farmlands will progress from a mixture of weeds to small shrubs and eventually forest. Thus, weed, shrub and small tree maintenance must be considered. Either the landowner will need to provide for this effort or contract these tasks with a service provider. As a landowner, applying a non-restricted use herbicide does not require a license for pesticide applications to manage the lands. However, many of the shrubs and small trees are not easily controlled by these general herbicides. Thus a license to purchase and use a restricted use herbicide may be necessary. Currently, this license can be obtained by passing an exam provided by the North Carolina Department of Agriculture and Consumer Services (NCDAS & CS) Pesticide Division. This license will require attending four hours of training in a three-

year time period and a small fee to maintain this license. For more information pertaining to licensing, visit the web site <http://www.ncagr.gov/SPCAP/pesticides/index.htm>.

If the landowner chooses, a commercial applicator may be contracted to provide vegetative maintenance on the solar farm. Simply ensure that the person or company has the appropriate license(s). Within current legal structure, most commercial applicators are likely to have license permitting general weed control but one must be licensed in forestry to manage trees or shrubs. Thus, as a worst case scenario, it may be necessary to contract with more than one person/company. *(Note: Farmers are allowed to apply herbicides on farms they own or lease but are not permitted to apply on property of others. Such privilege is allowed only for commercial operators.)*

## WILDLIFE IMPACTS

Aim to evaluate the potential impact this project might have upon wildlife. Consider both the good and unfavorable potential consequences. Small shrubs or tree borders may protect the investment as well as provide an aesthetically pleasing area. However, some plants will simply not tolerate the amplified light or heat if planted too close to the solar panels. Too, establishment of a border may increase activity of small birds, insects and small mammals. However, this also increases the chance of wildlife nesting. Removal of bird's nest or wasp nest should be a routine maintenance to prevent potential fires or permanent damage to equipment (See Fire Safety). For additional resources for those wishing to consider wildlife conservation and wildlife protection a priority during planning and development, visit <http://www.ncwildlife.org/Conserving/Programs/GreenGrowthToolbox.aspx>

## DRAINAGE, STORMWATER & SOIL QUALITY CONSIDERATIONS

Currently solar farms are considered pervious structures by the State of North Carolina if positioned such that water does not pond on the panels. Even so, large systems may require inclusion of drainage and/or stormwater plans. Additionally, soil erosion and soil quality must be maintained, regardless of size. Both of these may require modification in layout. Due to the potential complexity of this issue based upon size, location and existing structures, it is not possible to provide guidance for stormwater or all erosion control within this article. Planning should include discussion with appropriate planning departments (County or Municipal) depending upon jurisdiction as well as the local Soil & Water Conservation office.

In contrast to stormwater management, addressing soil management is a relatively simple process. Simply protect soil by planting a permanent ground cover. Many types of permitted grasses will qualify. Aim to provide proper fertilization to maintain growth. The NCDA & CS Agronomic Division provides soil testing for plant nutrients and lime. Soil testing and recommendations are free of charge from April 1<sup>st</sup> through the end of November. (There is a \$4 charge per sample for submission any other time). Sampling instructions, forms, boxes and other assistance is available from any local N.C. Cooperative Extension office. Additional information, payment for samples submitted (when appropriate), and instructions are also available at <http://www.ncagr.gov/agronomi/sthome.htm> . Note that some fertilizers may be corrosive to metals, plastics and glass used in the solar farms. Thus apply fertilizer with care to avoid damage to the panels or electrical conduits.

The goal of fertilization should be to provide adequate nutrients to establish the desired ground cover. Poor ground cover, in a worst case scenario, may result in sheet flow erosion as large quantities of water rush off of the solar panels during heavy storm events. Even frequent, yet less heavy rainfall events may create a dripline directly beneath the individual panels that may cause a shift in equipment angle. If this occurs, restoring the eroded land and prevention of runoff into surrounding surface waters will be the responsibility of the landowner or contractor/developer, depending upon the designation made within the contract.

Lastly, most solar farms are indeed safe to operate. However, potentially toxic heavy metals and silicone by-products are used in these projects. Damaged units or time may release these contaminants into the environment. As such, consider taking soil samples to monitor for potential contaminants. For additional information concerning potential contaminants as outlined by the EPA, visit <https://www.epa.gov/chemical-research/ecological-soil-screening-level-metal-contaminants> .

## PROXIMITY TO AIRPORT

Establishment of solar farms has been noted as a potential hazard for airports and air traffic controllers. Generally, the requirements of notification are not necessary for solar panels established more than 5 nautical miles from an airport. According to their website, the Federal Aviation Administration (FAA) essentially has two objectives as follows:

1. No potential for glint or glare in the existing or planned Airport Traffic Control Tower (ATCT) cab, and
- 2.



No potential for glare or "low potential for after-image" along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds) as shown on the current FAA-approved Airport Layout Plan (ALP)17. The final approach path is defined as two (2) miles from fifty (50) feet above the landing threshold using a standard three (3) degree glide path.

In most cases, solar farms do not emit frequencies that are not in compliance with the FAA Co-location Policy or other regulations that may impact flight paths. However, it is advisable to discuss potential solar farm issue with the FAA's local Airport District Office (ADO) for civilian airports or the NC Commander's Council for military facilities if this might be a concern.

Steps below can assist in evaluation of proper procedure should one question whether the solar farm might create a potential hazard for air traffic. Tools and steps that will assist in these evaluations are listed below.

1. Google Earth – Use this mapping tool (or similar program) to determine if the proposed facility is within 5 nautical miles of an airport as well as to gather the GIS coordinates and elevation of the field site.
2. Go to the FAA website, <https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp> and enter this data. If a report is required, it will be noted at this site.
3. Visit the website, <https://www.sghat.com/> to determine if glare or after-images might be a problem with major flight paths.
4. Take printed copies of the above data to the local airport for discussion.

## FIRE SAFETY

Fire codes will apply to this structure, just as with any other commercial property. Thus, it is advisable to discuss the potential regulations prior to establishment. Having thus said, most solar farms can be established with minimum restrictions. Generally, clearly marking all direct-current conduits, conductors, enclosures, etc., as well as leaving a clear area (brush free) of at least 10 feet around the array is sufficient.

Another consideration for fire safety will be to discuss fire plans and facility layout with the appropriate Fire Marshal (county and/or city). These panels should always be considered as having maximum voltage and a potential electrical hazard. Nest from birds, insects and small animals may cause fires. Fires on site may place fire-fighters

and others at risk of electrocution. As such, a pre-fire plan to determine a salvage treatment, if any, in case of a fire should be discussed with all contracting parties, fire departments and Fire Marshal.

## VEGETATIVE BUFFER ZONES

Specific regulations or ordinances do not currently exist within the State of North Carolina to mandate a vegetative buffer zone. However, municipal or county ordinances may have these requirements. Even if no regulation requires a vegetative buffer zone, there are some reasonable functions that a vegetative buffer zone will serve. As example, a vegetative buffer zone may provide some protection against wind-blown objects from entering the area where panels are established, may provide some protection against intrusion of vehicles if the area is located on a major highway, or may provide some deflection of potential sunlight glare if the areas is located near neighborhoods or a major highway. Thus, not only will the vegetative border be pleasing, it may serve some practical functions. (See also Maintenance and Wildlife Sections)

## EVALUATION OF THE CONTRACT

Care should be taken to examine all aspects of the contract. Typically, such contracts are written to protect the company, not the landowner. As such, the contract outlines responsibilities and rights of the two parties but are typically one-sided in that they protect the developer/contractor's rights but may greatly limit the landowner's rights. One must remember, the developer/contractor is approaching the agreement to protect himself from as much liability as possible and to make a profit.

It is not the intent of this article to outline all considerations of a contract. However, a few of the major issues that need to be considered are listed below. It is *highly recommended* to consult legal counsel prior to signing the contract.

Potential contractual considerations include:

- Can the contract or any agreement/obligation of the contract be sold, transferred or assigned to another party. If so, what are the terms? The ability to sell a contractual obligation may mean that the company or individual you contract with today is not the same tomorrow. Too, if allowed, the company/contractor to which the agreement is transferred may be limited in liability or simply not agree to all original terms. In some cases, transferal of the agreement may be to a company/contractor that does not have the ability to provide adequate financial backing or proper authority to meet original obligations. Simply make sure that if this clause is included in the contract that the specific conditions, terms, liability

and risks associated with such transferal are outlined.

- Easement, right of ways, permission to enter the farmland at will and/or right to work of other parties should be considered carefully. Leases allow a landowner to provide a tenant exclusive rights for a specific time period. They are easily terminated. An easement provides the owner the right to continue using his/her land but transfers an interest in the property, and associated rights, to a third party. They are often recorded with the deed. As such, they are not easily terminated.
- Does the contract allow the developer/contractor access to the land at any time? Some clauses allow entry, without notification, at any time during the term of the contract. Specifically outline who has access to property and under what terms or conditions. Failure to do so may allow the contractor, developer, sub lessee or others access at any time without notification to the landowner.
- Does the contract require the landowner to protect the developer/contractor's interest? If so, this broad term may imply legal fees, liability insurance or other matters. Avoid such clauses and terms and specify exactly what is needed by the contractor rather than a general, unclear clause that might increase the landowner's risks. Make sure these items are specifically outlined.
- Who is liable for injury of a person during establishment, operation or maintenance of the solar panels? In some cases, landowners may become entangled in legal disputes over worker injury. Make sure to protect yourself against such situation by specifically outlining such liability and responsibilities.
- Who is responsible for disputes with sub-contractors, sub lessee or others? As a landowner, it is especially critical to separate your responsibility from those of the contractors/developers. Otherwise, legal action for which you have no control over may result.
- Do both parties have the right to terminate the agreement without cause? If not, then what are the terms of termination? Solar farms do not generate power equally. In some cases, poor performance may result in an inactive site. If so, as a landowner, do you have the right to terminate the agreement? These issues need to be clearly defined in the contract.
- If there is a dispute or legal matter, what state determines the applicable laws. Some contracts specify that all legal matters be handled by arbitration in the state of the contracting company's origin or operation. Insist that all legal matters and disputes follow local state laws and that disputes be settled within the state that the solar farm is located.
- Consider having the contract publicly recorded. Many contractors not only do not

wish for this to occur, the contract may specifically have wording preventing disclosure of terms, operation or any business matters concerning the solar farms. Rather a "memorandum" is executed. Many states do not regard these memorandums as a binding legal agreement and thus are not as enforceable as publicly recorded contracts.

- Make sure that any changes to the contract or agreements is in writing and that the party representing the contract and work has the authority to make changes to the contract. In some cases, a third-party administrating company provides sales or initial contact. These individuals or companies may or may not have authority to accept changes to a contract.
- Many lending institutions, for various liability and risk concerns, will not allow solar farms to be placed onto farms with a lien. If the farm is not fully paid, check with the lending institution. Otherwise, full payment of the remaining balance may be due should the farm be placed into a solar farm.
- Evaluate the liability of injury to workers, visitors to the site, potential environmental damage, fire, vandalism, or other unintended consequences. Liability insurance costs and needs for commercial property may greatly differ from liability insurance for farmland. As such, make sure the contract clearly specifies who owns the equipment and liability of damage to equipment or personal injury.
- Avoid clauses or phrases that are vague such as allowing entry of the developer, contractors or assignee to "undertake any activities that are necessary, helpful, appropriate or convenient in connection with, incidental to, or for the benefit of one or more projects." Such statements give the contractor/developer or others open-ended rights and even the right for future development. Make sure to specifically outline all activities and responsibilities for all parties and specifically state that no others are implied.

Additional information on contract considerations is found at

<https://nccleantech.ncsu.edu/wp-content/uploads/Solar-Land-Lease-Issues.pdf>

## FARMLAND PRESERVATION PROGRAMS

Craven County, NC, as many counties within North Carolina has farmland preservation programs such as the Voluntary Agricultural District (VAD) or Enhanced Agricultural District. (EVAD). These programs identify farmland that the landowner has voluntarily committed to agricultural production and conservation practices to protect natural resources. As such, no commercial development is allowed.

The Craven County Agricultural Advisory Board administers these programs. If farmlands enrolled into a VAD are to be removed from agricultural production and placed into solar farms, a letter addressed to this board requesting removal is required (and payment for removal of the Conservation Agreement with the Register of Deeds). Once the Agricultural Advisory Board receives this letter, the process should take between 30-90 days.

Farmland enrolled in an EVAD are more secure and binding. These lands have been enrolled as land that will remain in agricultural use for a minimum of 10 years from the date of enrollment and the land is automatically renewed for three-year time periods thereafter. There are penalties for early removal. However, once the original term has expired, the process for removal of lands from an EVAD are identical to the VAD.

Contact and additional information for the Craven County Agricultural Board is found at <http://www.cravencountync.gov/boards/volunteer/vad.cfm>.

## DECOMMISSIONING

Currently no ordinance or provision provides for mandatory decommissioning in North Carolina. However, decommissioning may be warranted should the contracting company choose not to utilize the site, the site becomes damaged beyond reasonable repair, as the equipment ages, or equipment becomes too inefficient to provide profit. At some point, whether by choice or by default, the solar panels and equipment will need to be removed.

One of the primary obstacles currently faced by solar farms is that many of the products used consist of heavy metals and contaminants that cannot be disposed within a landfill. Many of the products will need to be recycled. Some companies offer this service for free or a small charge. However, the current concern is that there are not enough decommissioned solar panels to justify recycling of the materials. Thus, it may be difficult and costly to decommission the site.

Guidelines for decommissioning as listed within the publication, *Template Solar Energy Development Ordinance for North Carolina* include:

Consider decommissioning under if any of the following conditions:

1. The land lease ends
2. The system does not produce power for 12 months
3. The system is damaged and will not be repaired or replaced

The owner/contractor of the solar farm, as provided for in its lease with the landowner, should do the following as a minimum to decommission the project.

1. Remove all non-utility owned equipment, conduits, structures, fencing, and foundations to a depth of at least three feet below grade.
2. Remove all graveled areas and access roads unless the owner of the leased real estate requests in writing for it to stay in place.
3. Restore the land to a condition reasonably similar to its condition before development, including replacement of top soil removed or eroded.
4. Revegetate any cleared areas with warm season grasses that are native to the region unless requested in writing by the owner of the real estate to not revegetate due to plans for agricultural planting.
5. Provide soil (and water if near a stream) sample reports from a private lab showing soil (water) on the location is free of heavy metals and contaminants and is suitable for agricultural production or desired use.

All removal and decommissioning shall occur within 12 months of the facility ceasing to produce power for sale. The owner/contractor of the solar farm should be responsible for this decommissioning. The owner/contractor of the solar farms should provide the Town/County planning departments, Register of Deeds and landowner a signed decommissioning plan within 30 days of change in the facility owner.

## FUTURE CONSIDERATIONS

Within Craven County, NC there are currently no outlines, provisions or ordinances specifically regulating solar farm development. However, one should consider some guidelines that prevent future complications.

- Currently, development evaluates water quantity and quality impacts based upon the structures and property site alone. Increasingly more are supporting efforts to

evaluate water impacts on a watershed scale. Thus, long-term plans should provide to protect against soil erosion, stream protection (if near a stream) and water quality.

- Across the state, evaluations are occurring to provide some insight into the potential impact of solar farms on wildlife. Loss of farmland, foods and shelter from farmlands will have an impact upon the environment. Whether or not the long-term impact is positive or negative is yet to be determined.
- What will the solar farm do to neighboring land values? Law suits alleging decline in value of homes or businesses due to construction of businesses or farms (swine operations, as example) are numerous. Currently, law protects the original land owner but no law currently addresses the specific glare, frequencies or unfavorable view of a functioning or non-functioning solar farms.

## SUMMARY

Each landowner will need to determine whether or not the transition of agricultural land to solar energy production is feasible. Higher revenue on a per acre basis does not necessarily mean greater profit. Higher expenses, future land use and/or opportunity costs may negate profits. Secondly, many of the solar farm projects are established with financial tax incentives, government mandates for alternative energy sources and initial depreciation values anticipated. While these add immediate revenue, they also come at a cost to society and government. Too, they can disappear as quickly as initiated. Lastly, serious consideration of "best and worst case" scenarios should be evaluated. Solar farms providing 15-20 years of alternative energy, revenue to the landowner, and tax revenue to the county is beneficial. In contrast, abandoned solar farm production, excessive cost of decommission or loss of future land use is a detriment to the landowner and area.

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Follow the Author on Twitter: [@mcarroll\\_craven](https://twitter.com/mcarroll_craven)

## RESOURCES & REFERENCES

Template Solar Energy Development Ordinance for North Carolina

<https://nccleantech.ncsu.edu/wp-content/uploads/NC-Template-Solar-Ordinance.pdf>

NC Clean Energy Technology Center – <https://nccleantech.ncsu.edu/about-ncsc/>

Solar Energy Tax Information – <https://www.ces.ncsu.edu/spotlight/solar-energy->

[property-tax-resources/](#)

Property Taxes and Solar PV Systems: Policies, Practices, and Issues –

<https://nccleantech.ncsu.edu/wp-content/uploads/Property-Taxes-and-Solar-PV-Systems-2013.pdf>

Cost of Solar Energy: Article with comments from John Morrison, chief operating officer of Strata Solar in Chapel Hill, <https://www.carolinajournal.com/news-article/n-c-state-prof-casts-shadows-on-solar-meeting/>

General Solar Energy Information and Data – <http://www.thesolarfoundation.org/>

NCSU Issues for Landowners – <http://content.ces.ncsu.edu/threshold-issues-for-landowner-solar-leasing>

One article with comments from John Morrison, chief operating officer of Strata Solar in Chapel Hill, outlines some thoughts on this topic at

<https://www.carolinajournal.com/news-article/n-c-state-prof-casts-shadows-on-solar-meeting/> .

WRITTEN BY



**Mike Carroll**

Area Agent, Agriculture

Craven County, North Carolina

PAGE LAST UPDATED: 3 MONTHS AGO

Great, thanks for your feedback!

#### **YOU MIGHT ALSO LIKE**

Land Ownership, Liability, and the Law in North Carolina — Extension Publication

Voluntary Agricultural Districts – Are you Enrolled? — Sampson County Center

Guilford County Voluntary Agricultural District — Guilford County Center

Farmland Preservation — Person County Center

Warren County Voluntary Agricultural District (VAD) — Warren County Center

Sparking an Interest in Farmland Preservation — Sampson County Center



***Cindy Ihrke testimony at March 15, 2018 ZBA for Case 895-AT-18***

Owning property is one of the most important rights we have in this Country therefore property values and the right of its enjoyment should be protected for each landowner.

I would like to present to this board several articles and studies pertaining to zoning effects on property values. Since wind and solar projects are both industrial scale entities, I would ask you to consider them as equally impactful on property values.

Zoning offers property owners stability and certainty in land values over time. In giving agriculturally zoned land special permits to build industrial scale electrical generating projects you are changing the ~~zoning~~ for that entire area. This effects property taxes, view shed, property enjoyment and general harmony within the area. This issue is becoming more and more concerning and now we are beginning to see a variety of court cases against counties stating the “taking” of property without compensation.

I am submitting for the record a few sample articles. The first is about citizens in Cass County, Indiana, where they are suing the County over unreasonable setbacks of wind turbines 1000 feet from homes . I believe this is similar to your current wind ordinance. In their suit they state, ]“ measuring setbacks from homes, and not the property

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line is unreasonable and interferes with the enjoyment of their property”.

The second talks about how Shelby county in North Carolina in 2015 changed their zoning ordinance to no longer allow permit solar facilities in residential and rural zones as a special use. The Council and residents were concerned that solar projects would harm the value of surrounding properties.

I am also submitting 3 additional sources on how industrial scale energy projects negatively effect property values, one of which is from Eon Energy Research Center that there is indeed significant negative impacts on surrounding property values. I have marked the points of interest in these sources and would hope that you would take the time to look into these further.

Lastly, I have samples of real property value guarantees for wind and solar for your consideration to add to your current zoning. If anything this will allow non-participating land owners protection for their life-time investment.

http://www.pharostribune.com/news/local\_news/article\_67bbfe85-8c3d-5d03-9211-73300fba490e.html

EDITOR'S PICK

# Landowners sue Cass County over wind rules

Mitchell Kirk Staff reporter Jan 24, 2018

## More Coverage

[Energy co. talks wind with officials, landowners](#)

[Residents still speaking out on turbines](#)

[PUBLIC FORUM: Wind turbines will hurt property values](#)

[Wind and worth: Realtors, auditor, study and court ruling weigh in on turbines and property values](#)

[PUBLIC FORUM: Kitchell wrong on decision to endorse wind farm](#)

[PUBLIC FORUM: Public input must be listened to regarding wind turbines](#)

[Wind and wildlife: Studies examine turbines' impact on bats and birds](#)

[PUBLIC FORUM: Commissioners not responsible for wind turbine town hall meeting](#)

[KITCHELL: Wind turbines a plus for Cass County](#)

[Officials mull public meeting on turbines](#)

[Wind farm opponent soaks at town hall](#)

[JUSTICE: Size of proposed wind turbines worth contemplating](#)

[Wind and wellbeing: Studies explore wind turbines and noise, sleep, health, annoyance and safety](#)

[PUBLIC FORUM: Information gathering a must regarding wind turbines](#)

[Wind opponents: petition exceeds 1,300](#)

[EDITORIAL: Winds of change blowing strong](#)

## Update

William Randall Cole dismissed himself from the lawsuit on Jan. 31, according to court records.



Three Cass County property owners are suing the Cass County Commissioners over the county's wind energy rules.

John L. Baker, Mike Gingrich and William Randall Cole filed the lawsuit against the commissioners on Jan. 17 in Cass Circuit Court. All three own agriculturally zoned land in Cass County, according to their complaint.

The complaint refers to Cass County's wind energy conversion systems ordinance, which requires wind turbines to be at least 1,000 feet from homes. That means no homes can be constructed within 1,000 feet of wind turbines, which the complaint states "authorizes the taking of private property without compensation being paid."

Cass County's wind energy ordinance violates the Fifth Amendment of the U.S. Constitution, according to the complaint, which states "private property shall not be taken for public use, without just compensation." It also violates the Indiana Constitution, the complaint continues.

"Under Indiana law, setback requirements must be reasonable since they interfere with the enjoyment of property rights," the complaint states.

The regulation's measuring of setbacks from residences instead of property lines is "unreasonable," according to the complaint, adding the ordinance "should be declared void."

The complaint seeks a court order declaring Cass County's wind energy ordinance to be void to the extent of its residential setback rule and that the setback should be measured instead from property lines.

The lawsuit comes as Renewable Energy Systems Americas out of Broomfield, Colorado, pursues a wind turbine project in northern Cass and Miami counties.

[Miami Co. plan commission votes to review county wind farm ordinance](#)

[Proposed wind turbines spur debate](#)

[PUBLIC FORUM: Concern over wind farms, access to commissioners](#)

[PUBLIC FORUM: Warning of risks of industrial wind turbines](#)

[JANE HARPER: Hard lessons can be learned from Tipton Co. wind turbine project](#)

[Residents speak out against wind turbines](#)

[Miami commissioner opposes wind ordinance](#)

[Fulton County leaders vote down wind rules](#)

[Miami Co. residents push back against planned wind farm](#)

[GUEST COLUMN: Wind farms will change rural culture, landscape](#)

[150 wind turbines considered for Cass County](#)

[Fulton Co. weighs proposed wind farm](#)

[Miami Co. preparing for proposed wind farm project](#)

[UK firm behind area wind considerations](#)

[Company leaders mull wind turbines for local region](#)

[TIMELINE: Local officials, residents have spent months discussing wind turbines](#)

"Upon information and belief, the project will be located on property adjacent to the plaintiffs' properties," the complaint states.

Cass County Attorney Jeff Stanton responded to the lawsuit in an email Wednesday.

"The county asserts that the setbacks are, in fact, reasonable," Stanton wrote.

He added Barnes & Thornburg's Indianapolis office will likely represent Cass County in the case.

Baker, Gingrich and Cole are represented by Syracuse-based Snyder Morgan Federoff & Kuchmay LLP, according to their complaint.

Reach Mitchell Kirk at [mitchell.kirk@pharostribune.com](mailto:mitchell.kirk@pharostribune.com) or 574-732-5130

### Correction

An earlier version of this story misspelled Mike Gingrich's name due to it being incorrect in court records.

10 comments

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1 person listening

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## **Shelby places new zoning restrictions on solar farms**

**By Casey White**

Posted Feb 3, 2015 at 12:01 AM

Updated Feb 3, 2015 at 5:39 PM

Solar farms 10 acres or larger will no longer be allowed to apply for special use permits in rural and residential districts in Shelby after Monday's city council meeting.

Council voted to amend the city's Unified Development Ordinance that previously allowed level three solar farms, which are 10 acres or larger, to be permitted in R20 (residential) and Rural Residential (RR) zones as a special use. According to Shelby Planning Director Walt Sharer, solar farms won't necessarily be eliminated from land currently zoned for rural and residential uses.

"If there were an applicant that found a property that they wanted to use for a level 3 solar farm, they would have to rezone that property to the four other different types of zoning districts that allow that which are GB (General Business), GB2 (General Business, no billboards), light industrial and general industrial," Sharer said.

### Special use cases for solar farms

\* The decision to no longer allow solar farms as a special use came about after council heard several cases for proposed solar farms. During deliberation on the special use cases for solar farms, council was required to determine whether the facilities would be built based on four findings of fact.

\* Council could only consider whether the proposed project would or would not harm the public's safety, would or would not hurt the value of adjacent property, would or would not be in harmony with the area in which it is located and if it was or was not in conformity with the comprehensive land use plan that is adopted by city council.

In prior cases, residents who lived near the proposed solar farms argued about the negative affects the solar farms would have on their homes.

Dennis Stitzel, a developer and resident of Pebble Creek who was against a previous solar farm proposal near his neighborhood, told council different residents would continue to have the same issues if the ordinance wasn't changed.

"If you don't do this you're going to continue to have concerned citizens come before you and you have to make decisions based on the location of these solar farms," Stitzel said.

Stitzel said he is not opposed to solar energy, but would rather see solar farms placed in areas that are not close to residential properties.

Schletter representative: 'Trust is shaken'

Stacie Davis of Schletter Inc., a company that develops and produces solar mounting systems in Shelby, spoke to council about her worries involving the ordinance change. As Schletter chose to locate in Shelby's Foothills Commerce Center, Davis felt the company and the city built a strong relationship.

"What I'm hoping to share with you is the trust that Schletter extends to the community and how that trust is presently being shaken by this proposed revision to the R20 ordinance," Davis said.

Since the proposed amendment would add restrictions on the location of solar farms within the city, Davis worried that it would prevent growth at Schletter.

"We hope to employ even more but our ability to do so may be greatly hindered if we're unable to practice our trade in our very own home town," Davis said.

City open to solar farms in allowed districts

✱ Before council voted in favor of the amendment, Councilman Dennis Bailey spoke to Davis about why he was in favor of the amendment. He said he believes that solar companies were being set up for failure in residential areas when they could instead focus their money and efforts in other zoning districts in the city.

✱ "It sets up people for failure to tell them it's an allowable use in R20 and when we use the findings of fact we continually have to say it will harm the value and it's not in harmony. It then hurts a potential customer of yours that could have located in a place where those findings of fact would not have to be answered," Bailey said.

Councilman Ben Kitrell said allowing the special use for solar farms has made the process "very unwieldy," which he hopes will be fixed by the new amendment. He said the city is wide open to solar farms in the allowed districts .

Residents speak out against solar farm proposal

Prior to city council's decision to no longer allow level three solar farms in residential areas, they heard a case for a proposed 24 acre solar farm in the R20 zone located at 1129 County Home Road.

Residents in nearby neighborhood filled the chamber to tell council why they believed the project would have a negative effect on their homes. Jo Ann Shilling appealed to the finding of facts the council had to consider, saying the solar farm would negatively impact the value of her home.

★ "I realize property values will decrease in spite of what we have and will be told. In reality, we know not one person or family will go on to buy property that is close to a 20 acre solar farm because of the visual pollution," Shilling said.

Other residents like Mitchell Flontek argued that the property would not be in harmony with the surrounding environment. Flontek said he purchased his home because of the beauty in the surrounding area, which would be ruined by a solar farm behind his house.

Several residents cited how close the existing solar farm on Earl Road was to the house and new proposed land for the new farm. They told council that it was not fair to build yet another solar farm so close to their homes.

#### Solar company representatives defend project

Jonathan Baker and Ben Combs of Heliosage, the company applying for the special use, addressed council to discuss why they believed the solar farm would not have a negative impact. Both Heliosage representatives said they would be willing to move the solar farm in order to make it less visible from the surrounding homes.

When Baker addressed the council, he talked about hiring an appraiser who researched the effects of solar farms on the property value of homes in similar markets.

"His process was to find solar farms that were in North Carolina and look at historical sales of homes before, during and after to see if there had been a material impact on price of homes, and there had been none," Baker said.

#### Council denies special use permit

After the public hearing, council discussed whether the solar farm met the four findings of fact needed to be approved. Councilman Dicky Amaya said he wasn't sure the appraiser's studies were valuable because they did not pertain to Shelby specifically.

Bailey said he appreciated that the appraiser showed property value in comparable cities were not necessarily injured by solar farms. His worry was that the appraiser did not visit the proposed site and nearby homes to consider how the view of the solar farm would affect value.

“When you’re considering the value of a property and you don’t consider view, I don’t think you can give a full appraisal. So I wouldn’t consider the information complete enough to give full weight,” Bailey said.

✶ After the discussion, council denied the resolution and did not permit the solar farm to be located at 1129 County Home Road, citing the solar farm would injure property value and would not be in harmony with the surrounding area.

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# Do Wind Projects Adversely Affect Proximate Residential Property Values?

The most basic law of economics is that things are valued based on the "Law of Supply and Demand." It is exceedingly obvious, all things being equal, that many people (due to view, sound, flicker, etc) would choose NOT to buy a home where there are industrial wind turbines close by. (Whether they are right or wrong in their reasons is irrelevant.)

These beliefs would **reduce demand**, which clearly would have **some** negative impact on the price of such a property. Any report that concludes that there are zero negative property value effects related to wind projects simply can not be considered seriously. The only real question is *how much of an impact?*

This list is intended to identify just some of the more objective studies and commentary about the adverse effects of wind energy projects on home values near wind projects.

**1 - Here are some more detailed analyses about wind project effects on property values, by independent professionals:**

A 2013 Study of over a million homes by the *London School of Economics*, concluded that properties near turbines will decline in value.

Searchlight wind farm could reduce property values by 25-60 percent, suggest studies.

A 2012 study by Lansink Appraisers: Diminution in Price.

A 2012 Study by E.ON Energy Research Center (German Utility company): The Impact of Wind Farms on Property Values.

2012 testimony in Lee County, Illinois, by appraiser Michael McCann.

A 2011 study Values in the Wind: A Hedonic Analysis of Wind Power Facilities by Clarkson economics professor, Dr. Martin Heintzelman.

A 2011 [Study](#) by appraiser Michael McCann on property value impacts in Cape Vincent, New York.

A 2011 [Report](#) by appraiser Michael McCann on property value impacts in Brewster, Massachusetts.

[Testimony](#) of appraiser Michael McCann on property value impacts in Adams County, Illinois.

A [study](#) done by Metropolitan Appraisal, regarding the Forward Wind Project (Wisconsin).

“A [Wind Turbine Impact Study](#)” by appraisers: Appraisal Group One, and a [later version](#).

A valuable [report](#): “Impact of Wind Turbines on Market Value of Texas Rural Land” by Gardner Appraisal Group.

“Living with the impact of windmills” [presentation](#) by Real Estate broker Chris Luxemburger, is an analysis of some 600 sales over a three year period.

[Testimony](#) of Maturen & Associates, Real Estate Appraisers, concerning the effects of wind projects on home values.

In addition to being an excellent noise and health effects report, this [document](#) has a twenty page appendix on property values.

Wind Power Siting Issues: [Overview](#)” (by energy expert Tom Hewson): cites several studies.

Appraisers report property value [losses](#) near turbines.

Government Agency [agrees](#) that turbines do devalue property!

Property assessments [reduced](#) near turbines.

Property assessment [lowered](#) for home near wind project.

[Grafton Vermont Property Values Forum](#) (1/17/14): Mike McCann

[Council tax cut for homes near wind farms](#).

## **2 - These are some other analyses and commentary about wind project effects on property values:**

[Wind farm 'blight' cutting value of homes by up to a third.](#)

["How do wind turbines affect property value?"](#)

[Property values are the new front line in the war over wind turbines  
32 Lawsuits against wind developer — including property value loss](#)

[Falmouth Real Estate - "The Turbine Effect"](#)

[Turbines complicate sales of abutting homes.](#)

"Wind Industry [Big Lie](#): Your Property Value Will Not Be Affected."

[Vermont Wind Developer buys neighboring property after lawsuit](#)

"A new slant on wind projects" offers a very helpful [idea](#) as to put some of the economic benefits of wind projects into perspective.

This [site](#) has a fine collection of property value articles.

"Property Values decrease by 40% if view of wind turbines" is an [analysis](#) of a real estate broker on turbine impacts on residential values.

An excellent [discussion](#) by the Wisconsin Realtor Association about the adverse effects of wind development.

An [analysis](#) by an Illinois Realtor about effects of wind projects.

A [survey](#) by a Wyoming Realtor concluded that properties nearby a wind project were virtually unmarketable.

"Property values blowing in the wind" is a [report](#) done by a local Realtor about wind project effects in her area of northern NY.

See [here](#) and [here](#) where two Realtors make formal testimony about the effects of wind turbines on property values.

[Landowners say Turbines have Hurt their Property Values.](#)

[Wind turbines have reduced property values, court says.](#)

[Wind Turbine Compensation Stirring Discontent \(Denmark\).](#)

“How Industrial Wind Projects Affect Property Values” is a worthwhile [commentary](#) by Chuck Ebbing.

A nice [presentation](#) “Turbine Effects on View Shed” by engineer Chuck Ebbing.

“[Impact of wind farms on the value of residential property and agricultural land](#)” an RICS (Royal Institution of Chartered Surveyors) Survey.

“Farm couple [fights](#) wind turbines”.

A newspaper [article](#): “Critics say wind turbines hurt land values.”

“Wind turbine homes threat” is a news [report](#).

“I predict a series of rural ghettos of abandoned, unmaintained homes” [says](#) an experienced appraiser.

The [Better Plan](#) website has a good example of a real estate problem, plus some good recommendations.

Here is a good news story about homeowners holding out for the wind developers to buy their property — and succeeding [very well](#).

This [article](#) says: “Horizon, opponents debate effects on property”.

“U.S. wrestling with property values and setbacks for its wind turbines” touches on several related [matters](#).

This UK site [site](#) lists several other sources regarding property values.

“Giant blades are slicing home prices” an [article](#) about experiences in England.

“An Ill Wind Blowing” is a [story](#) about an English family’s experiences with a wind project depreciating their home value.

Ontario Parliament member calls for a provincial home value [study](#) about another English family’s experiences with a wind project depreciating their home value.

“Windfarm Blows House Value Away” is a [story](#) about another English family’s experiences with a wind project depreciating their home value.

“Wind farm property sells at sheriff’s [sale](#).”

**3 - This is specifically directed at landowners who are considering signing a wind lease:**

[“Know The Facts BEFORE You Sign”](#) by the *Informed Farmers Coalition*.

**✶ 4 - Here are some sample Property Value Guarantee agreements:**

Note that despite the wind energy proponent’s continued claims that their projects have no adverse effects on property values, Iberdrola officially told this NNY community that they would not construct a project there if they were required to compensate land owners for property value losses. Most people would see that as being very hypocritical.

*In my view this brings up a KEY point. Wind developers often get approval based on specious claims (regarding jobs created, CO2 saved, etc.). They get away with this as there is no real penalty for exaggerations or stretching the truth. One of the best ways to counter this is to require that **all** these claims be legally guaranteed, in writing. Just like what happened in the above case, you will see an immediate back-tracking. This will reveal to citizens the accuracy and sincerity of the developer’s assertions.*

The Carteret County (NC) [Tall Structure Ordinance](#) includes an excellent property value guarantee. This was passed in February of 2014.

The Town of Newport (NC) also has a similar property value guarantee that was included in their wind law ([Article IX](#)), in late 2013.

This basic real [Property Value Guarantee](#) agreement was based on a plan drafted by Illinois lawyers.

DeKalb County (Illinois) Property Value Guarantee [Agreement](#). Some good [commentary](#) on the DeKalb Property Value Guarantee.

Property Value Guarantee [Agreement](#) from Adams County, Illinois.

An explanation of the fine Property Value [Agreement](#) created in Hammond, NY, and a later [version](#). [Wind developer for Hammond says [they will leave](#) if there is a Property Value Guarantee.]

Montville Maine [Wind Ordinance](#) includes a Property Value Guarantee.

[New Hampshire Town passes 3 mile Property Value Guarantee](#) (2014)

A Property Value Guarantee proposed for the entire state of Maine.

In March 2014, the New Hampshire Senate passed a bill (SB281) requiring:

“The use of best available mitigation measures to avoid or minimize aesthetic, ecological, health, and **property value impacts** as a condition for a certificate, and the establishment of a methodology to evaluate and **mitigate negative impacts on property values.**”

“Wind turbines constitute a ‘taking’ of private property value.”

Sumner Maine PVG — note they propose a condition that the developer must enter into separate agreements with proximate property owners.

This is the “Fenner, NY: Canastota Wind Power LLC: Property Value Assurance Plan”.

This is Denmark’s federal wind energy law, which (among other things) says:

“An erector of a wind turbine has a duty to pay compensation for loss of value.”

Proposed Property Value Guarantee for Riga, Michigan (2011).

Proposed Property Value Guarantee for Town of Knox, NY (2013).

“Developers seek elimination of property value guarantee” (2013) and “BZA limits property value guarantee testimony” (same project).

A town meeting video where a wind developer (and his ally) is quizzed about providing a Property Value Guarantee. Note they refuse to offer one.

## **5 - These are some critiques of the Hoen/Wiser report:**

Debunking of Hoen’s latest turbine property value missive (8/13).

“Wind Farms, Residential Property Values and Rubber Rulers” - is commentary by appraiser Albert Wilson.

“Critique of The Impact of Wind Power Projects on Residential Property Values in the US: A Multi-Site Hedonic Analysis” by Wayne Gulden.

“DOE study says wind farms don’t affect property values, but...” is a report by The Acoustical Ecology Institute.

A detailed [critique 1](#) by appraiser Mike McCann, and a second one about a later Hoen report [critique 2](#).

“Turbine Effects on View Shed” are [observations](#) by engineer Chuck Ebbing (starts on page 20).

“False conclusions based on flawed real estate studies” are some fine commentaries [here](#), [here](#), and [here](#) by WindAction.

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A good [critique](#) of two earlier studies (similar to Hoen/Wiser) by Michael J. Miller, FCAS, MAAA.

[The Proposed Prairie Breeze Wind Project Will Harm the Property Values of Non-participating Owners.](#)

## **\*6 - Some Other Options:**

In my view we should be piggybacking on ideas currently being employed by environmental groups to stop hydrofracking. Here is an example: [Sue Your Neighbor](#). Make sure to look at the part about an “anticipatory nuisance.” *Constructive condemnation* is another possibility, but appears to be a subset of the “anticipatory nuisance” legal definition.

Here is a relevant [case](#) where a Canadian homeowner sued to have his property assessment lowered due to nearby noise from a power station. He won the lawsuit and received a significant reduction.

*If you know of other good material, or there are errors of omission or commission here, please email these to John at: “aaprjohn at northnet dot org”.*

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# Do Wind Turbines Lower Property Values?



**Jude Clemente**, CONTRIBUTOR

*I cover oil, gas, power, LNG markets, linking to human development* [FULL BIO](#) ✓

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A key point of contention against wind (and solar) farms is that they require much larger amounts of land to generate the same amount of electricity, an important downgrade of their "greenness" that goes conveniently ignored. Wind power is naturally intermittent, and plants typically operate at about 25% of full capacity, compared to coal and natural gas plants operating at 90%.

Thus, it can take 4-5 wind plants to produce the same amount of electricity as a single fossil fuel plant.

The U.S. Department of Energy has concluded that generating 20% of electricity (which is likely the highest we could go, see [here](#)) with land-based wind installations would demand at least 20,000 square miles, or the size of Maryland and Vermont combined. By comparison, all U.S. nuclear power plants, which produce around 20% of power, occupy only 110 square miles.

**One headline is indicative: "Wind farm 'needs 700 times more land' than fracking site to produce same energy."**

The main reason industrial wind farms take up so much land is that each turbine can be spaced a half mile or more apart. And bigger, taller, and more spaced apart turbines are better because they can generate more electricity. Standing 650 tall (200 meters), these giant wind turbines dwarf nearby buildings. Along with the complexity of siting, this explains why getting wind farms built is much harder in real life than in the Sierra Club's mind.

The pervasive "Not in My Backyard" (NIMBY) syndrome indicates that even the most ardent renewable energy supporters in public often don't want wind farms near their own homes in private (see the wind hypocrisy of this famous family [here](#)). Additionally, the wind build-out will require massive amounts of new high-



**voltage transmission lines because our best wind locations, many of which have already been taken ("the sweet spots get chosen first"), are far from cities.**

**Perhaps most importantly, wind farms flicker, make noise, cause health problems, and can be "visual intrusions," so their impact on property values, especially as wind power grows, is increasingly concerning.**

**The Obama administration is heavily pushing wind power, and the Clean Power Plan could require a more than tripling of wind capacity to 220,000 megawatts by 2030 and a near quadrupling by 2040. The stakes are very high: U.S. housing is already struggling, but remains a whopping \$27.5 trillion market.**

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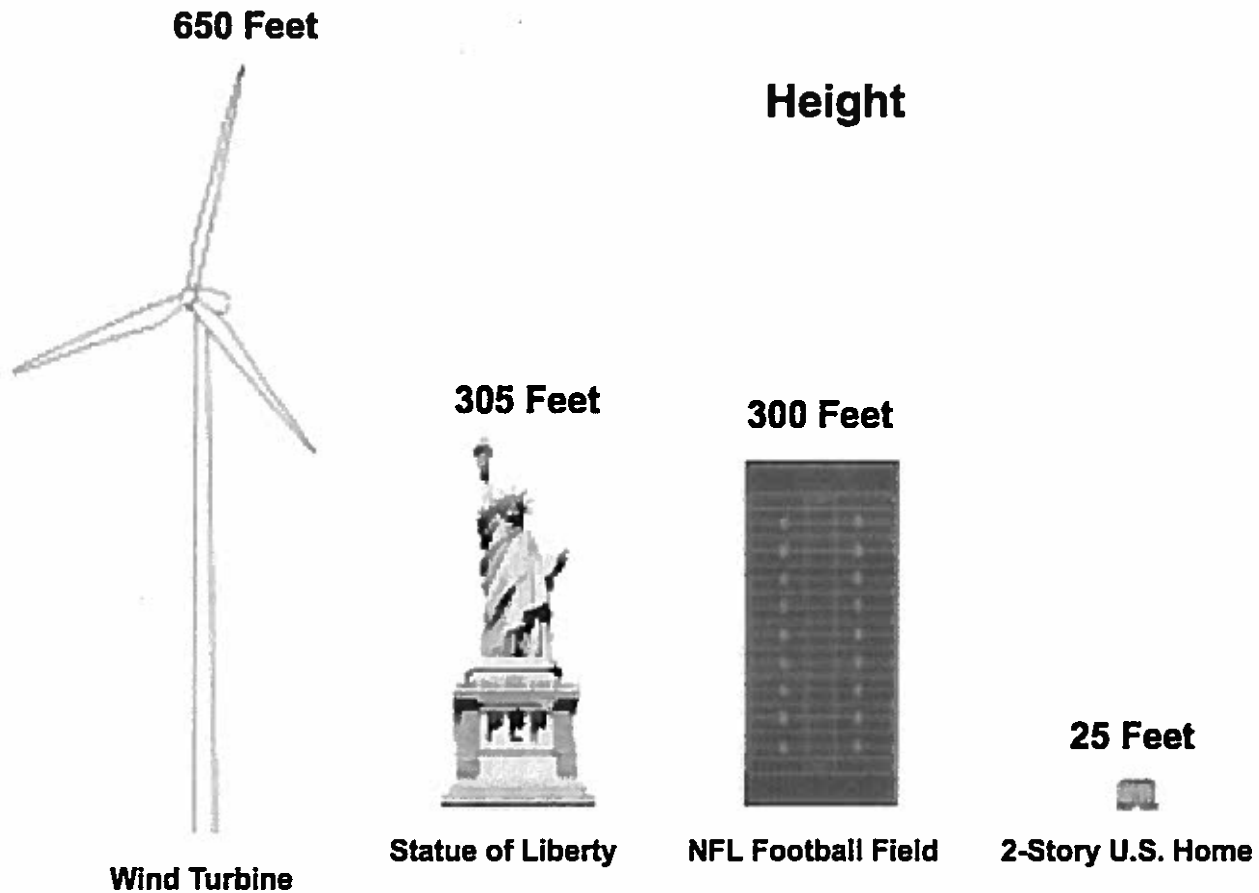
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Continued from page 1

Reduced property values from wind farms is in stark contrast to the "shale gas revolution," which has created **"thousands of new millionaires"** of property owners.

## Wind Turbines Dwarf Surrounding Structures



Sources: <http://sweetclipart.com/wind-turbine-line-art-1190>;  
<http://chenglor55.deviantart.com/art/Football-Field-with-NFL-Hash-Marks-423698654>; <http://www.dreamstime.com/royalty-free-stock-images-new-two-story-house-garden-image17887469>

It surely seems logical enough, anything that would cause a potential buyer to value a property less lowers its value. A piece of property, after all, is just what someone is willing to pay for it. Markets are about supply and demand, and all things being equal, why would somebody choose to buy a home with an industrial wind farm nearby? And simply put, it seems impossible to believe that wind turbines would actually add to a property's value.

But, there's a heavily funded public relations machine to make Americans think that wind power doesn't impact property values, and it's every bit as influential as the "Big Oil" the anti-fossil fuel movement purports to be so against.

Renewable energy and the "environment" are big businesses (**see the Volkswagen emissions scandal for proof**) and they include not just energy producing companies but also various agencies, interest groups, and even university researchers. Their grant money and careers are at stake.

Many members of the Real Estate and Appraisal businesses, however, have been clear that wind power **DOES** impact property values, and it would seem to me that these groups have no vested interest in supporting wind power or not supporting it. So, these findings are critical:

- ✘ In "**High-Voltage Transmission Lines and Rural, Western Real Estate Values**" published in *The Appraisal Journal* 2012, Dr. James A. Chalmers, qualified as an expert witness in over 20 states, found that residential properties near transmission lines sold for 20-50% less than comparable residential properties.
- ✘ Michael McCann, of McCann Appraisal, LLC based in Chicago, **concludes** that: "Residential property values are adversely and measurably impacted by close proximity of industrial-scale wind energy turbine projects to the residential properties," up to 2 miles and a range of 25% to approximately 40% of value loss.
- ✘ John Leonard Goodwin, who has been a real estate broker for more than 10 years in Ontario, Canada, **reports** that wind turbines absolutely do impact property values: "Turbines complicate your property enjoyment, period. That

alone spells depreciated value...they will also cause a significant loss of real estate value.”

- ✂ • **According to research in 2014 by the London School of Economics,** wind farms can cut as much as 12% off the value of homes within a 2 kilometer radius, reducing property values as far as 14 kilometers away.
- ✂ • In 2013, an **Ontario Superior Court of Justice determined** that landowners living near large wind farms do suffer from lower property values, with the court accepting a 22-55% reduction.
  - see this long list documenting how wind power DOES reduce property values **here.**

The U.S. now has about 46,000 wind turbines, with tens of thousands more expected. Ultimately, "being green" is about minimizing our impact on the natural environment (**why cities are green**), so a very strong case against large-scale wind development can be made because it requires so much land.

The negative environmental impacts of the industrialization of the American landscape is a conversation that **WE MUST BE HAVING**: wind's impact on local property values can no longer be ignored because wind power is set to play a larger role in our electricity portfolio.

But, those in the pro-wind, anti-fossil fuel business continue to ignore a lot of things (it certainly makes life a lot simpler!). **The fossil fuel inputs for wind power are particularly large**, so the anti-fossil fuel movement is in reality anti-renewable energy.

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Continued from page 2

Along with the requirement for fossil fuel backup generally from natural gas, wind is unavailable much more than it's available, wind power has less "green" credentials that many care to admit. And don't forget it's oil that fuels the trucks that move wind turbines tens or hundreds of miles to their remote locations.

And the pro-wind, anti-fossil fuel business appears completely oblivious to the fact that wind turbines are made from steel, which is mostly made from coal. There are about 170 tons of coal in an onshore wind turbine, and about 280 tons of coal in an offshore one.

Thus, a simple question illustrates the absurdity of the pro-wind, anti-fossil fuel position: does the coal miner that mines the coal...that makes the steel... that makes the wind turbine... have a "green job?"

I say they do...or at least much more so than the administrative assistants and overpaid lawyers in the environmental business that are overrepresented in the "green job" tallies.

And of course, the opportunity costs of renewables go ignored. An obsession with wind and solar power at all costs, for instance, has Germany paying \$26.2 billion for electricity that has a market value of just \$5 billion.

Such grand illusions must be stopped...immediately.

With 1 in every 4 American adults already believing the Sun orbits the Earth, we've got enough ignorance as it is.

# The Impact of Wind Farms on Property Values: A Geographically Weighted Hedonic Pricing Model

*FCN Working Paper No. 3/2012 (revised March 2013)*

35 Pages

Posted: 21 Jul 2012

Last revised: 15 Oct 2013

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Reinhard Madlener

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Date Written: May 1, 2012

## Abstract

Wind power is the most important renewable energy source in many countries today, characterized by a rapid and extensive diffusion since the 1990s. However, it has also triggered much debate with regard to the impact on landscape and vista. Therefore, siting processes of wind farm projects are often accompanied by massive public protest, because of visual and aural impacts on the surrounding area. These mostly negative consequences might be reflected in property values and house prices. The aim of this paper is to investigate the impacts of wind farms on the surrounding area through property values, by means of a hedonic pricing model, using both a spatial fixed (viewshed) effects (accounting for spatially clustered unobserved influences) and a Geographically Weighted Regression model (accounting for spatial heterogeneity). The analysis is the first of its kind undertaken for a local region in Continental Europe (North Rhine-Westphalia, Germany). Viewsheds are calculated for each property using a digital surface model. Focusing on proximity and visibility effects caused by wind farm sites, we find that proximity, measured by the inverse distance to the nearest wind turbine, indeed causes significant negative impacts on the surrounding property values. Thereby, local statistics reveal varying spatial patterns of the coefficient estimates across and within the city areas and districts. In contrast, no evidence is found for a statistically significant impact of the visibility of the wind farm turbines.

**Keywords:** Wind power, Hedonic pricing, Spatial fixed effects, Geographically Weighted Regression

**JEL Classification:** C31, Q2, Q42, R31

Suggested Citation



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Consumer Needs and Behavior

FCN Working Paper No. 3/2012

# **The Impact of Wind Farms on Property Values: A Geographically Weighted Hedonic Pricing Model**

Yasin Sunak and Reinhard Madlener

May 2012  
Revised March 2013

**Institute for Future Energy Consumer  
Needs and Behavior (FCN)**

School of Business and Economics / E.ON ERC

**RWTH**AACHEN  
UNIVERSITY



- 8-3.5 Security:** The Applicant shall submit design plans to verify that the SEF is:
- A. Located, fenced, or otherwise secured so as to prevent unauthorized access.
  - B. Installed in such a manner that they are accessible only to persons authorized to operate or service them, and inaccessible to non-authorized individuals.

**8-4 SEF Escrow Account:** The Applicant shall pay to the County a non-refundable Application Fee (see ¶ 8-9). The County Commissioners and/or County Planning Board reserve the right to obtain engineering, economic impact, environmental impact, or other professional services to aid it in the review of any submitted SEF application. These costs (and other expenses incurred by the County) are reimbursable only from the Escrow Account, not the Application Fee.

8-4.1 The Applicant shall reimburse the County for all oversight expenses incurred relating to the SEF, from application through decommissioning.

8-4.2 These SEF-related oversight expenses include (but are not limited to) amounts required for Building Permits, Licensing, Re-Licensing, and Decommissioning — e.g. administration, engineering, expert health and wildlife evaluations, handling complaints, legal, etc. "Legal" includes reasonable attorney fees for the County if the County has to sue the Applicant.

8-4.3 Any Escrow Account interest shall stay with the account and be considered new principle.

8-4.4 This Escrow Account will be setup by the Applicant at the time of the SEF permit Application. This Escrow Account will be at a financial institution approved by the County, solely in the name of the County, to be managed by the County Treasurer (or designee). The Applicant will make an initial deposit of \$10,000. A SEF Permit Application will not be processed until the Applicant has provided proof of deposit. A SEF Permit Application determination will not be made until all costs incurred by the County to date, have been reimbursed by the Applicant.

8-4.5 If the SEF Application is denied, all Escrow Account funds will be returned to the Applicant, less related expenses incurred by the County. The money will be returned, along with a statement as to these costs, within 30 days of the Application being formally denied, or receipt of a Letter of Withdrawal. Permit Fees are non-refundable.

8-4.6 This Escrow Account will be funded during the life of the SEF by the Applicant/Owner/Operator. The Applicant/Owner/Operator will replenish any Escrow funds used by the County within 14 days of being sent written notification (and explanation) of said withdrawals. Failure to maintain the Escrow Account at \$10,000 (within 30 days of being given notice) shall be cause for revocation (or denial of renewal) of the SEF Permit.

8-4.7 Once the Owner believes that they have satisfactorily complied with the decommissioning conditions specified herein, they will send the County written notification. The County then has sixty (60) days to verify to their satisfaction that all decommissioning conditions have been complied with. If there is material non-compliance, the County will so notify the Owner and the process starts over. Otherwise the County will return all Escrow Account funds to the Owner, less related expenses incurred by the County, along with an explanatory statement.

**8-5 SEF Real Property Value Protection Plan:**

The SEF Applicant shall assure the County that there will be no loss in real property value for any property within 1000 feet of the SEF. To legally support this claim, the Applicant shall consent in writing to a Real Property Value Protection Agreement ("Agreement": see ¶ 9-4) as a condition of approval for the SEF. This Agreement shall provide assurance to non-participating real property owners (i.e. those with no solar facilities on their property) near the SEF, that they have some protection from SEF-related real property values losses.



**8-6 SEF Surety for Removal, when Decommissioned:**

The Applicant shall place with the County an acceptable letter-of-credit, bond, or other form of security that is sufficient to cover the cost of removal at the end of each SEF array's useful life, as detailed in the decommissioning plan. Such surety shall be at least \$10,000 for each acre of a solar array. The Planning Board may approve a reduced surety amount that is not less than 150% of a cost estimate that is certified by an Engineer, salvage company, or other expert acceptable to the Planning Board. This calculation will not take into account any estimated salvage values.

The County shall use this surety to assure the faithful performance of the decommissioning terms and conditions of the Applicant's plan and this law. The full amount of the bond or security shall remain in full force and effect until all necessary site restoration is completed to return the site to a condition comparable to what it was prior to the SEF, as determined by the Planning Board (see ¶ 9-6). The Applicant will be responsible for assuring that any subsequent Assigns of the SEF, will provide acceptable surety to the County, prior to any transfer of ownership.

**8-7 SEF Liability Insurance:**

8-7.1 The holder of a permit for a SEF shall agree to secure and maintain for the duration of the permit public liability insurance, as follows:

A. *Commercial general liability covering personal injuries, death and property damage:* \$5,000,000 per occurrence (\$10,000,000 aggregate), which shall specifically include the County and its officers, councils, employees, committee members, attorneys, agents and consultants as additional named insureds.

B. *Umbrella coverage:* \$10,000,000.

8-7.2 The insurance policies shall be issued by an agent or representative of an insurance company licensed to do business in the State and with at least a Best's rating of "A".

8-7.3 The insurance policies shall contain an endorsement obligating the insurance company to furnish the County with at least 30 days prior written notice in advance of a cancellation.

8-7.4 Renewal or replacement policies shall be delivered to the County at least 15 days before the expiration of the insurance that such policies are to renew or replace.

8-7.5 No more than 15 days after the grant of the permit and before construction is initiated, the permit holder shall deliver to the County a copy of each of the policies or certificates representing the insurance in the required amounts.

8-7.6 A certificate of insurance that states that it is for informational purposes only and does not confer sufficient rights upon the County, shall not be deemed to comply with this Law.

**8-8 SEF Indemnification:**

Any application for a SEF within the County shall contain an indemnification provision. The provision shall require the Applicant to at all times defend, indemnify, protect, save, hold harmless, and exempt the County, and its officers, councils, employees, committee members, attorneys, agents, and consultants from any and all penalties, damages, costs, or charges arising out of any and all claims, suits, demands, causes of action, or award of damages, whether compensatory or punitive, or expenses arising therefrom, either at law or in equity, which might arise out of, or are caused by, the placement, construction, erection, modification, location, equipment's performance, use, operation, maintenance, repair, installation, replacement, removal, or restoration of said SEF, excepting, however, any portion of such claims, suits, demands, causes of action or award of damages as may be attributable to the negligent or intentional acts or omissions of the County, or its employees or agents. With respect to the penalties, damages, or charges referenced herein, reasonable attorneys' fees, consultants' fees, and expert witness fees are included in those costs that are recoverable by the County.

### Property Value Guarantee Agreement

This Property Value Guarantee Agreement (Agreement") made and entered into on this \_\_\_ day of \_\_\_\_\_, by and between (*Insert Developer Corp. Name*) \_\_\_\_\_, having its principal offices at \_\_\_\_\_ ("Guarantor") and \_\_\_\_\_, residing at (Insert address) \_\_\_\_\_, IL (zip) \_\_\_\_\_, ("Property Owners").

**RECITALS**

WHEREAS, Property Owners own eligible Property as described herein ("Property"), that  
Property having the legal description as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Adams County, Illinois.

WHEREAS, Guarantor has been granted approvals by Adams County Ordinance No. \_\_\_\_\_ for the construction and operation of a wind energy center consisting of up to # \_\_\_\_\_ turbines on properties located in unincorporated \_\_\_\_\_ Townships in Adams County, Illinois ["Wind Energy Center"];

WHEREAS, Guarantor desires to alleviate concerns and guarantee preservation of Property values of all Property located in proximity to the Wind Energy Center, specifically within two (2) miles of any wind turbine (measured from furthest reach of turbine blades to the Property); and WHEREAS, Guarantor is desires to provide for either continued occupancy of existing residences by Property Owners or otherwise not financially impacting neighboring Property Owners as a result of the Wind Energy project; and WHEREAS Property Owners are desirous of preserving equity in the Property, by ensuring that if the Property described herein is either diminished in value or sold at a price less than the ASKING PRICE as a result of proximity to the Wind Energy Center, as determined by the procedures contained herein, the Guarantor will guarantee payment to the Property Owners of such difference; or if Property owner is unable to sell the Property following a reasonable marketing period, as defined herein, the Guarantor will guarantee payment to the Property Owners of the full Appraised value and purchase the Property, as defined herein.

**IT IS HEREBY AGREED AS FOLLOWS:**

1. **EFFECTIVE DATE OF AGREEMENT.** This Agreement shall become effective and binding on Guarantor when signed by both parties. Notwithstanding the foregoing, if an administrative agency or court of competent jurisdiction rules or holds that the approvals or permits issued by Adams County for the Wind Energy Center has been in excess of or in violation of said governmental body's authority or otherwise unlawful, and Guarantor has not constructed any of the wind turbines, then Guarantor's obligations under this Agreement shall be null and void. However, the construction of any or all of

the proposed turbines shall render this agreement in full force and effect, and constitute the requirement of the Guarantor to fulfill all obligations to the Property owner, as defined herein.

**2. ELIGIBILITY: EXERCISE OF GUARANTEE.** (a) Property that is within two (2) miles of the tip of a turbine blade that is part of the Wind Energy Center is covered by this guarantee, to the extent the property is developed or approved for development on \_\_\_\_\_, the date Adams County voted to approve Ordinance No, \_\_\_\_\_ approving the Wind Energy Center ("Ordinance Date"). Owners of such Property who were owners of record as of the Ordinance Date ("Property Owners"), or their legitimate heirs or assigns as described in Paragraph 14, are eligible to exercise this guarantee. In the event that the Property Owners wish to sell their eligible Property, and exercise the guarantee set out in this Agreement, they shall notify Guarantor of same in writing by certified mail and thereafter they shall make a good faith effort to sell said Property by entering into a listing contract with a licensed real estate broker pursuant to the terms herein. (b) Property Owners shall have a period of ten (10) years to execute this agreement from the Ordinance date cited in paragraph 2.

**3. QUALIFIED PROFESSIONAL APPRAISER.** For the purposes of this Agreement, a "qualified professional appraiser" shall mean a person who is licensed by the State of Illinois as a Certified General Appraiser or Licensed Residential Appraiser who (a) holds a valid Illinois license, (b) has not been subject to any suspension or revocation of license for any prior disciplinary action regarding their Illinois License by Illinois licensing authorities or from any professional association to which Appraiser is a member or affiliated with, and (c) has not been previously retained by either the wind energy industry or any citizens or citizens groups to opine in writing or in testimony as to wind energy projects effects on property values, hereafter deemed a "Qualified Professional Appraiser" (Appraiser), (d) is not related to the Property Owners, is not an employee or prior contractor of Guarantor or its affiliates and does not otherwise have a business relationship with Guarantor or Property Owners, and (e) who is a member of at least one national appraisal association that subscribes to the requirements of USPAP, (f) has at least 5 years experience in appraising and has worked within Adams County and/or any surrounding Counties during that period. (g) All appraisal reports shall conform to the Uniform Standards of Professional Appraisal Practice (USPAP), as required by current Illinois law. (h) The appraisal fee shall be paid in advance by the Guarantor to the County, for retention of the Appraiser by the County Attorney, who shall include a copy of this agreement to the Appraiser with the required fee, and a retention letter advising the Appraiser that the County, as a neutral party, is retaining the Appraiser and they are instructed to be independent of any influence from either party to this agreement. Guarantor agrees to reimburse the County for any services required of the Appraiser subsequent to delivery of the Appraisal Report, including but not limited to time expended responding to subpoena for testimony at deposition or trial.

**4. AGREED TO ASKING PRICE.** The ASKING PRICE is the value of the Property at the time the Property Owner decides to sell, with Property Owner discretion to either increase or decrease the asking price by no more than 5% difference with the Appraised Value. The ASKING PRICE of the Property may, however, be mutually agreed to by the Property Owners and the Guarantor. The ASKING PRICE may be mutually amended by agreement of the Property Owners and Guarantor at any time, subject to agreement.

**5. DETERMINATION OF ASKING PRICE BY APPRAISAL** If the parties are unable to agree on the ASKING PRICE of the Property prior to the Property Owner listing the Property for sale, then the Guarantor shall hire, at its expense, a second Appraiser and shall notify Property Owner of such Appraiser in writing with a resume or qualification summary for the Appraiser for review by the Property Owner. If the Property Owner objects to the Guarantor's choice of appraisers, it shall state those objections to Guarantor in writing within thirty (30) days of the notification of the choice of Appraiser. In the event Property Owner reasonably objects, the Guarantor shall choose another Appraiser, and proceed as described below. When a qualified professional appraiser is hired pursuant to this Paragraph 5, he or she shall be instructed to determine the market value which will become the ASKING PRICE, subject to Property Owner 5% discretion, of the Property as follows:

- a. Assume that no wind energy center or utility scale wind turbine(s) are located within two (2) miles of the Property;
- b. Utilize comparable sale data of property, developed as the Property was developed as of the Ordinance Date and located a minimum of two (2) miles distance away from the Wind Energy Center, or further so that in the opinion of the appraiser the selling price of that comparable property was not influenced by the presence of the Wind Energy Center or any other wind energy project;
- c. Utilize a minimum of three (3) comparable sale property, located approximately the same distance from major population centers (such as Quincy) so that in the opinion of the appraiser the selling price of the comparable property was not influenced by its closer or more distant proximity to new or existing population or employment centers.
- d. Establish the market value which is based upon the Property as developed on the Appraisal inspection date, with consideration of any normal or typical maintenance, repairs or additions made during the effective term of this agreement;
- e. Prepare a written narrative appraisal or residential form report supplemented as needed with written descriptions, analysis or comments, and which conforms to the requirements of USPAP;
- f. Prepare the appraisal in full compliance with any and all state standards and state regulations which pertain to the preparation of an appraisal of the Property except those standards and regulations which conflict with these instructions; and
- g. The appraiser shall note the condition of the premises, both interior and exterior, at the time of the appraisal.

If Property Owner and Guarantor accept the appraised value, then such value shall constitute the ASKING PRICE, and the Property Owners shall offer the above-described Property for sale at no less or more than a 5% difference with that price. If either the Property Owner or the Guarantor does not accept the appraised value, the non-accepting party may retain a second qualified professional Appraiser, of its choice, who shall not be made aware of the first appraised value and who shall determine the market value of the above-described Property on the basis of Paragraph 5(a) through (g) above. If both parties do not accept the original appraisal, they shall agree to the second qualified professional Appraiser and Guarantor shall pay the costs. In the event a second Appraisal is obtained pursuant to this paragraph and is within ten percent (10%) of the first Appraisal, the ASKING PRICE shall be the arithmetic average of the original appraised value and the second appraised value, unless the Guarantor or the Property Owner is unsatisfied with such Appraisal with specific reason(s) given in writing for disagreement with the Appraised value. In such event, the first two appraisers

shall be instructed to agree on a third qualified professional Appraiser, at the sole expense of the Guarantor or the Property Owner, whichever is unsatisfied, unless both parties are unsatisfied in which case the expense shall be equally shared, and who shall not be made aware of either the first or second appraised values, and who shall determine the market value of the Property on the basis of Paragraph 4 (a) through (g) above. The ASKING PRICE will then be the arithmetic average of the three appraised values if the lowest value is no more than fifteen percent (15%) lower than the highest appraised value. If the fifteen percent (15%) range is exceeded the third Appraisal shall conclusively determine the ASKING PRICE for the purpose of this Agreement.

**6. LISTING WITH BROKER.** Property Owners shall utilize the services of a real estate broker/agent who shall be licensed in Illinois, is not financially affiliated with or related to the Appraiser, shall not be immediately related to the Property Owners or Guarantor as determined by being related no closer than second cousins and/or any history of sharing the same residence, and shall be a member of the Board of Realtors Multiple Listing Service or Exchange (Broker), unless these requirements are waived by the Guarantor upon the request of a Property Owner. Property Owners shall give Guarantor notice of the Broker with whom they wish to contract and shall obtain Guarantor's approval of said Broker within five (5) business days of written notice to Guarantor that Broker meets the no-relation requirement. Guarantor will not unreasonably withhold such approval and will confirm no relationship with Broker to the Property Owner. If the Guarantor objects to the Property Owners' choice of Broker, it shall state those objections, in writing to Property Owners. In the event Guarantor reasonably objects, the Property Owners shall choose another Broker, and proceed as described above. As sellers of the Property, Property Owners shall be responsible for the Brokerage commission or fee UNLESS the Property is purchased by Guarantor pursuant to Guarantor purchase of the Property after 180 days as provided for herein. Nothing herein shall prevent the Property Owner from selling the Property at a value higher than the ASKING PRICE as determined herein.

**7. TERM OF LISTING.** Property Owners shall list the Property, at the ASKING PRICE as determined in Paragraphs 4, 5 and 6, or at a higher value if agreed by Guarantor. During the listing term, Property Owners shall accept any offer to purchase for the ASKING PRICE that is a bona-fide offer to purchase by a qualified buyer with a valid loan commitment or buyer otherwise acceptable to the Guarantor, provided that normal mortgage contingencies have been met or satisfied by buyer or waived by Property Owner and any home inspection contingency has been satisfied or waived by Property Owner. Said listing contract shall provide: (a) that the Broker shall list the Property in the multiple listing exchange; (b) that the Property will be so listed until the occurrence of either the (i) closed sale of the Property or (ii) expiration of a period of 180 days; (c) that the broker shall not be entitled to any commission after the expiration of the listing contract. The Property Owners shall cooperate with the Broker in obtaining a purchaser pursuant to the terms set forth in the listing agreement and shall make, in good faith, all reasonable efforts necessary to conclude a sale pursuant to the said terms. However, this shall not be construed as a requirement that Property Owner conceals their own experience with living in the Property, inclusive of any audible or inaudible noise effect emanating from the wind turbines.

**8. OFFERS TO PURCHASE.** Property Owners shall provide the Guarantor with written notification of every written contract or Offer to Purchase that they receive for the Property and agree, for a period of 180 days, not to accept any offer below the ASKING

PRICE without the express and written approval of the Guarantor, provided that Guarantor responds within twenty four 24 hours of Notice from Property Owner. In no event shall the Property Owners entertain anything other than good faith, bona fide offers of purchase.

9. **GUARANTOR'S CONSENT TO PURCHASE.** Guarantor shall have the right to make a non-contingent counter offer(s) on any offers of purchase which are more than 5% below the ASKING PRICE, said counter offer to be tendered to the purchaser within twenty four (24) hours of notification by the Property Owner of the offer of purchase. In the event the buyer accepts or meets any such counteroffer made or requested by the Guarantor, or in the event the Guarantor otherwise consents to a sale of the Property more than 5% below the ASKING PRICE, the Guarantor shall pay the Property Owners, at closing, the difference between the ASKING PRICE and the sale price so established.

10. **SALE WITHOUT GUARANTOR CONSENT.** If the Property Owners have not received an offer of purchase at the ASKING PRICE within 180 days of listing the Property for sale, or the Guarantor has not consented to the sale of the Property below the ASKING PRICE, the Property Owners may sell the Property at the highest offer of purchase still pending or at the next good faith bona fide offer to purchase. It shall notify the Guarantor, in writing, of its intention to accept such offer.

11. **PROPERTY OWNER'S CLAIM.**

(a) If the Property has sold for less than the ASKING PRICE, as determined herein, and Property Owner believes that the reason for such lowered value is because of the Wind Energy Center's proximity to the Property, Property Owner shall make a claim to the Guarantor, requesting payment for the difference between the ASKING PRICE and the sales price. Within thirty (30) days of such request, Guarantor shall pay the Property Owner the difference unless Guarantor, within that time, has demonstrated that the sale is not a bona-fide transaction.

(b) If the Property Owner has not received an offer of purchase at the ASKING PRICE after 180 days of listing the Property for sale, Guarantor shall, within thirty (30) days of notification in writing purchase the Property for the ASKING PRICE, unless Guarantor, within that time, has demonstrated conclusively that Property Owner did not reasonably cooperate with the terms of a bona-fide sale contract.

© If the Property has not sold within 180 days of the Listing agreement, and Guarantor provides Multiple Listing Service statistics that demonstrate a median Marketing Time for all unincorporated Adams County residential properties is in excess of 180 days, as of the original Listing date, then Guarantor has the option of notifying the Property Owner that they must extend the Listing or enter into a separate listing agreement with a new Broker for a period of 180 days. If the extended Listing option pursuant to paragraph 11 © does not result in a bona-fide sale agreement within the second (2<sup>nd</sup>) 180 day Listing term, then Guarantor must abide by the terms of paragraph 11 (b) and buy the Property for an increased price as determined by the Appraised Value plus the most recent Consumer Price Index (CPI) multiplied by 50%.

12. **AGRICULTURAL LAND.** This agreement requires payment by the Guarantor to any non-participating agricultural land owners with Property located within 2 miles of the Wind Turbines, on the basis of increased costs, if any, resulting from AG property owners loss of aerial spraying services, provided that (a) Ag Property owner has utilized aerial spraying services for at least 1 of the last 3 years during crop seasons; (b) aerial

spraying services either decline to continue service to the Ag Property in question as a direct result of pilot safety concerns from wind turbine structures or increase the cost of services to the Ag Property in question; (c) lower lease rates are agreed between Ag Property owner and tenant farmer as a result of tenant farmers increased costs described in paragraph 12 (a) and/or (b). Cost increases and Ag Property Owner compensation shall be based on either the actual cost increase for continued use of aerial spaying services active in Adams County or the actual contracted 3<sup>rd</sup> party cost of alternative application of AG chemicals minus the last documented cost for aerial application of AG chemicals. Guarantor shall be provided documented cost differences as soon as practical after costs are incurred by the Ag Property Owner, and shall submit payment to Ag Property Owner within 60 days of notice by Ag property Owner. However, Guarantor shall have the right to have cost information reviewed by and independent auditor during the 60 day period, and if payment due the Ag Property Owner is disputed by Guarantor, they shall have the right to submit the payment claims to arbitration In Adams County, Illinois.

**13. TERMINATION OF GUARANTOR'S OBLIGATIONS.** This Agreement shall terminate and Guarantor shall have no obligation to guarantee the Property value or purchase price once any wind turbines located within two (2) miles of the Property are decommissioned and demolished and operations at the Wind Energy Center have been permanently terminated as the result of any corporate decision, order, judgment, or decree issued by a federal, state, or local agency, court, or unit of government having jurisdiction under administrative code, statute, law, or ordinances.

**14. PROPERTY OWNER OPTION AND ALTERNATIVE TO RELOCATION.** In the event that any Property Owner elects to remain in their home and not relocate pursuant to the preceding terms and conditions of the Property Value Guarantee, Property Owners located in the footprint or within one (1) mile of the perimeter of the footprint shall notify Guarantor within 3 years of commencement of operations of the Wind Energy Project that they are exercising their option under paragraph 14, and shall be compensated by the developer in a cash amount equal to 25% of the Appraised Value, as set forth in paragraph 5 of this agreement. Property Owners located between one (1) mile and two (2) miles of said footprint perimeter shall have 2 years to exercise the paragraph 14 option, and compensation shall be equal to 5% of the Appraised Value, as set forth in paragraph 5 of this agreement. Any exercise of the paragraph 14 Property Owner Option and payment to Property Owner by Guarantor shall constitute a full waiver and release of any future property value diminution claim or right to sell to the Guarantor as otherwise provided for in this agreement.

**15. ASSIGNMENT OR TRANSFER.** Neither this Agreement nor the rights under it may be assigned, conveyed, or otherwise transferred by Property Owners. The guarantee given by Guarantor to guarantee the Property value and to purchase the Property is personal, and does not run with the land; however, said Agreement shall inure to the benefit of the Property Owners, their personal representatives, trustees, guardians, custodians or their heirs; but, in all events, shall terminate after any closed sale of the Property.

**16. APPLICATION OF LAW DISPUTES.** This Agreement shall be construed consistent with law in the State of Illinois. Disputes concerning the application or terms of this Agreement shall be subject to the circuit court jurisdiction of Adams County.

**GUARANTOR:**

By \_\_\_\_\_  
Name Title Date

**PROPERTY OWNERS:**

By \_\_\_\_\_  
Name Date

Notary \_\_\_\_\_



Mono **Multi** Solutions

# THE TALLMAX

FRAMED 72-CELL MODULE



RECEIVED

MAR 20 2018

CHAMPAIGN CO. P & Z DEPARTMENT

**72 CELL**  
MULTICRYSTALLINE MODULE

**320-335W**  
POWER OUTPUT RANGE

**17.3%**  
MAXIMUM EFFICIENCY

**0~+5W**  
POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading comprehensive solutions provider for solar energy. We believe close cooperation with our partners is critical to success. Trina Solar now distributes its PV products to over 60 countries all over the world. Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners.

### Comprehensive Products And System Certificates

IEC61215/IEC61730/UL1703/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse gases Emissions Verification  
 OHSAS 18001: Occupation Health and Safety Management System



### Ideal for large scale installations

- High powerful footprint reduces installation time and BOS costs
- 1000V UL/1000V IEC certified



### One of the industry's most trusted modules

- Field proven performance
- Strong, reliable supplier



### Highly reliable due to stringent quality control

- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- PID resistant
- 100% EL double inspection

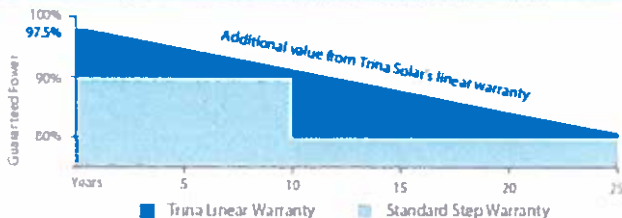


### Certified to withstand the most challenging environmental conditions

- 2400 Pa wind load
- 5400 Pa snow load
- 35 mm hail stones at 97 km/h

### LINEAR PERFORMANCE WARRANTY

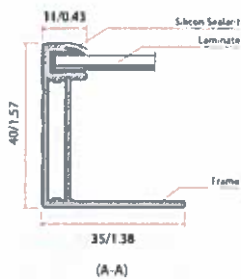
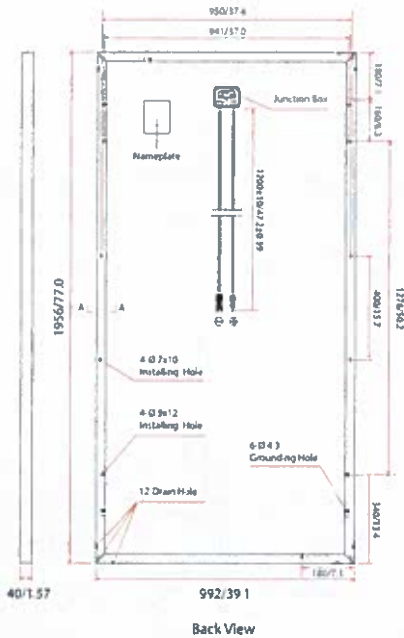
10 Year Product Warranty - 25 Year Linear Power Warranty



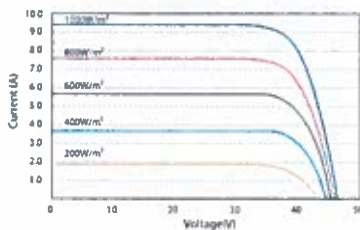
**PRODUCTS**  
TSM-PD14

**POWER RANGE**  
320-335W

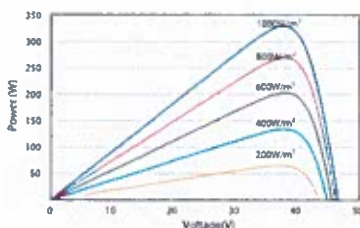
### DIMENSIONS OF PV MODULE (mm/inch)



### I-V CURVES OF PV MODULE(335W)



### P-V CURVES OF PV MODULE(335W)



### ELECTRICAL DATA (STC)

| Parameter                             | 320    | 325  | 330  | 335  |
|---------------------------------------|--------|------|------|------|
| Peak Power Watts $P_{MAX}$ (Wp)*      | 320    | 325  | 330  | 335  |
| Power Output Tolerance- $P_{MAX}$ (W) | 0 - +5 |      |      |      |
| Maximum Power Voltage $V_{MPP}$ (V)   | 37.1   | 37.2 | 37.3 | 37.6 |
| Maximum Power Current $I_{MPP}$ (A)   | 8.63   | 8.76 | 8.87 | 8.91 |
| Open Circuit Voltage $V_{OC}$ (V)     | 45.8   | 45.9 | 46.1 | 46.3 |
| Short Circuit Current $I_{SC}$ (A)    | 9.10   | 9.25 | 9.38 | 9.39 |
| Module Efficiency $\eta_p$ (%)        | 16.5   | 16.8 | 17.0 | 17.3 |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance: ±3%.

### ELECTRICAL DATA (NOCT)

| Parameter                            | 238  | 242  | 246  | 249  |
|--------------------------------------|------|------|------|------|
| Maximum Power- $P_{MAX}$ (Wp)        | 238  | 242  | 246  | 249  |
| Maximum Power Voltage- $V_{MPP}$ (V) | 34.4 | 34.5 | 34.6 | 34.9 |
| Maximum Power Current- $I_{MPP}$ (A) | 6.91 | 7.02 | 7.11 | 7.14 |
| Open Circuit Voltage- $V_{OC}$ (V)   | 42.5 | 42.6 | 42.7 | 42.9 |
| Short Circuit Current- $I_{SC}$ (A)  | 7.35 | 7.47 | 7.57 | 7.58 |

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

### MECHANICAL DATA

|                   |   |
|-------------------|---|
| Solar Cells       | Multicrystalline 156.75 × 156.75 mm (6 inches)  |
| Cell Orientation  | 72 cells (6 × 12)   |
| Module Dimensions | 1956 × 992 × 40 mm (77.0 × 39.1 × 1.57 inches)  |
| Weight            | 22.5 kg (49.6 lb)   |
| Glass             | 3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass                                       |
| Backsheet         | White   |
| Frame             | Silver Anodized Aluminium Alloy   |
| J-Box             | IP 67 or IP 68 rated  |
| Cables            | Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ),<br>1200 mm (47.2 inches) |
| Connector         | MC4 or Amphenol H4/UTX  |
| Fire Type         | Type 1 or Type 2  |

### TEMPERATURE RATINGS

|   |             |
|---|-------------|
| NOCT (Nominal Operating Cell Temperature) | 44°C (±2°C) |
| Temperature Coefficient of $P_{MAX}$      | -0.41%/°C   |
| Temperature Coefficient of $V_{OC}$       | -0.32%/°C   |
| Temperature Coefficient of $I_{SC}$       | 0.05%/°C    |

### MAXIMUM RATINGS

|                         |                                 |
|-------------------------|---------------------------------|
| Operational Temperature | -40~+85°C                       |
| Maximum System Voltage  | 1000V DC (IEC)<br>1000V DC (UL) |
| Max Series Fuse Rating  | 15A                             |

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

### WARRANTY

- 10 year Product Workmanship Warranty
- 25 year Linear Power Warranty

(Please refer to product warranty for details)

### PACKAGING CONFIGURATION

- Modules per box: 27 pieces
- Modules per 40' container: 648 pieces



LIMITED WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTATIC MODULES  
PS-M-0020 Rev. U January 16<sup>th</sup>, 2018

RECEIVED

MAR 20 2018

Limited Warranty

CHAMPAIGN CO. P & Z DEPARTMENT

Trina Solar Co., Ltd ("Trina Solar") hereby grants the following Limited Warranty to the first customer installing (for its own use) (the "Buyer") any of the specified (and no other) brand models listed below (the "Products"):

1) Warranted Products

This Limited Warranty shall only apply to the following Products:

a) Polycrystalline Products

TSM-\*\*\*PA03, TSM-\*\*\*PA05, TSM-\*\*\*PA05.05, TSM-\*\*\*PA05.08, TSM-\*\*\*PA05A, TSM-\*\*\*PA05A.05, TSM-\*\*\*PA05A.08, TSM-\*\*\*PA14, TSM-\*\*\*PA14A, TSM-\*\*\*PA05.10, TSM-\*\*\*PA05.15, TSM-\*\*\*PA05.18, TSM-\*\*\*PA05A.10, TSM-\*\*\*PA05A.15, TSM-\*\*\*PA05A.18, TSM-\*\*\*PA05.002, TSM-\*\*\*PA05.052, TSM-\*\*\*PA05.082, TSM-\*\*\*PA05.102, TSM-\*\*\*PA05.182, TSM-\*\*\*PA05.20, TSM-\*\*\*PA05.25, TSM-\*\*\*PA05.28, TSM-\*\*\*PA14.20;

TSM-\*\*\*PC03, TSM-\*\*\*PC05, TSM-\*\*\*PC05.01, TSM-\*\*\*PC05.05, TSM-\*\*\*PC05.08, TSM-\*\*\*PC05A, TSM-\*\*\*PC05A.05, TSM-\*\*\*PC05A.08, TSM-\*\*\*PC05B, TSM-\*\*\*PC05B.05, TSM-\*\*\*PC05B.08, TSM-\*\*\*PC14, TSM-\*\*\*PC14.08, TSM-\*\*\*PC14A, TSM-\*\*\*PC05.10, TSM-\*\*\*PC05.15, TSM-\*\*\*PC05.18, TSM-\*\*\*PC05A.10, TSM-\*\*\*PC05A.15, TSM-\*\*\*PC05A.18, TSM-\*\*\*PC05A.002, TSM-\*\*\*PC05A.052, TSM-\*\*\*PC05A.082, TSM-\*\*\*PC05A.003, TSM-\*\*\*PC14.002, TSM-\*\*\*PC14.082, TSM-\*\*\*PC06, TSM-\*\*\*PC06.08, TSM-\*\*\*PC05A.50, TSM-\*\*\*PC05A.20, TSM-\*\*\*PC05A.25, TSM-\*\*\*PC05A.28, TSM-\*\*\*PC05A(II), TSM-\*\*\*PC05A.05(II), TSM-\*\*\*PC05A.08(II), TSM-\*\*\*PC14(II), TSM-\*\*\*PC14.08(II), TSM-\*\*\*PC05A.10(II), TSM-\*\*\*PC05A.15(II), TSM-\*\*\*PC05A.18(II), TSM-\*\*\*PC05A.002(II), TSM-\*\*\*PC05A.052(II), TSM-\*\*\*PC05A.082(II), TSM-\*\*\*PC14.002(II), TSM-\*\*\*PC14.082(II);

TSM-\*\*\*PD05, TSM-\*\*\*PD05.05, TSM-\*\*\*PD05.08, TSM-\*\*\*PD05.10, TSM-\*\*\*PD05.15, TSM-\*\*\*PD05.18, TSM-\*\*\*PD05.50, TSM-\*\*\*PD05.002, TSM-\*\*\*PD05.052, TSM-\*\*\*PD05.082, TSM-\*\*\*PD14, TSM-\*\*\*PD14.08, TSM-\*\*\*PD14.10, TSM-\*\*\*PD14.15, TSM-\*\*\*PD14.18, TSM-\*\*\*PD14.002, TSM-\*\*\*PD05(II), TSM-\*\*\*PD05.05(II), TSM-\*\*\*PD05.08(II), TSM-\*\*\*PD05.10(II), TSM-\*\*\*PD05.15(II), TSM-\*\*\*PD05.18(II), TSM-\*\*\*PD14(II), TSM-\*\*\*PD14.08(II), TSM-\*\*\*PD05.00S, TSM-\*\*\*PD05.05S, TSM-\*\*\*PD05.08S, TSM-\*\*\*PD05.05U, TSM-\*\*\*PD05.08U, TSM-\*\*\*PD05.00C, TSM-\*\*\*PD05.05C, TSM-\*\*\*PD05.08C, TSM-\*\*\*PD05.00D, TSM-\*\*\*PD05.05D, TSM-\*\*\*PD05.08D, TSM-\*\*\*PD14.00C;



Trina Solar Co.,Ltd

**LIMITED WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES**PS-M-0020 Rev. U January 16<sup>th</sup>, 2018

TSM-\*\*\*PE05A, TSM-\*\*\*PE05A.08, TSM-\*\*\*PE14A, TSM-\*\*\*PE14A.08, TSM-\*\*\*PE05A(II), TSM-\*\*\*PE05A.08(II), TSM-\*\*\*PE14A(II), TSM-\*\*\*PE14A.08(II);

TSM-\*\*\*PE05H, TSM-\*\*\*PE05H.08, TSM-\*\*\*PE14H, TSM-\*\*\*PE14H.08, , TSM-\*\*\*PD05H, TSM-\*\*\*PD14H, TSM-\*\*\*PD05HB.09;

**b) Monocrystalline Products**

TSM-\*\*\*DA01, TSM-\*\*\*DA01.05, TSM-\*\*\*DA01A, TSM-\*\*\*DA01A.05, TSM-\*\*\*DA01A.08, TSM-\*\*\*DA03, TSM-\*\*\*DA05, TSM-\*\*\*DA01A.10, TM-\*\*\*DA01A.15, TSM-\*\*\*DA01A.18, TSM-\*\*\*DA01A.002, TSM-\*\*\*DA01A.052, TSM-\*\*\*DA01A.082;

TSM-\*\*\*DC01, TSM-\*\*\*DC01.01, TSM-\*\*\*DC01.05, TSM-\*\*\*DC01A, TSM-\*\*\*DC01A.05, TSM-DC01A.08, TSM-\*\*\*DC03, TSM-\*\*\*DC05, TSM-\*\*\*DC80, TSM-\*\*\*DC80.08, TSM-\*\*\*DC01A.10, TSM-\*\*\*DC01A.15, TSM-\*\*\*DC01A.18, TSM-\*\*\*DC01A.002, TSM-\*\*\*DC01A.052, TSM-\*\*\*DC01A.082, TSM-\*\*\*DC05A, TSM-\*\*\*DC05A.05, TSM-\*\*\*DC05A.08, TSM-\*\*\*DC05A.002, TSM-\*\*\*DC05A.052, TSM-\*\*\*DC05A.082; TSM-\*\*\*DC05A.20, TSM-\*\*\*DC05A.25, TSM-\*\*\*DC05A.28, TSM-\*\*\*DC06, TSM-\*\*\*DC06.08, TSM-\*\*\*DC03A(II), TSM-\*\*\*DC03A.05(II), TSM-\*\*\*DC03A.08(II), TSM-\*\*\*DC05A(II), TSM-\*\*\*DC05A.05(II), TSM-\*\*\*DC05A.08(II), TSM-\*\*\*DC05A.002(II), TSM-\*\*\*DC05A.052(II), TSM-\*\*\*DC05A.082(II), TSM-\*\*\*DC06.08(II);

TSM-\*\*\*DD05A(II), TSM-\*\*\*DD05A.05(II), TSM-\*\*\*DD05A.08(II), TSM-\*\*\*DD14A(II), TSM-\*\*\*DD14A.08(II), TSM-\*\*\*DD05A.052(II), TSM-\*\*\*DD05A.082(II), TSM-\*\*\*DD05A.055(II), TSM-\*\*\*DD05A.08S(II), TSM-\*\*\*DD05A.05U(II), TSM-\*\*\*DD05A.08U(II);

TSM-\*\*\*DE05A(II), TSM-\*\*\*DE05A.08(II), TSM-\*\*\*DE14A(II), TSM-\*\*\*DE14A.08(II);

TSM-\*\*\*DE05H(II), TSM-\*\*\*DE05H.08(II), TSM-\*\*\*DE14H(II), TSM-\*\*\*DE14H.08(II), TSM-\*\*\*DD05H(II), TSM-\*\*\*DD14H(II);

Note: The “\*\*\*\*” placeholder stands in each case for the power indication set out in the relevant Product Data Sheet (for example “TSM-260PD05”).

**c) Mounting Products**

Mounting products contained in Trinamount I, Trinamount II and Trinamount 3 D10. Applicable modules are set forth above in a) and b).



**LIMITED WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES**  
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**2) Warranty**

**a) 10 Year Limited Product Warranty**

Trina Solar warrants that for a period of ten years commencing on the Warranty Start Date (as defined below)

- There will be no defects in design, material, workmanship or manufacture that materially impede the functioning of the Product(s), and
- the Product(s) will conform to the specifications and the drawings applicable thereto.

This Limited Product Warranty covers glass breakage provided that there was no external cause of breakage (i.e. only breakage caused by the glass itself or the module is covered).

Any deterioration in the appearance of the Product(s) (including, without limitation, any scratches, stains, mechanical wear, rust, or mold) or any other changes to the Product(s) which occur after delivery (Incoterm 2010) to the Buyer, do not constitute a defect under this Limited Warranty. The rights of the Buyer under Sec. 2 b) shall remain unaffected.

**b) 25 Year Limited Power Output Warranty**

In addition, Trina Solar warrants that for a period of twenty-five years commencing on the Warranty Start Date, the loss of power output relating to the initial guaranteed power which is defined as Peak Power Watts  $P_{max}(Wp)$  plus Peak Power Watts  $P_{max}(Wp)$  multiplied by the lower limit of the Power Output Tolerance  $P_{max}(\%)$ —as specified in the relevant Product Data Sheet and measured at Standard Test Conditions (STC) for the Product(s) shall not exceed

- For Polycrystalline Products (as defined in Sec. 1 a): 2.5% in the first year, thereafter 0.7% per year, ending with 80.7% in the 25<sup>th</sup> year after the Warranty Start Date,
- For Monocrystalline Products (as defined in Sec. 1 b): 3.0% in the first year, thereafter 0.68% per year, ending with 80.68% in the 25<sup>th</sup> year after the Warranty Start Date.
- The actual power output shall be determined for verification using STC only and measurement shall either be carried out by Trina Solar or by a Trina Solar recognized third-party testing institute. (Remark: According to STC, Measurement system uncertainty will be applied to all actual power output measurements.)

**3) Warranty Start Date**

The Warranty Start Date is the date of installation of the Product(s) or three months after the delivery (Incoterms 2010) of the Product(s) to the Buyer, whichever date is earlier.

**4) Exclusions and Limitations**

The aforementioned "Limited Warranty" does not apply to any Products which have been subjected to

- a) Failure to pay the purchase price towards Trina Solar or its subsidiaries which have put the modules on the market even though (i), the payment was due and (ii) the direct customer who



**LIMITED WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES**

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has obtained the modules from Trina Solar or its subsidiary („Direct Customer“) is not entitled to withhold the purchase price or parts of the purchase price. Trina Solar must inform the Buyer about the non-payment and provide the name and the full address of the Direct Customer which has failed to pay the modules. In case that Trina Solar can reject the claim under this warranty based on this provision, the Buyer can deposit the amount not paid in order to trigger the warranty claims;

- b) Failure to comply with the requirements of Trina Solar’s user manual applicable during the Validity of this Limited Warranty pursuant to Sec 10;
- c) Service by service technicians who are not qualified under the relevant law and/or applicable regulations at the place of installation;
- d) The Product’s type, nameplate or module serial number is changed, erased or made illegible (other than by any act or omission of Trina Solar);
- e) The Product’s installation on mobile units (except photovoltaic tracking system), such as vehicles, ships or offshore-structures;
- f) Exposure to voltage in excess to the maximum system voltage or power surges;
- g) Defective components in the construction on which the module is mounted;
- h) exposure to mold discoloration or similar external effects;
- i) exposure to any of the following: extreme thermal or environmental conditions or rapid changes in such conditions, corrosion, oxidation, unauthorized modifications or connections, unauthorized opening, servicing by use of unauthorized spare parts, accident, force of nature (such as lightning strike, earthquake), influence from chemical products or other acts beyond Trina Solar’s reasonable control (including damage by fire, flood, hurricane, etc.);
- j) use of the Products in such a manner as to infringe Trina Solar’s or any third party’s intellectual property rights (e.g. patents, trademarks). Parallel importation, which is defined as subsequent sale without the consent of Trina Solar from the country in which the Product(s) were first put on the market to another country, is regarded as an infringement of Trina Solar’s intellectual property rights. This does not apply for sales within the European Union: such sales from one Member State to another Member State do not require the consent of Trina Solar; whereas sales from outside the European Union into the European Union require such consent of Trina Solar
- k) Only for buyers located in Australia applies: The "Limited Warranty" is only valid for products from authorized Australian resellers. Buyers may contact the Customer Support office in their region (as detailed in clause 7) for details of authorized Australian resellers.
- l) Only for buyers located in the US applies: The "Limited Warranty" is only valid for products from authorized US resellers. Buyers may contact the Customer Support office in their region (as detailed in clause 7) for details of authorized US resellers.

**5) Repair, Replacement or Refund Remedy**

- a) As Buyer’s sole and exclusive remedy under this Limited Warranty (though Buyer should note paragraph 5(d) below regarding the potential existence of other statutory rights and paragraph 5(e) below for Australian Buyers) Trina Solar will, at its sole discretion, either, with regard to the applicable Product (or component thereof in the case of Mounting Product):



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- i) refund the salvage value of the defective Product(s). For purposes of this Limited Warranty salvage value shall mean the purchase price of the defective Product(s) divided by the number of years constituting the warranty period within the meaning of Sec. 2b) and multiplied by the number of full years from the date of notification within the meaning of Sec. 7a) until the end of the applicable warranty period; or
- ii) repair the defective Product(s) at no charge (subject to the following paragraph); or
- iii) replace the defective Product(s) or part thereof by a new or remanufactured equivalent at no charge (subject to the following paragraph). Trina Solar reserves the right to provide a similar Product in replacement of the defective Product if the defective Product is discontinued or otherwise unavailable.

In the event that Trina Solar opts for options ii) or iii), Trina Solar shall bear all insurance and transportation charges (except air freight), customs clearance and any other costs for returning the defective Product(s) to Trina Solar and shipping the repaired or replaced Product(s) to Buyer (a Buyer may claim reimbursement by Trina for these charges by providing proof to Trina Solar that these charges were incurred, e.g. an invoice from the relevant service provider). Ownership of returned Product(s) shall pass to Trina Solar free of charge. The costs and expenses for the removal, installation or reinstallation shall remain with Buyer.

- b) The warranty period(s) as defined in Sec. 2 a) and b) shall not extend or renew upon the repair or replacement of a defective Product by Trina Solar. The warranty period for replaced or repaired Product(s) is the remainder of the warranty on the original new Product(s).
- c) All other claims under this Limited Warranty against Trina Solar shall be excluded. Under this Limited Warranty, Trina Solar is not responsible for any special, incidental or consequential damages (including loss of profits, business interruption, loss of power generation, harm to goodwill or business reputation, or delay damages) whether such claims are based in contract, warranty, negligence or strict tort. This exclusion applies to the extent permissible by law, and even if the remedies set forth below herein are deemed to have failed of their essential purpose.
- d) YOU MAY HAVE SPECIFIC LEGAL RIGHTS OUTSIDE THIS WARRANTY, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE. THIS LIMITED WARRANTY DOES NOT AFFECT ANY ADDITIONAL RIGHTS YOU HAVE UNDER LAWS IN YOUR JURISDICTION GOVERNING THE SALE OF CONSUMER GOODS, INCLUDING WITHOUT LIMITATION, NATIONAL LAWS IMPLEMENTING EC DIRECTIVE 99/44 OR PURSUANT TO THE MAGNUSON MOSS WARRANTY ACT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE LIMITATIONS OR EXCLUSIONS IN THIS LIMITED WARRANTY STATEMENT MAY NOT APPLY.
- e) The following statement applies to customers that are 'consumers' within the meaning of the Australian Consumer Law:



**LIMITED WARRANTY FOR TRINA SOLAR BRAND CRYSTALLINE SOLAR PHOTOVOLTAIC MODULES**  
**PS-M-0020 Rev. U January 16<sup>th</sup>, 2018**

“Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.”

**6) Rights and Remedies against Third Parties**

This Limited Warranty shall be construed as a separate warranty and independent from any other contractual arrangement with third parties relating to the Product(s). It shall not affect any rights, obligations and remedies of the Buyer, if any, with regard to third parties for defects or non-conformity or non-compliance of the Products, notwithstanding its legal basis. The rights and remedies provided hereunder are in addition to any other rights and remedies against third parties to which Buyer may be entitled by agreements with such third parties or by law.

**7) Claims Procedure, Notice Periods, Expiration of Warranty Claims and Limitations.**

a) Buyer shall notify Trina Solar under this Limited Warranty using Trina Solar’s Customer Service Portal at the web address <http://customerservice.trinasolar.com>; alternatively by letter or facsimile. The notification shall specify the claim and, without limitation, include proof for the purchase (purchasing invoices indicating purchase date, Product(s), serial numbers) and for the defect or malfunction (i.e. related to transport, storage and installation) of the Product(s). The contact customer support center for the regions are:

**Europe Customer Support**

Trina Solar (Schweiz) AG  
 Richtstrasse 11,  
 8304 Wallisellen, Switzerland  
 T +41 43 299 68 00  
 F +41 43 299 68 10  
<http://customerservice.trinasolar.com>

**Americas Customer Support**

Trina Solar (U.S.), Inc.  
 100 Century Center, Suite 501,  
 San Jose CA 95112, USA  
 T +1 800 696 7114  
 F +1 800 696 0166  
<http://customerservice.trinasolar.com>

**Australia Customer Support**

Trina Solar Australia Pty Ltd  
 Level 35, 60 Margaret Street,  
 Sydney NSW 2000, Australia  
 T +61 (0)2 9199 8500  
 F +61 2 9199 8006  
<http://customerservice.trinasolar.com>

**Japan Customer Support**

Trina Solar (Japan) Limited  
 World Trade Center Building 21F  
 4-1, Hamamatsu-cho, 2-chome,  
 Minato-ku, Tokyo, Japan, 105-6121  
 T +81-3-3437-7000  
 F +81-3-3437-7001  
<http://customerservice.trinasolar.com>

**Rest of World (ROW) Customer Support**

Changzhou Trina Solar Energy Company Limited  
 No. 2 Trina Road, Trina PV Industrial Park,





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New District, Changzhou, Jiangsu,  
P.R. China, 213031  
T +86 519 8548 2008  
F +86 519 8517 6021  
<http://customerservice.trinasolar.com>

- b) Any dispute on technical facts relating to claims brought under this Limited Warranty for defects of Products shall be determined by expert determination. Trina Solar and the Buyer will, at the Buyer's or Trina Solar's request, appoint as independent expert and appraiser a reputable researcher from a first-class test-institute such as Fraunhofer ISE in Freiburg/ Germany, TÜV (e.g. TÜV Rheinland, TÜV SUD or Shanghai TÜV) or ASU Arizona State University, and so on ("Technical Expert"). The determination by such Technical Expert shall be final, conclusive, binding and enforceable in any proceeding brought hereunder. The Technical Expert shall (i) act as an expert; (ii) allow the parties a reasonable opportunity to make representations and counter-representations; (iii) take those representations and counter-representations into account; and (iv) if required by either party give written reasons for his or her determination.
- c) Any claim for breach of this Limited Warranty must be brought within two (2) months after discovery of the breach.
- d) The return of any defective Product(s) will not be accepted unless prior written authorization has been given by Trina Solar.

**8) Force Majeure**

Trina Solar shall not be responsible or liable in any way to the Buyer for any non-performance or delay in Trina Solar's performance under this Limited Warranty due to occurrences of force majeure such as, war, riots, strikes, unavailability of suitable and sufficient labor, material, or capacity or technical or yield failures and any unforeseen event beyond its control, including, without limitation, any technological or physical event or condition which is not reasonably known or understood at the time of the sale of the defective Product(s) or the notification of the relevant warranty claim under this Limited Warranty.

**9) Warranty Assignment**

This Limited Warranty is transferrable when the Products remain installed in their original installation location.

**10) Validity**

This Limited Warranty shall apply to Product(s)

delivered to Buyer on or after 21<sup>st</sup> of January 2018 (Incoterms 2010).

This Limited Warranty shall be valid until a new revision is issued by Trina Solar.



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**11) No Other Express Warranty**

Except as otherwise provided by applicable statutory law (cf. Sec. 5 d) and 5 e) above) or unless modified in writing and signed by an officer of Trina Solar, the Limited Warranty set forth herein is the only express warranty (whether written or oral) by Trina Solar applicable to the Products and no one is authorized to restrict, expand or otherwise modify this Limited Warranty.

**12) Miscellaneous**

If any provision of this Limited Warranty is held invalid, unenforceable or contrary to law then the validity of the remaining provisions of this Limited Warranty shall remain in full force and effect.

**13) Limitation of Liability**

To the maximum extent permitted by applicable law, Trina Solar's aggregate liability according to this Limited Warranty shall not exceed the purchase price paid by the Buyer for the defective Product(s) in the case of a Warranty Claim. The Buyer acknowledges that the foregoing limitation of liability is an essential element of this Warranty and that in the absence of such limitations the purchase price of the Product(s) would be significantly higher.

**14) Applicable Law and Jurisdiction**

The validity of this Limited Warranty, the construction of its terms and the interpretation and enforcement of the rights and duties of the Buyer and Trina Solar shall be governed by the laws of the country of the original installation location of the Product(s), to the exclusion of that country's conflicts of law rules as well as of the United Nations Convention on the International Sale of Goods dated 11 April 1980 (CISG) and of any other uniform law.

All disputes arising out of or in connection with this Limited Warranty shall be finally settled before the ordinary courts of the country of the original installation location of the Product(s).

**Note**

The installation and operation of photovoltaic modules requires professional skills and should only be performed by qualified professionals. Please read the safety and installation instructions before using and operating the Product(s). <http://www.trinasolar.com/en-glb/resources/downloads>

www.jinkosolar.com

**Eagle 72**  
**315-335 Watt**  
 POLY CRYSTALLINE MODULE

Positive power tolerance of 0~+3%

ISO9001:2008, ISO14001:2004, OHSAS18001 certified factory.  
 IEC61215, IEC61730 certified products

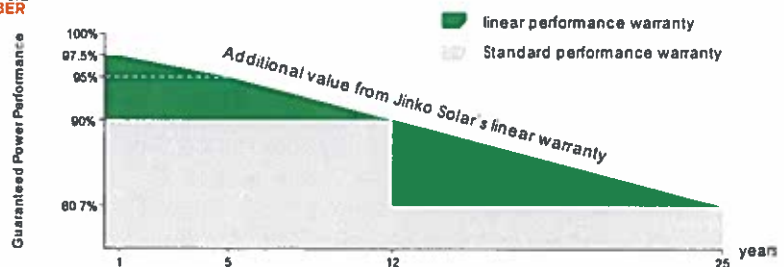


### KEY FEATURES

-  **4 Busbar Solar Cell:**  
4 busbar solar cell adopts new technology to improve the efficiency of modules, offers a better aesthetic appearance, making it perfect for rooftop installation.
-  **High Power Output:**  
Polycrystalline 72-cell module achieves a power output up to 335Wp.
-  **PID RESISTANT:**  
Limited power degradation of Eagle module caused by PID effect is guaranteed under strict testing condition (85°C/85%RH,96hours) for mass production.
-  **Low-light Performance:**  
Advanced glass and surface texturing allow for excellent performance in low-light environments.
-  **Severe Weather Resilience:**  
Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).
-  **Durability against extreme environmental conditions:**  
High salt mist and ammonia resistance certified by TUV NORD.
-  **Temperature Coefficient:**  
Improved temperature coefficient decreases power loss during high temperatures.

### LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty • 25 Year Linear Power Warranty

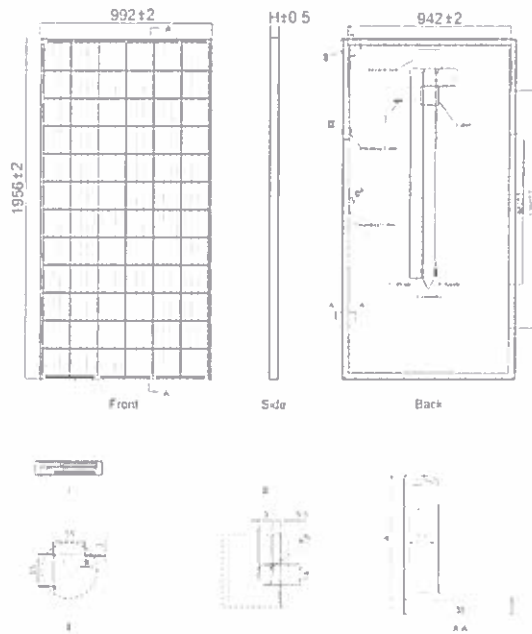


PV CYCLE  
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CE  
 POSITIVE QUALITY

CLEAN ENERGY COUNCIL MEMBER

## Engineering Drawings

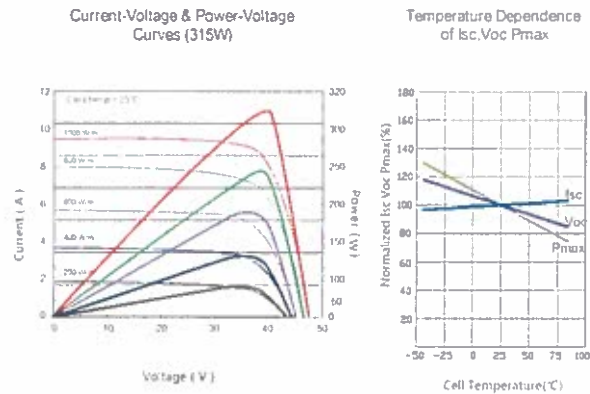


## Packaging Configuration

1 Two boxes=One pallet

26pcs/box, 52pcs/pallet, 824 pcs/40'HQ Container

## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

|               |  |
|---------------|--|
| Cell Type     | Poly-crystalline 156×156mm (6 inch)  |
| No. of cells  | 72 (6×12)  |
| Dimensions    | 1956×992×40mm (77.01×39.05×1.57 inch)                                      |
| Weight        | 26.5 kg (58.4 lbs.)  |
| Front Glass   | 4.0mm, Anti-Reflection Coating, High Transmission, Low Iron Tempered Glass |
| Frame         | Anodized Aluminium Alloy   |
| Junction Box  | IP67 Rated   |
| Output Cables | TUV 1×4.0mm <sup>2</sup> , Length 900mm or Customized Length               |

## SPECIFICATIONS

| Module Type                               | JKM315PP-72   |       | JKM320PP-72 |       | JKM325PP-72 |       | JKM330PP-72 |       | JKM335PP-72 |       |
|---|---------------|-------|-------------|-------|-------------|-------|-------------|-------|-------------|-------|
|   | STC           | NOCT  | STC         | NOCT  | STC         | NOCT  | STC         | NOCT  | STC         | NOCT  |
| Maximum Power (Pmax)                      | 315Wp         | 235Wp | 320Wp       | 238Wp | 325Wp       | 242Wp | 330Wp       | 246Wp | 335Wp       | 250Wp |
| Maximum Power Voltage (Vmp)               | 37.2V         | 34.3V | 37.4V       | 34.7V | 37.6V       | 35.0V | 37.8V       | 35.3V | 38.0V       | 35.6V |
| Maximum Power Current (Imp)               | 8.48A         | 6.84A | 8.56A       | 6.86A | 8.66A       | 6.91A | 8.74A       | 6.97A | 8.82A       | 7.02A |
| Open-circuit Voltage (Voc)                | 46.2V         | 43.2V | 46.4V       | 43.7V | 46.7V       | 44.0V | 46.9V       | 44.2V | 47.2V       | 44.4V |
| Short-circuit Current (Isc)               | 9.01A         | 7.29A | 9.05A       | 7.30A | 9.10A       | 7.34A | 9.14A       | 7.38A | 9.18A       | 7.43A |
| Module Efficiency STC (%)                 | 18.23%        |       | 16.49%      |       | 16.75%      |       | 17.01%      |       | 17.26%      |       |
| Operating Temperature(°C)                 | -40°C~+85°C   |       |             |       |             |       |             |       |             |       |
| Maximum system voltage                    | 1000VDC (IEC) |       |             |       |             |       |             |       |             |       |
| Maximum series fuse rating                | 15A           |       |             |       |             |       |             |       |             |       |
| Power tolerance                           | 0~+3%         |       |             |       |             |       |             |       |             |       |
| Temperature coefficients of Pmax          | -0.40%/°C     |       |             |       |             |       |             |       |             |       |
| Temperature coefficients of Voc           | -0.30%/°C     |       |             |       |             |       |             |       |             |       |
| Temperature coefficients of Isc           | 0.06%/°C      |       |             |       |             |       |             |       |             |       |
| Nominal operating cell temperature (NOCT) | 45±2°C        |       |             |       |             |       |             |       |             |       |

\*STC: Irradiance 1000W/m<sup>2</sup> Cell Temperature 25°C AM=1.5

NOCT: Irradiance 800W/m<sup>2</sup> Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s

\* Power measurement tolerance ± 3%

|   |   |   |
|---|---|---|
|  | <h2 style="margin: 0;">LIMITED WARRANTY</h2> <p style="margin: 0;">REV. 050114-LINEAR</p> | <div style="font-size: 2em; font-weight: bold; color: blue; margin: 0;">RECEIVED</div> <div style="font-size: 1.2em; font-weight: bold; color: blue; margin: 5px 0;">MAR 20 2018</div> <div style="font-size: 0.8em; color: blue; margin: 0;">CHAMPAIGN COUNTY P &amp; Z DEPARTMENT</div> |
|---|---|---|

Jinko Solar Import and Export Co., Ltd. ("Jinko") generally provides the Warranties set forth herein to the original purchaser and its permitted successors and assigns ("Customer") with respect to all solar photovoltaic modules sold by Jinko under purchase agreements signed on or after May 1, 2014 ("Modules"), subject to the terms and conditions herein ("Limited Warranty"). Jinko and Customer may hereinafter be referred to each as a "Party" and collectively as the "Parties".

1. **WARRANTY START DATE.** Jinko provides the Warranties set forth herein commencing upon the earlier of delivery of Modules to the original purchaser thereof or that date which is one hundred and eighty (180) days following the Module manufacture date, as indicated by the serial number [digit no. 7 – 12 (YYMMDD), starting from the left side of the serial number] for such Module ("Warranty Start Date").

2. **LIMITED PRODUCT WARRANTY.** Beginning on the Warranty Start Date and terminating on that date which is one hundred and twenty (120) months thereafter, Jinko warrants that the Modules and their respective DC connectors and cables, if any, shall be free from material defects in design, materials and workmanship that affect the performance of the Module ("Limited Product Warranty"). Material defects shall not include normal wear and tear.

3. **LIMITED POWER WARRANTY.** Jinko warrants that the Degradation Rate shall not exceed the following for the periods identified following the Warranty Start Date: (a) for mono-crystalline Modules: (i) 3.0% in the first year; (ii) 0.7% each year thereafter until that date which is twenty-five (25) years following the Warranty Start Date, at which time the Actual Power Output shall be not less than 80.2% of the Nominal Power Output; and (b) for poly-

crystalline Modules: (i) 2.5% in the first year; (ii) 0.7% each year thereafter until that date which is twenty-five (25) years following the Warranty Start Date, at which time the Actual Power Output shall be not less than 80.7% of the Nominal Power Output ("Limited Power Warranty").

4. **POWER DEFINITIONS.** "Nominal Power Output (PO<sub>n</sub>)" means the original manufactured nameplate specification of the Module, expressed in Watts, as certified by Jinko and indicated on the Module, excluding any specified positive tolerance. "Actual Power Output (PO<sub>a</sub>)" means the power output of the Module, expressed in Watts, at Watt peak that a Module generates at a given point in time in a year after the Warranty Start Date (t) in its 'Maximum Power Point' under Standard Test Conditions, corrected for any measurement error ("STC"). STC are as follows, measured in accordance with IEC 61215: (a) light spectrum of AM 1.5; (b) an irradiation of 1000W per m<sup>2</sup>; and (c) a cell temperature of 25 degrees centigrade at right angle irradiation. The "Degradation Rate (DR)" shall be any positive amount calculated in accordance with the following formula, expressed as a percent:

$$DR = 1.00 - [(PO_a) / (PO_n)]$$

5. **CLAIMS.** Customer shall bear the burden of establishing a breach of the Warranties hereunder. If Customer believes there has been a breach of the Limited Product Warranty or Limited Power Warranty (collectively, "Warranties"), then Customer shall promptly, and not later than thirty (30) days after knowledge thereof, provide notice to Jinko setting forth the following information related to the claim: (a) party making claim; (b) detailed description; (c) evidence, including photographs and data; (d) relevant serial numbers; (e)



Warranty Start Date; (f) Module type; (g) physical address; (h) any additional evidence reasonably requested by Jinko; and (i) upon request from Jinko, the actual Module(s) allegedly causing the breach. Notwithstanding anything to the contrary herein, Jinko shall be entitled, in Jinko's sole discretion upon written notice to Customer, to require that any breach of the Warranties alleged by Customer be reviewed by TÜV Rheinland, TÜV SÜD or other neutral third party testing laboratory selected by Jinko and approved by Customer, such approval not to be unreasonably withheld or delayed ("Independent Testing Lab"). The power measurement tolerance of any testing equipment utilized by any Independent Testing Lab in performing tests required by this Section 5 shall be disclosed in writing to both Parties prior to performance of any such tests and shall be reflected in any final test results provided by the Independent Testing Lab. The determination by an Independent Testing Lab as to whether a breach has occurred shall be final and conclusive with respect to the matters covered by such determination. Jinko shall be responsible for all costs incurred by it in connection with the shipment by Customer of a Module pursuant to Section 5(i) hereto and any Independent Testing Lab's services provided pursuant to this Section 5, including shipping, testing services, storage, insurance and any Module destruction incidental thereto; provided, however, Customer shall promptly upon receipt of notice indemnify Jinko for all such costs on a dollar-for-dollar basis in the event the Independent Testing Lab is unable to confirm a breach of the Warranties or Customer is otherwise unable to establish a breach of the Warranties.

**6. REMEDIES.** In Jinko's sole discretion, Jinko shall repair, replace or provide additional modules compensating for the related power

loss for any Module which causes a breach of the Warranties. Additional, repaired or replacement Modules shall be delivered to the same destination and on the same INCOTERMS 2010 delivery basis that the original Module causing breach of the Warranties was delivered under the purchase agreement to which this Limited Warranty applies. Replaced Modules received by Jinko pursuant to Section 5 shall be the sole property of Jinko. Jinko shall be solely responsible for all shipping costs incurred performing its additional supply, repair or replacement obligations under this Section 6. Additional or replacement Modules shall be of the same type and physical form as the original Module, electrically compatible with the original Module, and have an electrical output of not less than the warranted power output of the original Module at the time of supply or replacement, based on the warranted degradation rates set forth at Section 3 hereto. Notwithstanding the foregoing, if Jinko no longer supplies Modules meeting the foregoing criteria, then additional or replacement Modules provided under this Section 6 shall be those Modules then supplied by Jinko most substantially meeting the foregoing criteria. Jinko's performance of any repair, replacement or additional supply pursuant to this Section 6 shall not extend the term of any Warranties.

**7. EXCLUSIONS.** This Limited Warranty is subject to the exclusions set forth in this Section 7. The Warranties shall not apply to any Module which has been: (a) altered, repaired or modified without the prior written consent of Jinko or otherwise inconsistent with Jinko's written instructions; (b) removed and re-installed at any location other than the physical location in which it was originally installed following purchase by Customer or receipt from Jinko as a replacement Module; (c) subject to misuse, abuse, neglect, or accident except as may be



caused by Jinko in the course of storage, transportation, handling, installation, application, use or service; (d) subject to force majeure, electrical surges, lightning, flood, fire, vandalism, tampering, accidental breakage, or other events beyond Jinko's control, resulting in material damage to the Module; (e) installed on mobile platforms (other than single- or dual-axis trackers) or in a marine environment; (f) subject to direct contact with corrosive agents or salt water; pest damage; or malfunctioning PV system components; or (g) used in a manner inconsistent with the version of Jinko Installation Manual available at [www.jinkosolar.com](http://www.jinkosolar.com) on the date the Module is manufactured. The Warranties shall not apply to any Module for which the labels thereon indicating type or serial number have been altered, removed or made illegible. The Warranty shall not apply to Modules for which full and final payment has not been received by Jinko.

8. NOTICE. Any notice required or permitted under this Limited Warranty shall be in writing and deemed to be properly given by the sender and received by the addressee. Mailed notices and facsimile notices shall be addressed to the Jinko office located closest to the place of original installation, as identified at [www.jinkosolar.com/contact.html](http://www.jinkosolar.com/contact.html). Notices by e-mail should be sent to [cs@jinkosolar.com](mailto:cs@jinkosolar.com). Customer shall promptly provide contact information upon request. For the avoidance of doubt, e-mail alone shall not constitute valid notice pursuant to this Section 8.

9. LIMITS OF LIABILITY. NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS LIMITED WARRANTY, EXCEPT AS EXPRESSLY PROVIDED HEREIN, JINKO MAKES NO WARRANTIES, GUARANTEES OR CONDITIONS, EXPRESS OR IMPLIED, ARISING FROM OR RELATING TO THE

MODULES AND JINKO DISCLAIMS ANY WARRANTY OR GUARANTEE IMPLIED BY LAW, INCLUDING IMPLIED WARRANTIES OF PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND IMPLIED WARRANTIES OF CUSTOM OR USAGE, ARISING FROM OR RELATING TO THE MODULES. THE REMEDIES FOR BREACH OF THIS WARRANTY ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES ARISING FROM OR RELATING TO ANY BREACH OF THE WARRANTIES. IN NO EVENT SHALL JINKO BE RESPONSIBLE PURSUANT TO THIS WARRANTY FOR ANY PERFORMANCE ANALYSIS, INSPECTION, DIAGNOSIS, REMOVAL, CUSTOMS, IMPORT DUTIES, EXPORT DUTIES, TAXES, REINSTALLATION COSTS, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING LOSSES OR DAMAGES CAUSED BY REASON OF LOSS OF USE, LOSS OF PROFITS OR REVENUE, INTEREST CHARGES (EXCEPT AS EXPRESSLY PROVIDED HEREIN), LOSS OF BONDING CAPACITY, COST OF CAPITAL OR CLAIMS OF CUSTOMER DAMAGES, WHETHER LIABILITY ARISES AS A RESULT OF BREACH OF CONTRACT, TORT LIABILITY (INCLUDING NEGLIGENCE), STRICT LIABILITY, BY OPERATION OF LAW OR IN ANY OTHER MANNER. EXCEPT AS SET OUT IN THIS LIMITED WARRANTY, JINKO SHALL HAVE NO RESPONSIBILITY OR LIABILITY WHATSOEVER FOR DAMAGE OR INJURY TO PERSONS OR PROPERTY, OR FOR OTHER LOSS OR INJURY RESULTING FROM ANY CAUSE WHATSOEVER ARISING OUT OF OR RELATED TO THIS LIMITED WARRANTY.

10. ASSIGNMENT. Notwithstanding anything to the contrary herein, this Limited Warranty is for the sole and exclusive benefit of Customer and there are no third party beneficiaries hereof; provided, however, subject to written notice to



and Jinko's receipt of full and final payment for the Modules, this entire Limited Warranty may be assigned in whole but not in part to any person or entity. Any permitted assignee of this Limited Warranty shall execute such agreements as may reasonably be requested by Jinko to confirm the applicability of any term hereof as a condition to assignment.

11. **LAW AND FORUM.** Any dispute related to or arising out of this Limited Warranty, including without limitation any question regarding its existence, validity, breach, or termination, shall be referred to and finally resolved pursuant to the governing law clauses and dispute resolution procedures under the purchase agreement between the original purchaser and Jinko. As a condition to any obligation of Jinko hereunder, Jinko may require any Customer seeking to enforce this Limited Warranty to execute such additional agreements as may reasonably be required to enforce the terms of this Section 11.

12. **MERGER CLAUSE.** This Limited Warranty sets forth the entire agreement and understanding of the Parties relating to the subject matter herein and supersedes all prior or contemporaneous discussions, understandings and agreements, whether oral or written, between them relating to the subject matter hereof.

13. **SEVERABILITY.** If one or more provisions of this Limited Warranty are held to be unenforceable under applicable law, the Parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (a) such provision shall be excluded from this Limited Warranty, (b) the balance of this Limited Warranty shall be interpreted as if such

provision were so excluded and (c) the balance of the this Limited Warranty shall be enforceable in accordance with its terms.

14. **MISCELLANEOUS.** The terms of this Limited Warranty are conditioned upon their incorporation in a contractual agreement between Jinko and Customer and are subject to modification when incorporated therein. Jinko reserves the right to modify or rescind this Limited Warranty at any time, with or without notice.

[END OF LIMITED WARRANTY]

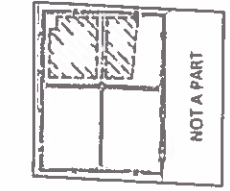
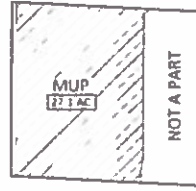
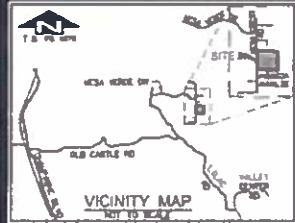
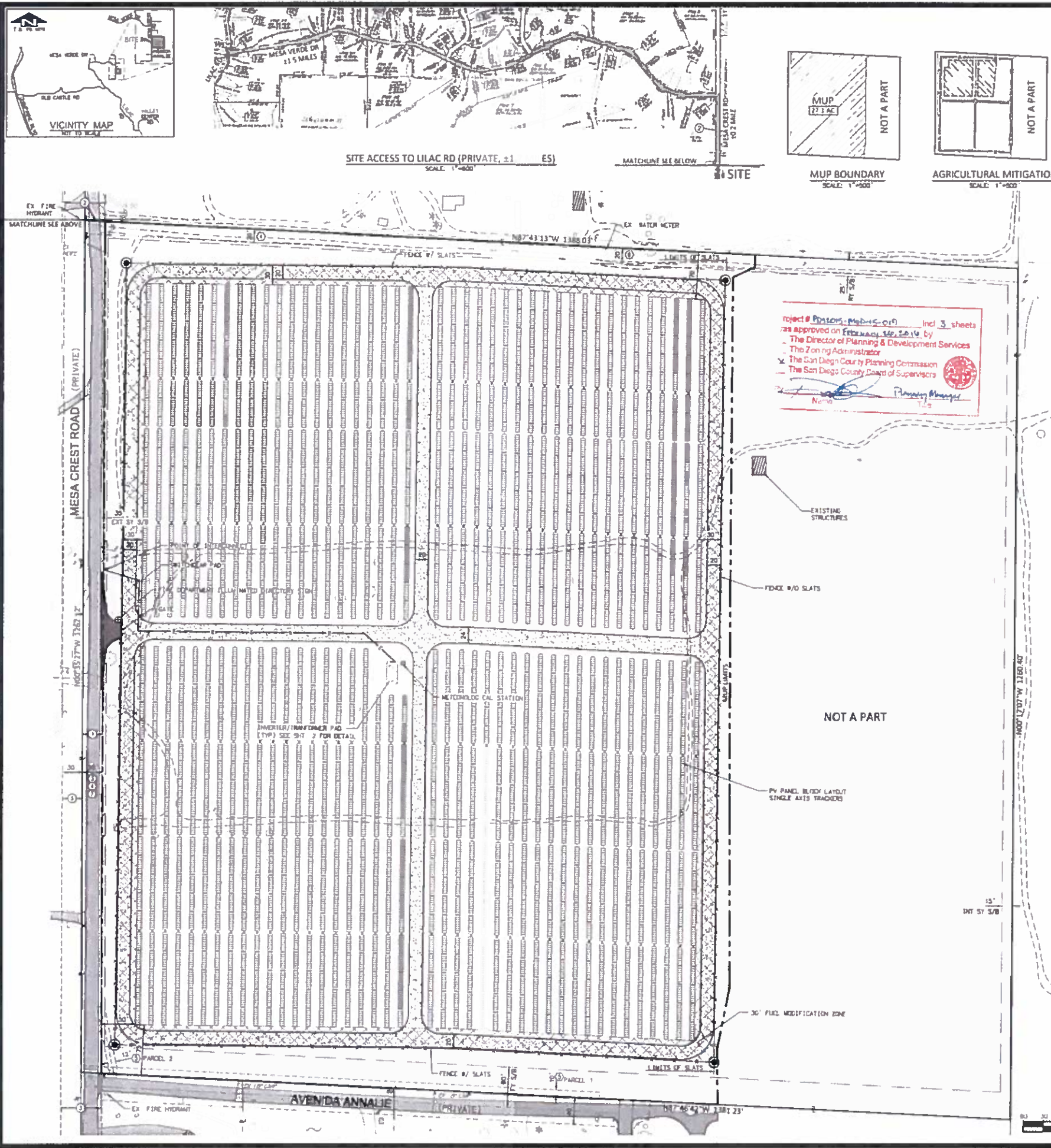


3 MW example

CHAMPAIGN CO. P & Z DEPARTMENT

MAR 2 1 2018

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Project # 180705-18-019, Inc. 3 sheets  
 as approved on February 26, 2018, by  
 The Director of Planning & Development Services  
 The Zoning Administrator  
 The San Diego County Planning Commission  
 The San Diego County Board of Supervisors

*[Signature]*  
 Planning Manager

NOTES

- GROSS AREA: 40.1 ACRES
  - NET AREA: 30.2 ACRES  
MESA CREST ROAD EASEMENT = 9 AC
  - MUP BOUNDARY AREA: 27.1 AC
  - GENERAL PLAN SEMI-RURAL RESIDENTIAL (SR-2)
  - REGIONAL CATEGORY: SEMI-RURAL LAKES
  - TOPOGRAPHIC SOURCE: AEROTEC HAPPING INC. FLOM 5
  - ASSOCIATED REQUESTS: NONE
  - WATER DISTRICT: VALLEY CENTER MUNICIPAL WATER DISTRICT
  - FIRE DISTRICT: VALLEY CENTER FIRE PROTECTION DISTRICT
- THE APPROVAL OF THIS MAJOR USE PERMIT (MUP) AUTHORIZES THE FOLLOWING CONSTRUCTION OPERATION AND MAINTENANCE OF A PHOTOVOLTAIC SOLAR FARM PURSUANT TO SECTION 8952 OF THE SAN DIEGO COUNTY ZONING ORDINANCE.
- THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING, SHORING, EROSION AND ACCESS TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.
- ALL SOLAR EQUIPMENT STRUCTURES TO BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS (CONCRETE, BLOCK, METAL) OR WILAR AND PAINTED CARBONACE COLORS.
  - LIGHTING FOR MAINTENANCE AND SECURITY PURPOSES ONLY. SHIELDED LIGHTING LOCATED AT ENTRANCE GATES AND INVERTER/TRANSFORMER PADS SHALL CONFORM TO COUNTY OF SAN DIEGO OUTDOOR LIGHTING REQUIREMENTS. SEE DETAIL ON SHEET 2.
  - PHASING - PROJECT MAY BE IMPLEMENTED IN SEVERAL PHASES WITHOUT REGARD TO SEQUENCE.
  - ALL DISTURBED AREAS WOULD BE COVERED WITH GRAVEL OR A SIMILAR AGENT TO REDUCE DUST.
  - SEE PRELIMINARY GRADING PLAN FOR PROPOSED GRADING.
  - SITE ACCESS GATES TO BE EQUIPPED WITH FIRE DEPARTMENT APPROVED STROBE LIGHT ACTIVATION AND HIGH KEY-OPERATED SWITCH.
  - SOLAR RELATED FACILITIES (PANELS, RACKING, ELECTRICAL CONNECTIONS, INVERTER/TRANSFORMER PADS, SWITCHGEAR, MET STATION, FENCING AND INTERNAL ACCESS, ETC.) SHOWN ON THE PLOT PLAN MAY BE RELOCATED, RECONFIGURED, AND/OR RESIZED WITHIN THE SOLAR FACILITY DEVELOPMENT AREA WITH THE ADMINISTRATIVE APPROVAL OF THE DIRECTOR OF PDS WHEN FOUND IN CONFORMANCE WITH THE INTENT AND CONDITIONS OF PERMIT APPROVAL. INVERTER/TRANSFORMER LOCATIONS CAN BE RELOCATED/RECONFIGURED WITHOUT REQUIREMENT OF MINOR DEVIATION THE INVERTER/TRANSFORMER MUST COMPLY WITH THE NOISE ORDINANCE AND MUST BE ELEVATED 1' ABOVE FLOOD ELEVATION THE 24" FIRE ACCESS ROAD WIDTHS MAY BE REDUCED ADMINISTRATIVELY WITH THE APPROVAL OF THE COUNTY AND FIRE AUTHORITY HAVING JURISDICTION OVER THE PROJECT.
  - A SYSTEM IDENTIFICATION SIGN SHALL BE LOCATED AT THE GATE ENTRANCE SIGN SHALL BE 12"x18". SIGN SHALL LIST NAME OF SITE AND CONTACT INFORMATION AS PROVIDED BY SEDE.
  - PRIVATE PROPERTY AND TRESPASSING AND HIGH VOLTAGE SIGNS SHALL BE LOCATED AT THE GATE ENTRANCE AND EVERY 60' MINIMUM ON FENCE. THE SIGN SHALL BE 10"x14". MISCELLANEOUS INTERIOR DIRECTIONAL AND SAFETY STORAGE ARE PERMITTED.
  - OUTDOOR LIGHTING CIRCUITS SHALL INCORPORATE DAWN-TO-DAWN PHOTOCELL CONTROLLERS, OCCUPANCY SENSORS AND/OR SWITCHES AS APPROPRIATE.
  - A METEOROLOGICAL (MET) STATION SHALL BE LOCATED ADJACENT TO THE INVERTER/EQUIPMENT PAD.

LEGEND

- PROPERTY BOUNDARY
- EXISTING EASEMENT
- RIGHT-OF-WAY
- MUP BOUNDARY (27.1 AC)
- SETBACK LINE
- PROPOSED 7" CHAIN-LINK FENCE #7 SLATS (8" MAX.)
- PROPOSED ACCESS GATE
- EXISTING AC PAVEMENT
- PROPOSED AC PAVEMENT
- PROPOSED FIRE ACCESS ROAD-ALL WEATHER (WIDTH PER PLAN)
- EXISTING OVERHEAD POWERLINE
- EXISTING POWER POLE
- PROPOSED UNDERGROUND INTERCONNECTION
- PROPOSED PV PANEL
- PROPOSED INVERTER/TRANSFORMER PAD (1)
- 30' FUEL MODIFICATION ZONE UNLESS OTHERWISE NOTED
- VIDEO CAMERA ON TO POLE (4)
- FY 5/8
- RY 5/8
- EXT 5/8
- INT 5/8
- AGRICULTURAL MITIGATION (5.51 AC)

SHEET INDEX

- SHEET 1 - TITLE SHEET/PLOT PLAN
- SHEET 2 - ELEVATIONS/DETAILS
- SHEET 3 - LANDSCAPE PLAN

OWNER/APPLICANT:  
 M.P. GRANGER LLC  
 17801 VON KARMAN AVENUE, SUITE 1000  
 IRVINE, CA 92614  
 CONTACT: PATRICK BROWN  
 PHONE: (949) 733-2849

ASSESSOR PARCEL NUMBER

129-182-07

LEGAL DESCRIPTION

ALL THOSE PORTIONS OF THE WEST HALF OF THE NE QUARTER SECTION 35 TOWNSHIP 10 SOUTH, RANGE 2 WEST, SAN BERNARDINO BASE AND MERIDIAN IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), EPOCH MGRS 2007, CP95 2011), ZONE 8 BASED LOCALLY UPON CONTROL STATIONS #478 & #479, PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC) WITH A BEARING OF S 30°43'25" E.

BENCHMARK

STATION NAME: 12925 PER RECORD OF SURVEY 1789 ROAD 2 BRASS DISK STAMPED S -81-1930 FLUSH IN BOLLER  
 ELEVATION = 1679.00 DATUM: NAVD83

SITE ADDRESS

NE CORNER OF MESA CREST RD AND AVENIDA ANNALIE VALLEY CENTER CA 92082

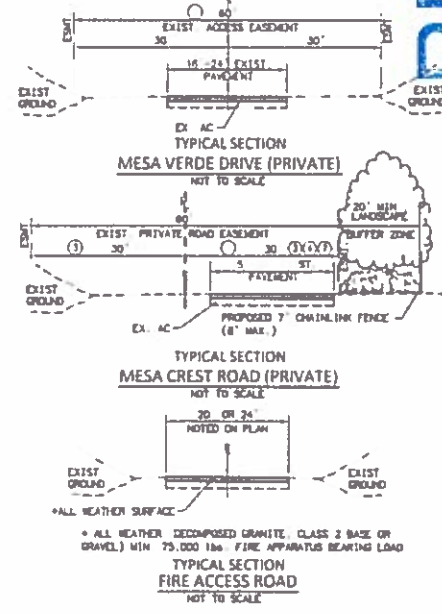
EXISTING EASEMENTS O REMAIN

| DESCRIPTION  | DOC. #                  |
|--|-------------------------|
| PRIVATE ROAD & PUBLIC UTILTY POLE#1 BK. 7165 PG. 594 7 |                         |
| PUBLIC UTILITIES                                       | DNTR 6178 1             |
| SOME PUBLIC UTILITIES                                  | DNTR 63-285792 12/28/87 |
| SOME PUBLIC UTILITIES                                  | DNTR 63-119658 4/14     |
| PRIVATE ROAD AND PUBLIC UTILITY                        | 65-167501 5/1           |

STEWART TITLE COMPANY PRELIMINARY REPORT ORDER NUMBER 011800-182713, DATED 4/26/2015 PARCEL ①②③

ZONING

| ZONE                     |      |
|--------------------------|------|
| USE REGULATIONS          | A72  |
| ANIMAL REGULATIONS       | N    |
| DEVELOPMENT REGULATIONS  |      |
| DENSITY                  | -    |
| LOT SIZE                 | 2 AC |
| BUILDING TYPE            | C    |
| MAXIMUM FLOOR AREA       | -    |
| FLOOR AREA RATIO         | -    |
| HEIGHT                   | 8    |
| LOT COVERAGE             | -    |
| SETBACK                  | C    |
| OVERLAP                  | -    |
| SPECIAL AREA REGULATIONS | A    |



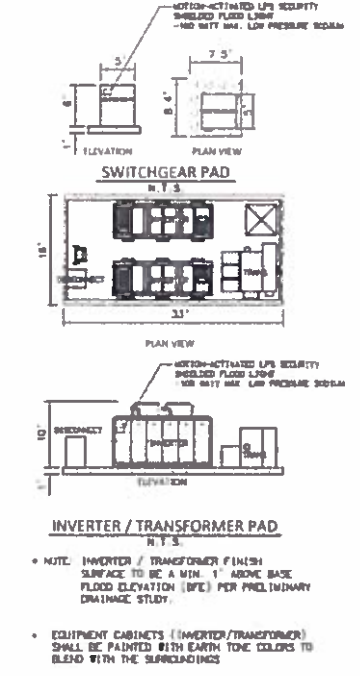
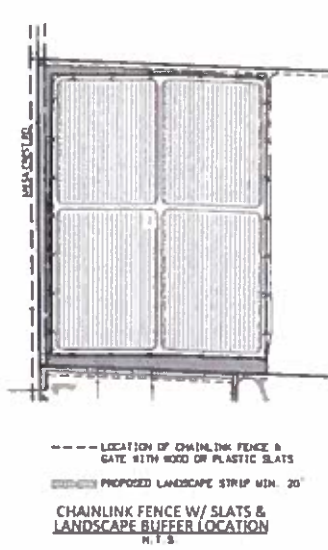
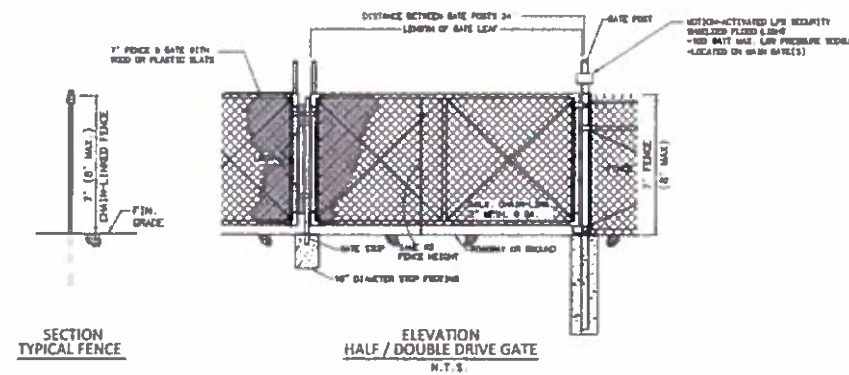
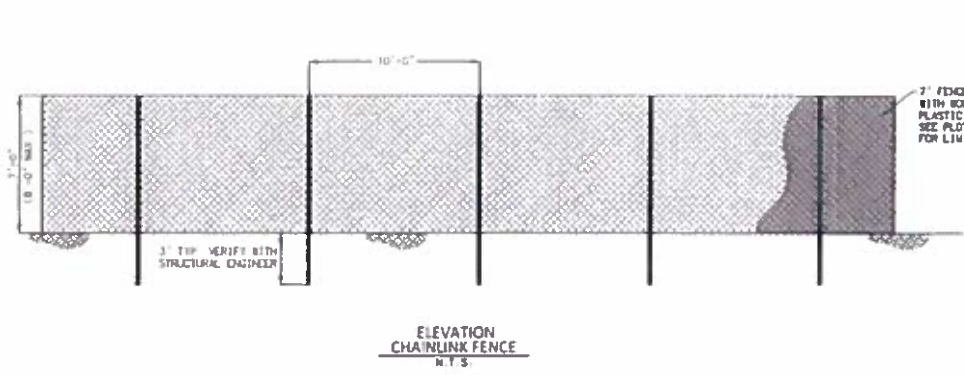
GRANGER SOLAR PHOTOVOLTAIC SOLAR FARM  
 COUNTY OF SAN DIEGO, CA  
 MAJOR USE PERMIT

TITLE SHEET / PLOT PLAN

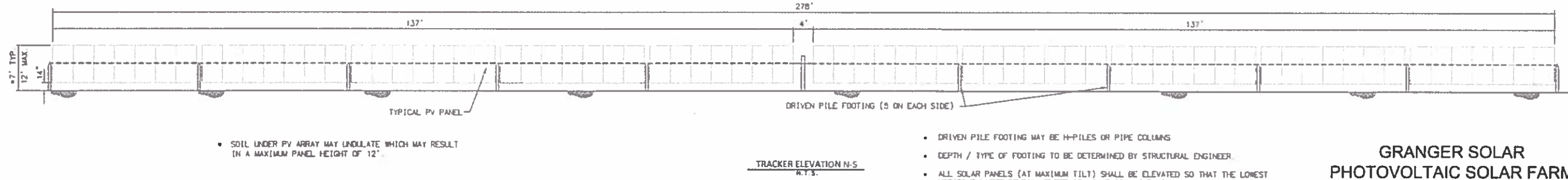
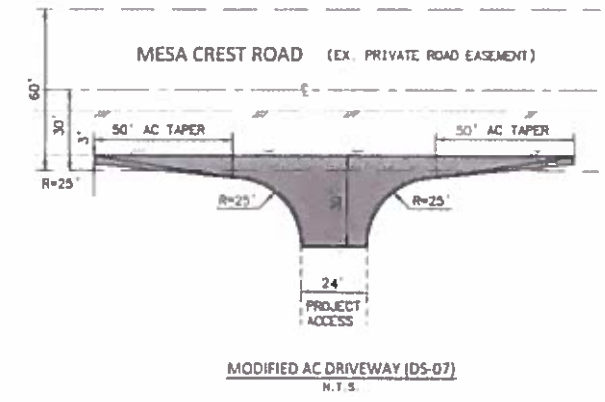
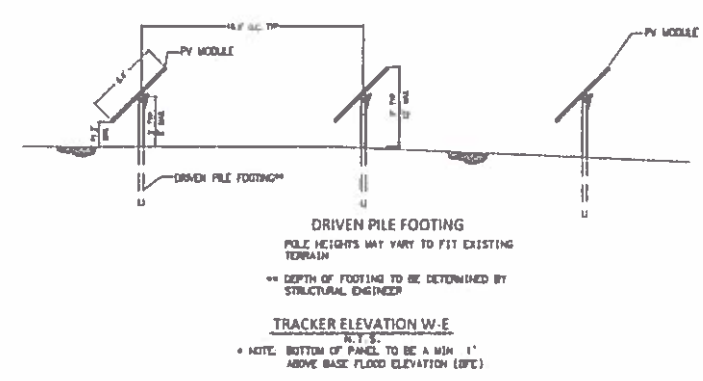
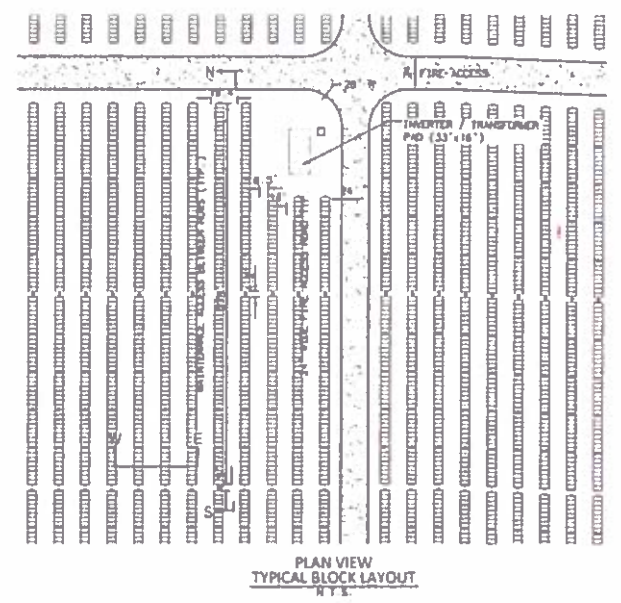
SEPTEMBER 8, 2015  
 SHEET 1 OF 3

Michael Baker  
 8750 Champaign Road Blvd  
 San Diego, CA 92126  
 Phone: (619) 614 8000  
 USA-CA@MBP.COM





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 CHAMPAIGN CO. P & Z DEPARTMENT



• SOIL UNDER PV ARRAY MAY UNDULATE WHICH MAY RESULT IN A MAXIMUM PANEL HEIGHT OF 12"

- DRIVEN PILE FOOTING MAY BE H-PILES OR PIPE COLUMNS
- DEPTH / TYPE OF FOOTING TO BE DETERMINED BY STRUCTURAL ENGINEER
- ALL SOLAR PANELS (AT MAXIMUM TILT) SHALL BE ELEVATED SO THAT THE LOWEST HORIZONTAL STRUCTURAL MEMBER IS AT LEAST ONE FOOT ABOVE THE BASE FLOOD ELEVATION (BFE) PER PRELIMINARY DRAINAGE STUDY.

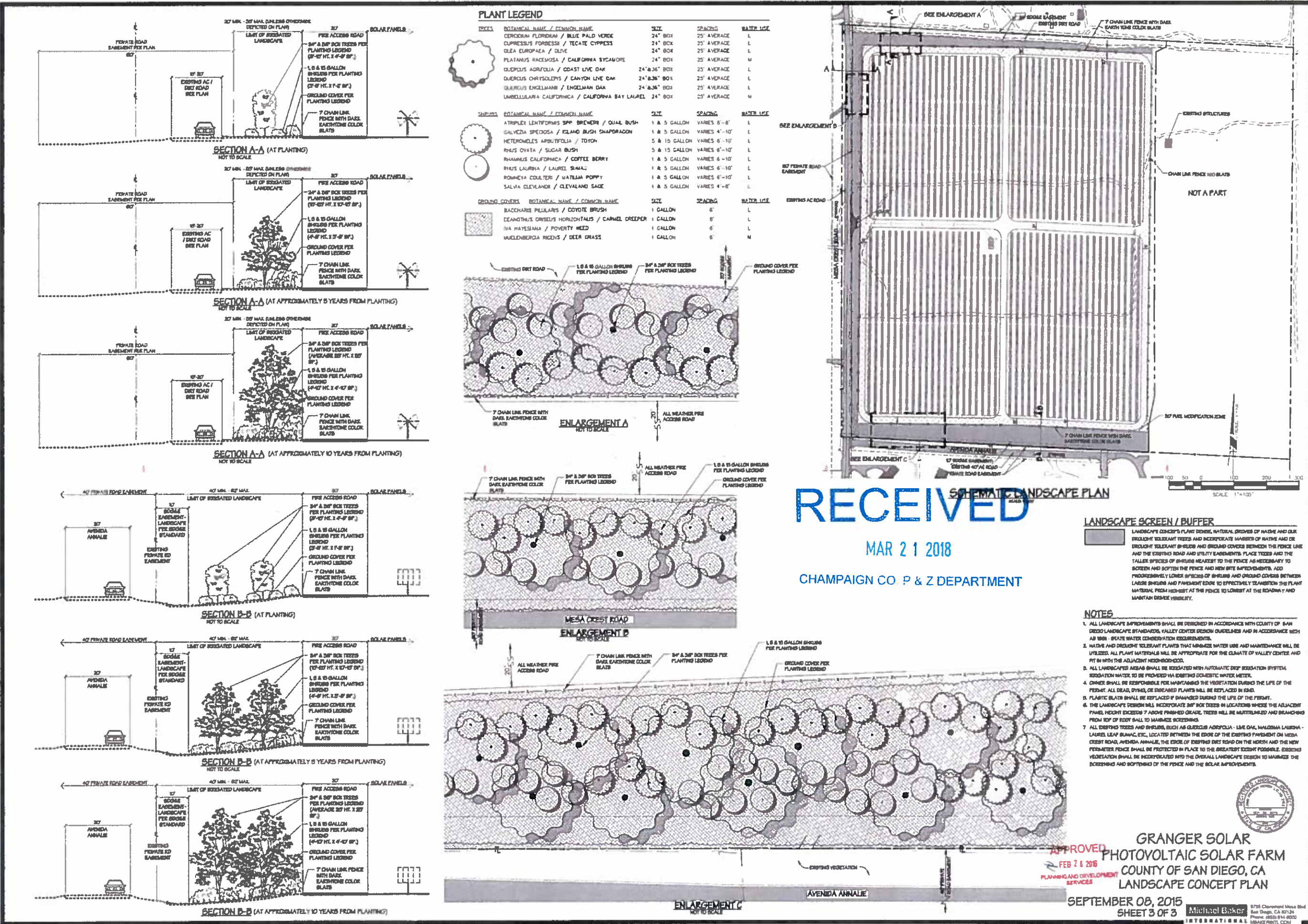
APPROVED  
 FEB 26 2016  
 PLANNING AND DEVELOPMENT SERVICES

**GRANGER SOLAR PHOTOVOLTAIC SOLAR FARM**  
 COUNTY OF SAN DIEGO, CA  
 MAJOR USE PERMIT

ELEVATIONS/DETAILS  
 SEPTEMBER 8 2015  
 SHEET 2 OF 3  
 Michael Baker INTERNATIONAL  
 9756 Channing Mesa Blvd  
 San Diego, CA 92134  
 Phone (619) 616-8000  
 USA@MBI.COM

14\_VP1814\_11430071\_CADD\PLAN\1814\_11430071-MP-02.DWG BUTTS: H/HEENLY 8/7/2015 12:05 PM

3 MW example



**PLANT LEGEND**

| TREES         | BOTANICAL NAME / COMMON NAME                    | SIZE          | SPACING       | WATER USE |
|---------------|---|---------------|---------------|-----------|
|               | CERODENDRUM FLORIDANUM / BLUE PALM VERDE        | 24" BOX       | 25' AVERAGE   | L         |
|               | CUPRESSUS FORBESII / TEACUP CYPRESS             | 24" BOX       | 25' AVERAGE   | L         |
|               | OLEA EUROPAEA / OLIVE                           | 24" BOX       | 25' AVERAGE   | L         |
|               | PLATANUS RACEMOSA / CALIFORNIA SYCAMORE         | 24" BOX       | 25' AVERAGE   | M         |
|               | QUERCUS AGRIFOLIA / COAST LIVE OAK              | 24" x 36" BOX | 25' AVERAGE   | L         |
|               | QUERCUS CHRYSOLEPS / CANYON LIVE OAK            | 24" x 36" BOX | 25' AVERAGE   | L         |
|               | QUERCUS ENGELMANNI / ENGELMANN OAK              | 24" x 36" BOX | 25' AVERAGE   | L         |
|               | UMBELLIFERA CALIFORNICA / CALIFORNIA BAY LAUREL | 24" BOX       | 25' AVERAGE   | M         |
| SHRUBS        | BOTANICAL NAME / COMMON NAME                    | SIZE          | SPACING       | WATER USE |
|               | ATRIplex LEPTOPHYLLA SPP BREWERY / QUAIL BUSH   | 1 & 5 GALLON  | VARIES 6'-8'  | L         |
|               | SALICHA SPECIOSA / ISLAND BUSH SNAPDRAGON       | 1 & 5 GALLON  | VARIES 4'-10' | L         |
|               | HETEROMELES ARBUTIFOLIA / TIDYON                | 5 & 15 GALLON | VARIES 6'-10' | L         |
|               | RHUS OVATA / SUGAR BUSH                         | 5 & 15 GALLON | VARIES 6'-10' | L         |
|               | RHAMNUS CALIFORNICA / COFFEE BERRY              | 1 & 5 GALLON  | VARIES 6'-10' | L         |
|               | RHUS LAURINA / LAUREL SHAL                      | 1 & 5 GALLON  | VARIES 6'-10' | L         |
|               | ROSMARINA COULTERI / MATELMA POPPY              | 1 & 5 GALLON  | VARIES 6'-10' | L         |
|               | SALVA CLEVELANDI / CLEVELAND SAGE               | 1 & 5 GALLON  | VARIES 4'-8'  | L         |
| GROUND COVERS | BOTANICAL NAME / COMMON NAME                    | SIZE          | SPACING       | WATER USE |
|               | BACCHARIS PILLULARIS / COYOTE BRUSH             | 1 GALLON      | 6'            | L         |
|               | DIANTHUS GRISSEUS HORIZONTALIS / CARNEL CREEPER | 1 GALLON      | 6'            | L         |
|               | IVA HAYESIANA / POVERTY WEED                    | 1 GALLON      | 6'            | L         |
|               | VALEBERBERGA REGENS / DEER GRASS                | 1 GALLON      | 6'            | M         |

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MAR 21 2018  
CHAMPAIGN CO. P & Z DEPARTMENT

**LANDSCAPE SCREEN / BUFFER**  
LANDSCAPE DESIGNER'S PLANT DENSE, NATURAL GROVES OF NATIVE AND DRIE PRODIGY TOLERANT TREES AND INCORPORATE MATURED OF NATIVE AND DRIE PRODIGY TOLERANT SHRUBS AND GROUND COVERS BETWEEN THE FENCE LINE AND THE EXISTING ROAD AND UTILITY EASEMENTS. PLACE TREES AND THE TALLER SPECIES OF SHRUBS NEAREST TO THE FENCE AS NECESSARY TO SCREEN AND SOFTEN THE FENCE AND NEW SITE IMPROVEMENTS. ADD PROGRESSIVELY LOWER SPECIES OF SHRUBS AND GROUND COVERS BETWEEN LARGE SHRUBS AND PAVEMENT EDGE TO EFFECTIVELY TRANSITION THE PLANT MATERIAL FROM HIGHEST AT THE FENCE TO LOWEST AT THE ROADWAY AND MAINTAIN DRIVE VISIBILITY.

- NOTES**
1. ALL LANDSCAPE IMPROVEMENTS SHALL BE DESIGNED IN ACCORDANCE WITH COUNTY OF SAN DIEGO LANDSCAPE STANDARDS, VALLEY CENTER DESIGN GUIDELINES AND IN ACCORDANCE WITH AB 1808 - STATE WATER CONSERVATION REQUIREMENTS.
  2. NATIVE AND DROUGHT-TOLERANT PLANTS THAT MINIMIZE WATER USE AND MAINTENANCE SHALL BE UTILIZED. ALL PLANT MATERIALS SHALL BE APPROPRIATE FOR THE CLIMATE OF VALLEY CENTER AND FIT WITH THE ADJACENT NEIGHBORHOOD.
  3. ALL LANDSCAPED AREAS SHALL BE IRRIGATED WITH AUTOMATIC Drip IRRIGATION SYSTEM. IRRIGATION WATER TO BE PROVIDED VIA EXISTING DOMESTIC WATER METERS.
  4. OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE VEGETATION DURING THE LIFE OF THE PERMIT. ALL DEAD, DYING, OR DAMAGED PLANTS SHALL BE REPLACED IN KIND.
  5. PLASTIC SLATS SHALL BE REPLACED IF DAMAGED DURING THE LIFE OF THE PERMIT.
  6. THE LANDSCAPE DESIGN WILL INCORPORATE 3/4" DIRT ROADS IN LOCATIONS WHERE THE ADJACENT PANEL HEIGHT EXCEEDS 7' ABOVE FINISHED GRADE. TREES WILL BE MAINTAINED AND BRANCHING FROM TOP OF BODY SHALL TO MAINTAIN SCREENING.
  7. ALL EXISTING TREES AND SHRUBS, SUCH AS QUERCUS AGRIFOLIA - LIVE OAK, MALOSMA LARINA - LAUREL LEAF SHALM, ETC., LOCATED BETWEEN THE EDGE OF THE EXISTING PAVEMENT ON MESA CREST ROAD, AVENIDA ANNALIE, THE EDGE OF EXISTING DIRT ROAD ON THE NORTH AND THE NEW PERMETER FENCE SHALL BE PROTECTED IN PLACE TO THE GREATEST EXTENT POSSIBLE. EXISTING VEGETATION SHALL BE INCORPORATED INTO THE OVERALL LANDSCAPE DESIGN TO MAINTAIN THE SCREENING AND SOFTENING OF THE FENCE AND THE SOLAR IMPROVEMENTS.

APPROVED  
FEB 26 2015  
PLANNING AND DEVELOPMENT SERVICES

GRANGER SOLAR PHOTOVOLTAIC SOLAR FARM  
COUNTY OF SAN DIEGO, CA  
LANDSCAPE CONCEPT PLAN

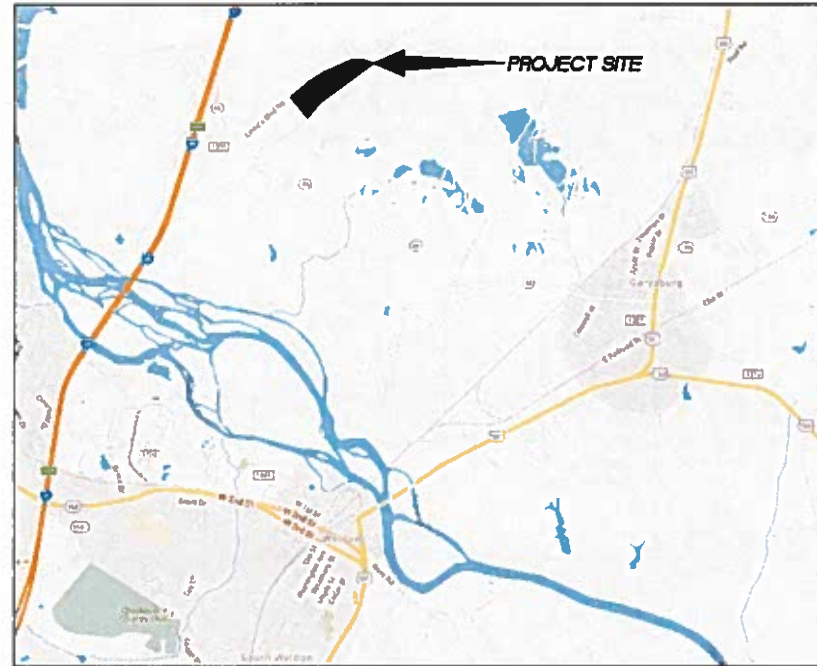
SEPTEMBER 08, 2015  
SHEET 3 OF 3

Michael Baker  
1705 Champaign Mesa Blvd  
San Diego, CA 92134  
Phone: 619-514-8000  
MBACORPINT.COM

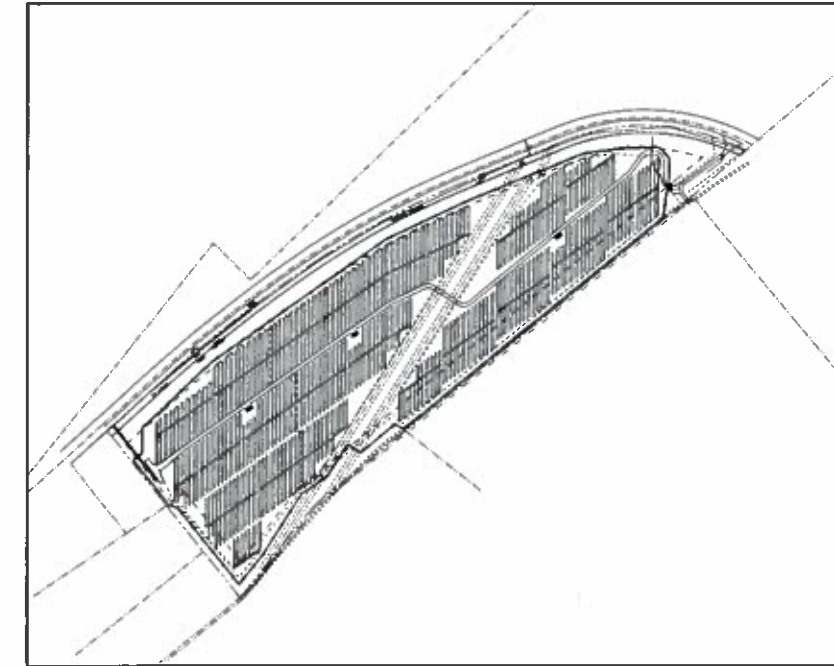
5 MW example

# HEMLOCK SOLAR

## 5 MWAC SINGLE-AXIS TRACKER PHOTOVOLTAIC ARRAYS LOWE'S BLVD RD., NORTHAMPTON CO., NC



VICINITY MAP  
SCALE NTS



SITE PLAN  
SCALE 1" = 300'

| BLYMYER DRAWING LIST |   |
|----------------------|---|
| CS-1                 | COVER SHEET   |
| C-100.0              | PHOTOVOLTAIC ARRAY SITE PLAN                        |
| C-101.0              | PHOTOVOLTAIC ARRAY GENERAL ARRANGEMENT              |
| C-102.0              | PHOTOVOLTAIC SUB-ARRAY ARRANGEMENT 1-6 DETAILS      |
| C-102.1              | PHOTOVOLTAIC SUB-ARRAY ARRANGEMENT 7-12 DETAILS     |
| C-102.2              | PHOTOVOLTAIC SUB-ARRAY ARRANGEMENT 13-17 DETAILS    |
| C-102.3              | PHOTOVOLTAIC SUB-ARRAY ARRANGEMENT 18-19 DETAILS    |
| C-103.0              | PHOTOVOLTAIC ARRAY PILE LOCATIONS                   |
| E-1.0                | GENERAL ELECTRICAL SYMBOLS, NOTES AND ABBREVIATIONS |
| E-2.0                | ONE LINE DIAGRAM 34.5KV DISTRIBUTION                |
| E-2.1                | PV BLOCK AC/DC SYSTEM SCHEMATIC                     |
| E-3.0                | PHOTOVOLTAIC ARRAY ELECTRICAL SITE PLAN             |
| E-3.0.1              | EASEMENT CROSSING                                   |
| E-3.0.2              | SWITCHYARD DETAILS                                  |
| E-3.1.1              | PV BLOCK 1.1 ELECTRICAL ARRANGEMENT                 |
| E-3.1.2              | PV BLOCK 1.2 ELECTRICAL ARRANGEMENT                 |
| E-3.1.3              | PV BLOCK 1.3 ELECTRICAL ARRANGEMENT                 |
| E-4.0                | Wiring Diagram                                      |
| E-4.1.1              | PV BLOCK 1.1 INVERTER 1.1.1 DC CONDUIT SCHEDULES    |
| E-4.1.2              | PV BLOCK 1.2 INVERTER 1.2.1 DC CONDUIT SCHEDULES    |
| E-4.1.3              | PV BLOCK 1.3 INVERTER 1.3.1 DC CONDUIT SCHEDULES    |
| E-5.1                | Wiring Configuration Types 1 thru 2                 |
| E-5.2                | Wiring Configuration Types 3 thru 4                 |
| E-5.3                | Wiring Configuration Types 5 thru 6                 |
| E-5.4                | Wiring Configuration Types 7 thru 8                 |
| E-5.5                | Wiring Configuration Types 9 thru 10                |
| E-5.6                | Wiring Configuration Types 11 thru 12               |
| E-5.7                | Wiring Configuration Types 13 thru 14               |
| E-5.8                | Wiring Configuration Types 15 thru 16               |
| E-5.9                | Wiring Configuration Types 17                       |
| E-6.0                | WARNING SIGNS                                       |
| E-6.1                | WARNING SIGNS                                       |
| E-7.0                | ELECTRICAL DETAILS                                  |
| E-7.1                | ELECTRICAL DETAILS                                  |
| E-7.2                | JUNCTION BOX PANEL DETAILS                          |
| E-8.0                | GROUNDING DETAILS                                   |
| E-8.1                | GROUNDING DETAILS COMPONENTS                        |
| E-8.2                | GROUNDING DETAILS FENCE                             |
| E-9.0                | TRENCHING SECTIONS                                  |
| E-9.1                | TRENCHING SECTIONS                                  |
| E-11.0               | EQUIPMENT SPECIFICATIONS                            |
| S-1                  | STRUCTURAL DETAILS                                  |
| S-2                  | STRUCTURAL DETAILS                                  |
| S-3                  | STRUCTURAL DETAILS                                  |

**ENGINEERS OF RECORD**  
GREG MAZUR - CIVIL ENGINEER, PE LICENSE #036022

**KEY PROJECT CONTACT INFORMATION**

BLYMYER ENGINEERS (ELECTRICAL/STRUCTURAL ENGINEERING)  
CHRIS GLEASON, PROJECT MANAGER  
1101 MARINA VILLAGE PARKWAY, STE 100  
ALAMEDA, CA 94501  
510-521-3773

SWINERTON RENEWABLE ENERGY (E.P.C.)  
DANNY CALLAGHER, ENGINEERING & PERMITTING MANAGER  
15 BUSINESS PARK WAY, SUITE 101  
SACRAMENTO, CA 95829  
916-205-7220

RAULEY-HORN (CIVIL ENGINEERING)  
CORY HOWELL, PROJECT MANAGER  
421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, NC 27601  
919-678-4190

**CODES AND STANDARDS**

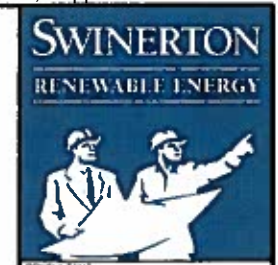
ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS, OR THEIR CURRENT EDITIONS, ALONG WITH ALL LOCAL AND STATE CODES:

2012 NC BUILDING CODE/2009 INTERNATIONAL BUILDING CODE  
2014 NATIONAL ELECTRICAL CODE  
2012 NC FIRE CODE/2009 INTERNATIONAL FIRE CODE

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CHAMPAIGN CO. P & Z DEPARTMENT



CONSULTANT

**BLYMYER ENGINEERS**  
1101 MARINA VILLAGE PARKWAY # 100  
ALAMEDA, CA 94501 510.521.3773



| REV # | DESCRIPTION             | DATE       |
|-------|-------------------------|------------|
| 1     | ISSUED FOR CONSTRUCTION | 02/26/2018 |

PROJECT TITLE

**HEMLOCK SOLAR  
SINGLE-AXIS TRACKER  
PHOTOVOLTAIC ARRAYS  
5 MWAC  
NORTHAMPTON CO., NC**

SHEET TITLE

COVER SHEET

|                  |                 |
|------------------|-----------------|
| JOB NO. 218016-1 | PROJECT MGR. CG |
| DRAWN BY: IDA    | SCALE: AS SHOWN |
| SHEET NUMBER     |                 |

CS-1

ISSUED FOR CONSTRUCTION

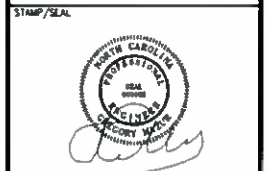
L:\Users\218016\My Documents\Blymyer\218016\_Swinerton\Blymyer\218016\_1\hemlock\_solar\218016\_1\_CS-1.dwg July 06, 2016 3:47PM LB#8

5 MW example

**SWINERTON**  
RENEWABLE ENERGY



CONSULTANT  
**BLMYER ENGINEERS**  
1101 MARINA VILLAGE PARKWAY # 100  
ALAMEDA, CA 94501 510.521.3773



| REV # | DESCRIPTION             | DATE       |
|-------|-------------------------|------------|
| 1     | ISSUED FOR CONSTRUCTION | 07/27/2018 |

PROJECT TITLE:  
**HEMLOCK SOLAR  
SINGLE-AXIS TRACKER  
PHOTOVOLTAIC ARRAYS  
5 MWAC  
NORTHAMPTON CO., NC**

SHEET TITLE:  
**PHOTOVOLTAIC ARRAY  
SITE PLAN**

|                  |                    |
|------------------|--------------------|
| JOB NO. 218018.1 | PROJECT MGR. CD    |
| DRAWN: KB        | SCALE: 1" = 100.0' |
| SHEET NUMBER     |                    |

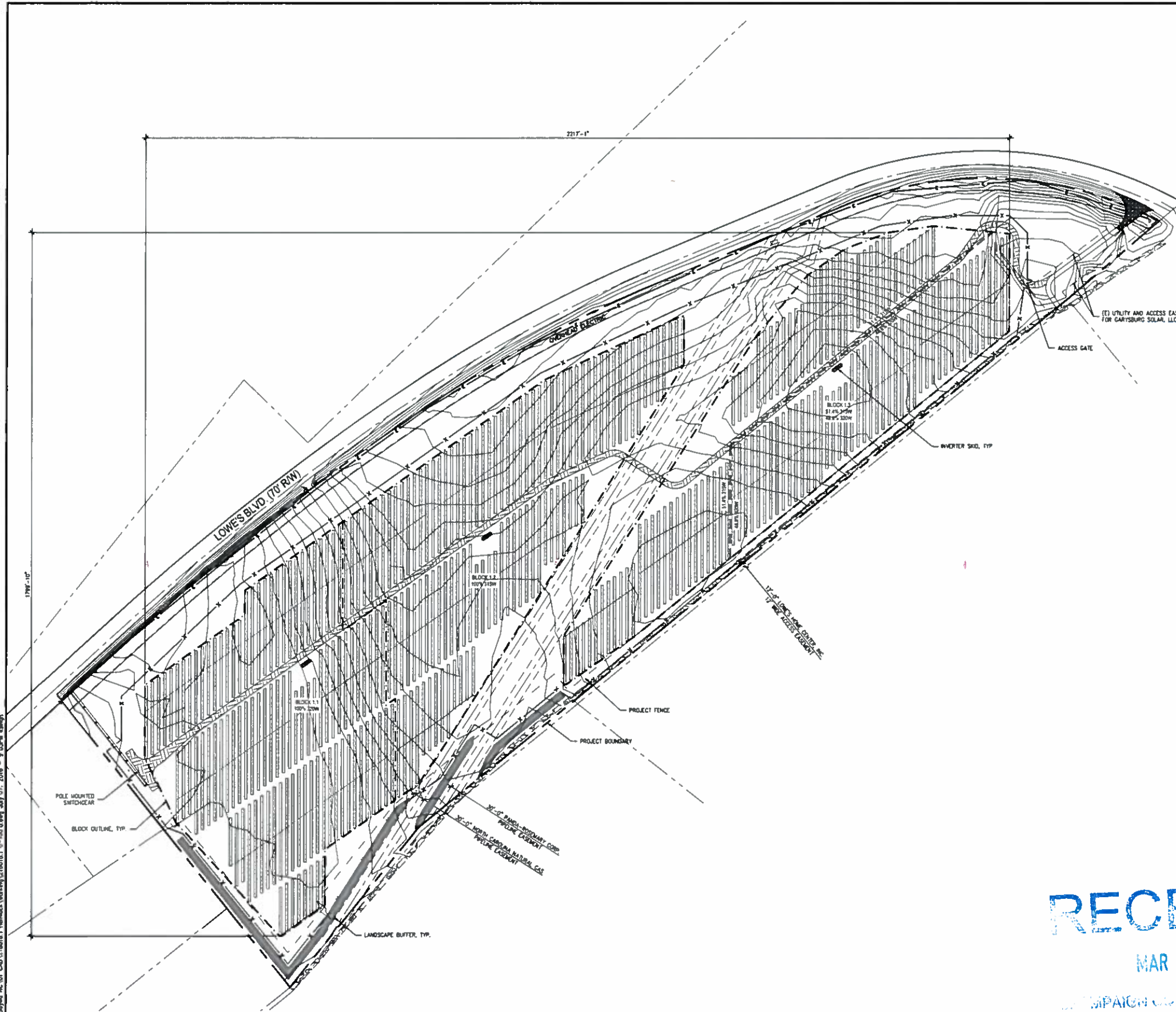
**G-100.0**

**SYSTEM SUMMARY**

|                          |                                |
|--------------------------|--------------------------------|
| PROJECT LOCATION         | NORTHAMPTON COUNTY, NC         |
| MAX ELEVATION            | 133'                           |
| DESIGN TEMPERATURE (MIN) | -14°C                          |
| STRING SIZE              | 18 MODULES                     |
| MODULE TYPE              | TRINA TSM-P014                 |
| MODULE WATTRACE          | 315 @ 320                      |
| MODULE QTY.              | 10,431 (315W)<br>10,203 (320W) |
| INVERTER                 | SMA SC 2200-US                 |
| INVERTER QTY.            | 3                              |
| SYSTEM SIZE (AC)         | 5,000 kW (AT PD)               |
| SYSTEM SIZE (DC)         | 6,551 kW                       |
| DC:AC RATIO              | 1.31                           |

**TRACKER SUMMARY**

|                          |                              |
|--------------------------|------------------------------|
| ARRAY TYPE               | ATI (V3) SINGLE-AXIS TRACKER |
| GROUND COVER RATIO       | 40.1% (16'-0")               |
| ARRAY TILT               | 0°                           |
| RANGE OF MOTION          | ± 5.2°                       |
| ARRAY AZIMUTH            | 180°                         |
| 76 MODULE ROW (EXTERIOR) | 40                           |
| 76 MODULE ROW (INTERIOR) | 16.3                         |
| 57 MODULE ROW (PS-EXT)   | 8                            |
| 57 MODULE ROW (PS-INT)   | 42                           |
| 57 MODULE ROW (PH-EXT)   | 10                           |
| 57 MODULE ROW (PH-INT)   | 8                            |
| 38 MODULE ROW (HS-EXT)   | 6                            |
| 38 MODULE ROW (HS-INT)   | 10                           |
| 38 MODULE ROW (HM-EXT)   | 11                           |
| 38 MODULE ROW (HM-INT)   | 6                            |
| MOTORS                   | 22                           |
| AX CONTROLLER            | 8                            |



**PHOTOVOLTAIC ARRAY SITE PLAN**  
SCALE: 1" = 100.0'



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CAMPAIGN C&P & Z DEPARTMENT

**ISSUED FOR CONSTRUCTION**

L:\msd\2018\18018\18018\_Swinerton\_Bryles\_NC\_01\_CAD\18018\_1\_Hemlock\_Solar\18018.1\_0-100\_Dwg\_Arty\_01.dwg - 9:25PM 4/17/2018

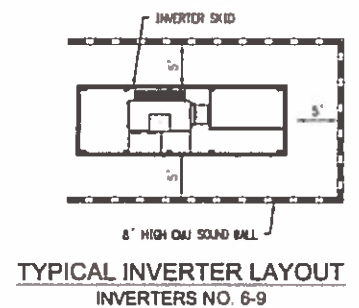
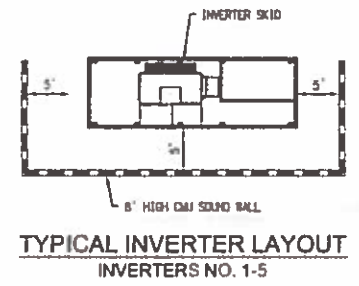
# RECEIVED

MAR 21 2018

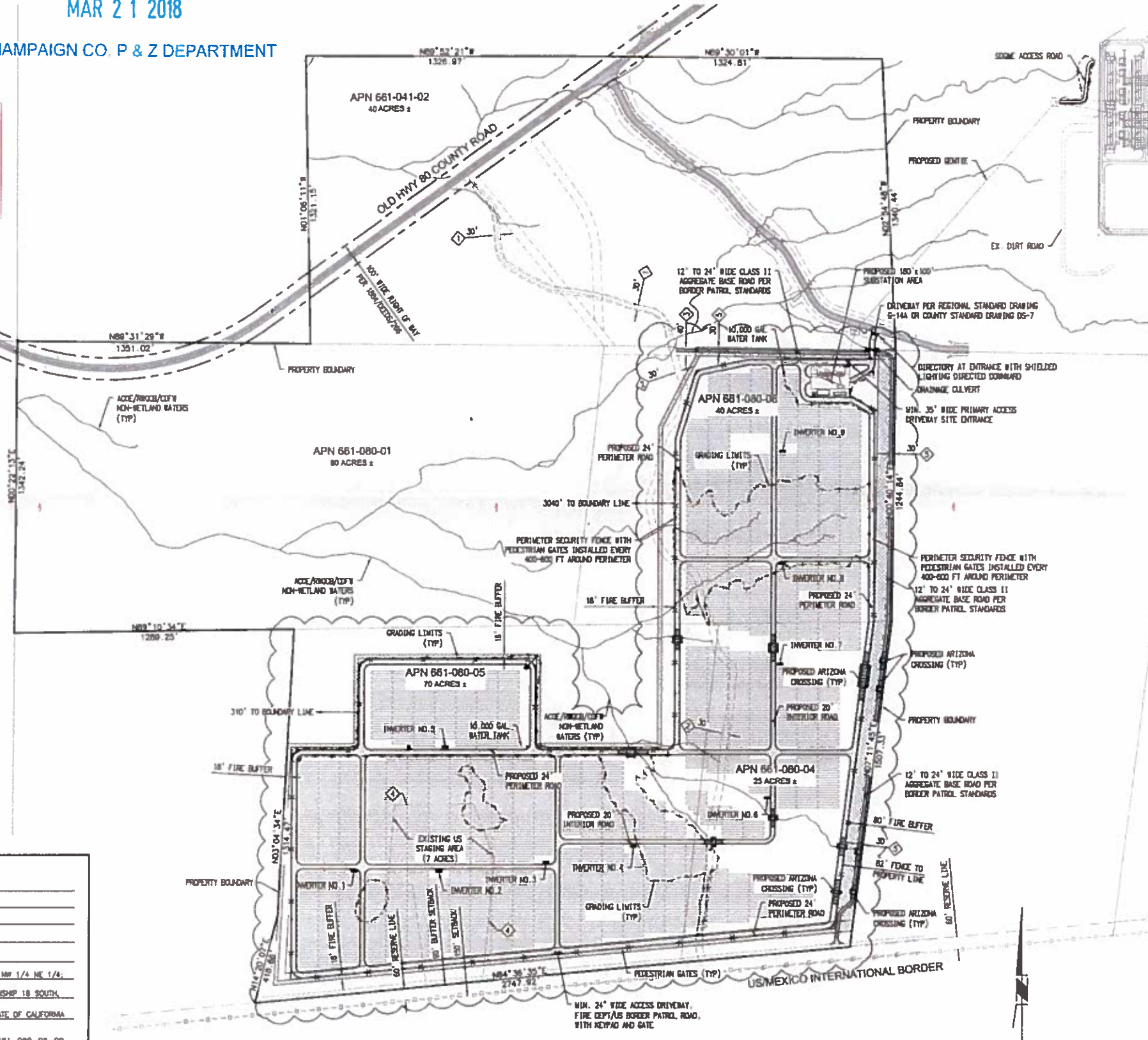
CHAMPAIGN CO. P & Z DEPARTMENT

## JACUMBA SOLAR MINOR DEVIATION TO MAJOR USE PERMIT: PDS2014-MUP-14-041

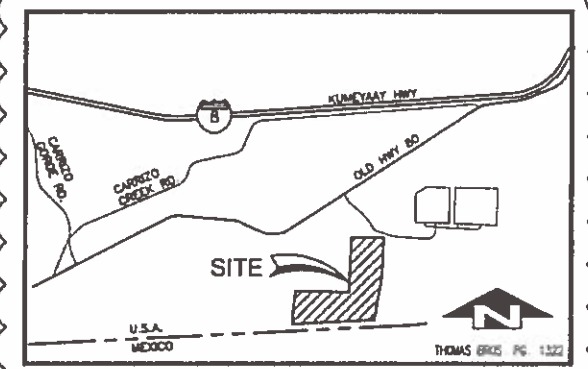
Project # PDS2014-MUP-14-041 (incl. 1 sheets)  
was approved on 02/24/2017 by  
The Director of Planning & Development Services  
The Zoning Administrator  
The San Diego County Planning Commission  
The San Diego County Board of Supervisors  
By *[Signature]* Planning Manager  
Name Title



**OWNER'S / PERMITTEE'S**  
NAME: JACUMBA SOLAR LLC, PATRICK BROWN (OWNER REP.)  
ADDRESS: 17801 VON KARMAN AVENUE  
SUITE 1050  
IRVINE, CA 92614  
TELEPHONE NO.: (619) 733-2849  
SHORT LEGAL DESCRIPTION: LOT 11, LOT 10, W. PORTION OF LOT 9; NW 1/4 NE 1/4, SE 1/4, NW 1/4, SW 1/4, NE 1/4 OF SECTION 11, TOWNSHIP 18 SOUTH, RANGE 8 EAST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA  
A.P.N. NO.: 661-080-04, 661-080-05-01, 661-080-05-02, 661-080-05-00  
SITE ADDRESS: 47311 OLD HIGHWAY 50, JACUMBA, CA 91934



**PLOT PLAN**  
SCALE: 1"=250'



**LEGEND**

| ITEM                                  | STANDARD DRAWING/DETAIL | SYMBOL |
|---------------------------------------|-------------------------|--------|
| PROPERTY LINE                         |                         | ---    |
| RIGHT OF WAY LINE                     |                         | ---    |
| LOT LINE                              |                         | ---    |
| EASEMENT                              |                         | ---    |
| AC PAVING (3" AC OVER 7" CL. 11 BASE) |                         | ---    |
| 6" CLASS 11 AGGREGATE BASE            |                         | ---    |
| ARIZONA CROSSING                      |                         | ---    |
| FIRE BUFFER                           |                         | ---    |
| GRADING LIMITS                        |                         | ---    |
| CHAIN LINK FENCE                      |                         | ---    |
| WALK GATE                             |                         | ---    |
| PHOTOVOLTAIC PANELS                   |                         | ---    |
| SMA MODEL INVERTER (9'x8'x5')         |                         | ---    |
| WITH 6' HIGH CMU SOUND WALL           |                         | ---    |
| EXISTING SWALE                        |                         | ---    |

**CUMULATIVE CHANGE TABLE**

| PROJECT NO.        | APPROVED COVERAGE (ACRES) | DESCRIPTION  | PERCENT CHANGE (%) |
|--------------------|---------------------------|--|--------------------|
| PDS2014-MUP-14-041 | 103 ACRES                 | PV PANELS, INVERTERS, SUBSTATION ACCESS ROADS & M.P. BOUNDARY                    | BASELINE           |
| PDS2014-MUP-14-041 | 103 ACRES                 | REVISED PV PANELS, INVERTERS, PERIMETER ROADS, DRAINAGE IMPROVEMENTS AND GRADING | -5%                |

- EXISTING EASEMENTS**
- AN EASEMENT, 30 FEET WIDE, GRANTED TO UNITED STATES OF AMERICA FOR ACCESS AND RIGHT-OF-WAY PER DOCUMENT RECORDED JULY 27, 2011 AS DOCUMENT NO. 2011-030783, O.R.
  - AN EASEMENT, 30 FEET WIDE, GRANTED TO UNITED STATES OF AMERICA FOR RIGHT-OF-WAY PURPOSES PER DOCUMENT RECORDED JANUARY 29, 2010 AS DOCUMENT NO. 2010-004700, O.R.
  - AN EASEMENT, 40 FEET WIDE, FOR ROAD AND UTILITY PURPOSES PER DOCUMENT RECORDED MAY 25, 1979, AS DOCUMENT NO. 79-217474, O.R.
  - AN EASEMENT, 30 FEET WIDE, GRANTED TO UNITED STATES OF AMERICA FOR RIGHT-OF-WAY PER DOCUMENT RECORDED FEBRUARY 7, 2011, AS DOCUMENT NO. 2011-007164, O.R.

- PROPOSED EASEMENTS**
- A PROPOSED EASEMENT, 30 FEET WIDE, FOR ACCESS BY THE UNITED STATES GOVERNMENT.

**EARTHWORK QUANTITIES**

|            |        |             |
|------------|--------|-------------|
| EXCAVATION | 20,000 | CUBIC YARDS |
| FILL       | 20,000 | CUBIC YARDS |
| IMPORT     | 0      | CUBIC YARDS |
| EXPORT     | 0      | CUBIC YARDS |

- GENERAL NOTE:**
- PROPOSED 6" CMU WALLS ARE SHOWN ON THE PLOT PLAN TO MITIGATE AND REDUCE NOISE IMPACTS ASSOCIATED WITH THE PROJECT INVERTERS. THIS MITIGATION CAN BE FURTHER MODIFIED/REDUCED, IF A NOISE ANALYSIS IS PERFORMED AND APPROVED BY PDS SHOWING THE NOISE IMPACTS HAVE BEEN REDUCED OR ELIMINATED.
  - REFER TO ORIGINAL MAP FOR ADDITIONAL ROAD SECTIONS AND FENCING DETAILS NOT SHOWN HERE.

JACUMBA SOLAR  
COUNTY OF SAN DIEGO  
PLOT PLAN  
ISSUED: 02/24/2017

**Michael Baker**  
INTERNATIONAL  
9750 Clearmont Mesa Boulevard  
San Diego, CA 92124  
Phone: (619) 814-8000 • MB@BAKERINTL.COM

20 MW example

H:\PDATA\157893\CADD\LAND\EXHIBITS\JACUMBA - MUP PLOT PLAN.DWG - ARIAS, PEDRO 2/24/2017 3:10 PM

## Susan Burgstrom

---

**From:** John Hall  
**Sent:** Tuesday, March 20, 2018 3:23 PM  
**To:** Susan Burgstrom  
**Subject:** FW: Solar Installation Per State

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FYI

---

**From:** Patrick Brown [mailto:Patrick.Brown@baywa-re.com]  
**Sent:** Tuesday, March 20, 2018 3:05 PM  
**To:** John Hall <jhall@co.champaign.il.us>  
**Subject:** Solar Installation Per State

MAR 20 2018

CHAMPAIGN CO P & Z DEPARTMENT

Hello John,

Per the request from the ZBA, here is a link to the Solar Trade group SEIA on the amount of solar in Illinois. Please let me know if you need anything else on this.

<https://www.seia.org/state-solar-policy/illinois-solar>

Patrick Brown  
Director of Development



BayWa r.e. Solar Projects LLC  
17901 Von Karman Avenue Suite 1050 | Irvine | CA 92614, USA

C +1 619 733 2649  
[patrick.brown@baywa-re.com](mailto:patrick.brown@baywa-re.com)  
[www.baywa-re.us](http://www.baywa-re.us)

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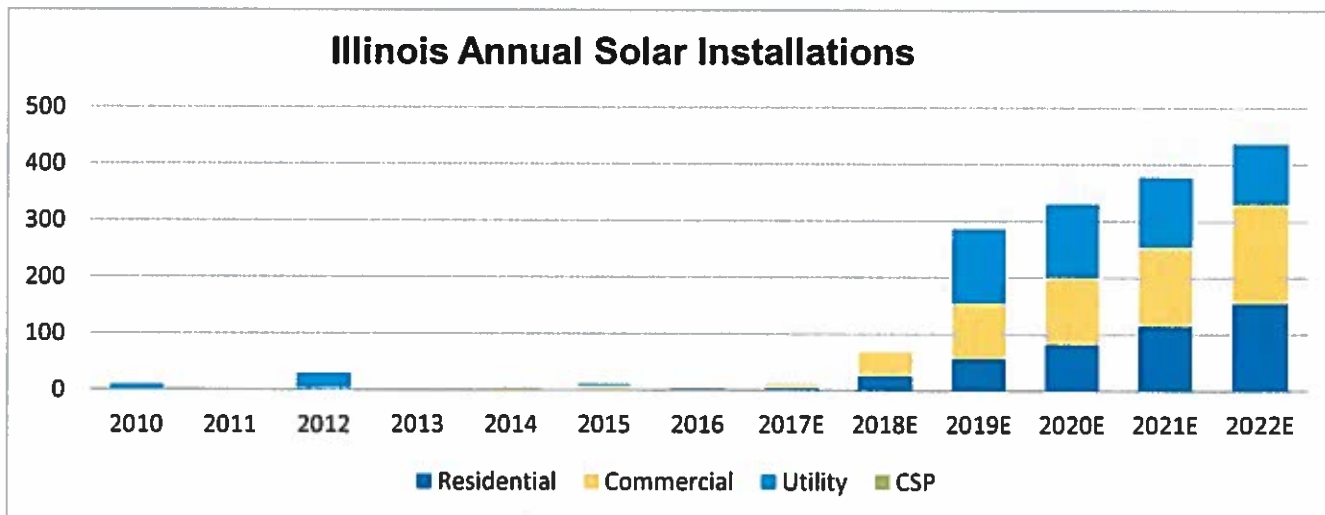
## AT A GLANCE

- **Solar Installed:** 83.8 MW (13.5 MW in 2017)<sup>i</sup>
- **National Ranking:** 33rd (41st in 2017)
- **State Homes Powered by Solar:** 13,000
- **Percentage of State's Electricity from Solar:** 0.06%<sup>ii</sup>
- **Solar Jobs and Ranking:** 3,570 (20th in 2017)<sup>iii</sup>
- **Solar Companies in State:** 318 companies total; 65 Manufacturers, 111 Installers/Developers, 134 Others<sup>iv</sup>
- **Total Solar Investment in State:** \$230.62 million (\$27.52 million in 2017)
- **Price Declines:** 52% over last 5 years
- **Growth Projections and Ranking:** 1,501 MW over next 5 years (ranks 13th)

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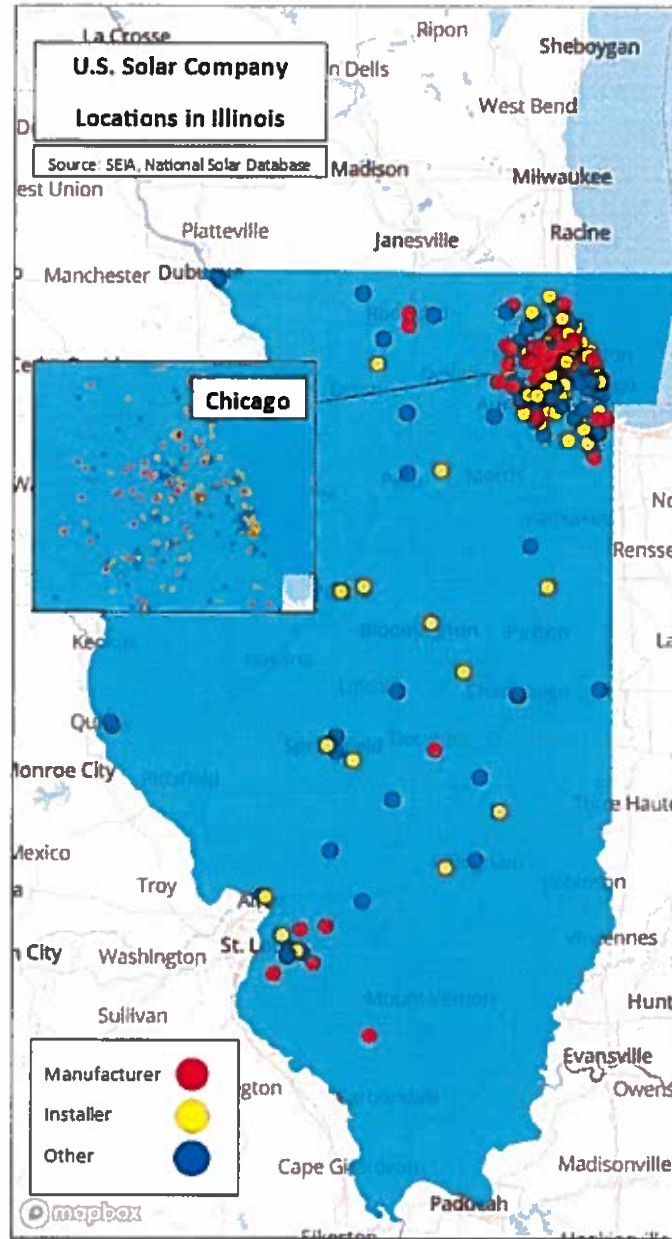
CHAMPAIGN CO. P & Z DEPARTMENT



## NOTABLE PROJECTS

- **IKEA Joliet Rooftop PV System** has the capacity to generate 2 MW of electricity – enough to power over 307 Illinois homes.<sup>v</sup>
- **IKEA** is one of the first major corporations to get involved in Illinois with their 1 MW project in Bolingbrook.<sup>vi</sup>
- At 1 MW, **City of Geneseo** in Geneseo is among the largest solar installations in Illinois. Completed in 2015, this photovoltaic project has enough electric capacity to power more than 184 homes.<sup>vii</sup>





<sup>i</sup> All data from SEIA/GTM Research *U.S. Solar Market Insight* unless otherwise noted: <http://www.seia.org/research-resources/us-solar-market-insight>

<sup>ii</sup> Energy Information Administration, *Electric Power Monthly*: <http://www.eia.gov/electricity/monthly/egeneration>

<sup>iii</sup> The Solar Foundation, *State Solar Jobs Census*: <http://www.thesolarfoundation.org/solar-jobs-census-states>

<sup>iv</sup> SEIA, *National Solar Database*: <http://www.seia.org/research-resources/national-solar-database>

<sup>v</sup> SEIA, *Major Solar Projects List*: <http://www.seia.org/research-resources/major-solar-projects-list>

<sup>vi</sup> Ibid

<sup>vii</sup> SEIA, *Solar Means Business*: <http://www.seia.org/campaign/solar-means-business-2016>

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MAR 20 2018

CHAMPAIGN CO. P & Z DEPARTMENT



## Goal 1 Planning and Public Involvement

Champaign County will attain a system of land resource management planning built on broad public involvement that supports effective decision making by the County.

### Goal 1 Objectives

#### **Objective 1.1** Guidance on Land Resource Management Decisions

Champaign County will consult the Champaign County Land Resource Management Plan (LRMP) that formally establishes County land resource management policies and serves as an important source of guidance for the making of County land resource management decisions.

#### **Objective 1.2** Updating Officials

Champaign County will annually update County Board members with regard to land resource management conditions within the County.

#### **Objective 1.3** Incremental Updates

Champaign County will update the LRMP, incrementally, on an annual or biannual basis to make minor changes to the LRMP or to adjust boundaries of LRMP Future Land Use Map areas to reflect current conditions, (e.g., Contiguous Urban Growth Area, or Rural Residential Area).

#### **Objective 1.4** Comprehensive Updates

Champaign County will comprehensively update the LRMP at a regular interval of no more than 15 or less than 10 years, to allow for the utilization of available updated census data and other information.

### Goal 1 Objectives and Policies

#### **Objective 1.1** Guidance on Land Resource Management Decisions

Champaign County will consult the LRMP that formally establishes County land resource management policies and serves as an important source of guidance for the making of County land resource management decisions.

#### **Objective 1.2** Updating Officials

Champaign County will annually update County Board members with regard to land resource management conditions within the County.

##### **Policy 1.2.1**

County planning staff will provide an annual update to County Board members with regard to land resource management conditions within the County.

#### **Objective 1.3** Incremental Updates

Champaign County will update the LRMP, incrementally, on an annual or biannual basis to make minor changes to the LRMP or to adjust boundaries of LRMP Future Land Use Map areas to reflect current conditions, (e.g., Contiguous Urban Growth Area, or Rural Residential Area).

##### **Policy 1.3.1**

ELUC will recommend minor changes to the LRMP after an appropriate opportunity for public input is made available.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.



### **Objective 1.4 Comprehensive Updates**

Champaign County will comprehensively update the LRMP at a regular interval of no more than 15 or less than 10 years, to allow for the utilization of available updated census data and other information.

#### **Policy 1.4.1**

A Steering Committee that is broadly representative of the constituencies in the County but weighted towards the unincorporated area will oversee comprehensive updates of the LRMP.

#### **Policy 1.4.2**

The County will provide opportunities for public input throughout any comprehensive update of the LRMP.

## **Goal 2 Governmental Coordination**

Champaign County will collaboratively formulate land resource and development policy with other units of government in areas of overlapping land use planning jurisdiction.

### **Goal 2 Objectives**

#### **Objective 2.1 Local and Regional Coordination**

Champaign County will coordinate land resource management planning with all County jurisdictions and, to the extent possible, in the larger region.

#### **Objective 2.2 Information Sharing**

Champaign County will work cooperatively with other units of government to ensure that the Geographic Information Systems Consortium and Regional Planning Commission have the resources to effectively discharge their responsibilities to develop, maintain and share commonly used land resource management data between local jurisdictions and County agencies that will help support land use decisions.

### **Goal 2 Objectives and Policies**

#### **Objective 2.1 Local and Regional Coordination**

Champaign County will coordinate land resource management planning with all County jurisdictions and, to the extent possible, in the larger region.

#### **Policy 2.1.1**

The County will maintain an inventory through the LRMP, of contiguous urban growth areas where connected sanitary service is already available or is planned to be made available by a public sanitary sewer service plan, and development is intended to occur upon annexation.

#### **Policy 2.1.2**

The County will continue to work to seek a county-wide arrangement that respects and coordinates the interests of all jurisdictions and that provides for the logical extension of municipal land use jurisdiction by annexation agreements.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.



### **Policy 2.1.3**

The County will encourage municipal adoption of plan and ordinance elements which reflect mutually consistent (County and municipality) approach to the protection of best prime farmland and other natural, historic, or cultural resources.

### **Objective 2.2 Information Sharing**

Champaign County will work cooperatively with other units of government to ensure that the Geographic Information Systems Consortium and Regional Planning Commission have the resources to effectively discharge their responsibilities to develop, maintain and share commonly used land resource management data between local jurisdictions and County agencies that will help support land use decisions.

## **Goal 3 Prosperity**

Champaign County will encourage economic growth and development to ensure prosperity for its residents and the region.

### **Goal 3 Objectives**

#### **Objective 3.1 Business Climate**

Champaign County will seek to ensure that it maintains comparable tax rates and fees, and a favorable business climate relative to similar counties.

#### **Objective 3.2 Efficient County Administration**

Champaign County will ensure that its regulations are administrated efficiently and do not impose undue costs or delays on persons seeking permits or other approvals.

#### **Objective 3.3 County Economic Development Policy**

Champaign County will maintain an updated Champaign County Economic Development Policy that is coordinated with and supportive of the LRMP.

## **Goal 4 Agriculture**

Champaign County will protect the long term viability of agriculture in Champaign County and its land resource base.

### **Goal 4 Objectives**

#### **Objective 4.1 Agricultural Land Fragmentation and Conservation**

Champaign County will strive to minimize the fragmentation of the County's agricultural land base and conserve farmland, generally applying more stringent development standards on best prime farmland.

#### **Objective 4.2 Development Conflicts with Agricultural Operations**

Champaign County will require that each *discretionary review* development will not interfere with agricultural operations.

continued

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.

**Objective 4.3 Site Suitability for Discretionary Review Development**

Champaign County will require that each *discretionary review* development is located on a suitable site.

**Objective 4.4 Regulations for Rural Residential Discretionary Review**

Champaign County will update County regulations that pertain to rural residential *discretionary review* developments to best provide for site specific conditions by 2010.

**Objective 4.5 LESA Site Assessment Review and Updates**

By the year 2012, Champaign County will review the Site Assessment portion of the Champaign County Land Evaluation and Site Assessment System (LESA) for possible updates; thereafter, the County will periodically review the site assessment portion of LESA for potential updates at least once every 10 years.

**Objective 4.6 Protecting Productive Farmland**

Champaign County will seek means to encourage and protect productive farmland within the County.

**Objective 4.7 Right to Farm Resolution**

Champaign County affirms County Resolution 3425 pertaining to the right to farm in Champaign County.

**Objective 4.8 Locally Grown Foods**

Champaign County acknowledges the importance of and encourages the production, purchase, and consumption of locally grown food.

**Objective 4.9 Landscape Character**

Champaign County will seek to preserve the landscape character of the agricultural and *rural* areas of the County, and, at the same time, allow for potential *discretionary development* that supports agriculture or involves a product or service that is provided better in a *rural* area.

## Goal 4 Objectives and Policies

**Objective 4.1 Agricultural Land Fragmentation and Conservation**

Champaign County will strive to minimize the fragmentation of the County's agricultural land base and conserve farmland, generally applying more stringent development standards on *best prime farmland*.

**Policy 4.1.1**

Commercial agriculture is the highest and best use of land in the areas of Champaign County that are by virtue of topography, soil and drainage, suited to its pursuit. The County will not accommodate other land uses except under very restricted conditions or in areas of less productive soils.

**Policy 4.1.2**

The County will guarantee all landowners a *by right development* allowance to establish a non-agricultural use, provided that public health, safety and site development regulations (e.g., floodplain and zoning regulations) are met.

**Policy 4.1.3**

The *by right development* allowance is intended to ensure legitimate economic use of all property. The County understands that continued agricultural use alone constitutes a



reasonable economic use of *best prime farmland* and the *by right development* allowance alone does not require accommodating non-farm development beyond the *by right development* allowance on such land.

**Policy 4.1.4** The County will guarantee landowners of one or more lawfully created lots that are recorded or lawfully conveyed and are considered a *good zoning lot* (i.e., a lot that meets County zoning requirements in effect at the time the lot is created) the *by right development* allowance to establish a new single family dwelling or non-agricultural land use on each such lot, provided that current public health, safety and transportation standards are met.

**Policy 4.1.5**

a. The County will allow landowner by *right development* that is generally proportionate to tract size, created from the January 1, 1998 configuration of tracts on lots that are greater than five acres in area, with:

- 1 new lot allowed per parcel less than 40 acres in area;
- 2 new lots allowed per parcel 40 acres or greater in area provided that the total amount of acreage of *best prime farmland* for new by right lots does not exceed three acres per 40 acres; and
- 1 authorized land use allowed on each vacant *good zoning lot* provided that public health and safety standards are met.

b. The County will not allow further division of parcels that are 5 acres or less in size.

**Policy 4.1.6** Provided that the use, design, site and location are consistent with County policies regarding:

- i. suitability of the site for the proposed use;
- ii. adequacy of infrastructure and public services for the proposed use;
- iii. minimizing conflict with agriculture;
- iv. minimizing the conversion of farmland; and
- v. minimizing the disturbance of natural areas,

then,

a) on *best prime farmland*, the County may authorize discretionary residential development subject to a limit on total acres converted which is generally proportionate to tract size and is based on the January 1, 1998 configuration of tracts, with the total amount of acreage converted to residential use (inclusive of *by-right development*) not to exceed three acres plus three acres per each 40 acres (including any existing right-of-way), but not to exceed 12 acres in total; or

b) on *best prime farmland*, the County may authorize non-residential *discretionary development*; or

c) the County may authorize *discretionary review* development on tracts consisting of other than *best prime farmland*.

**Policy 4.1.7**

To minimize the conversion of *best prime farmland*, the County will require a maximum lot size limit on new lots established as *by right development* on *best prime farmland*.

**Policy 4.1.8**

The County will consider the LESA rating for farmland protection when making land use decisions regarding a *discretionary development*.

**Policy 4.1.9**

The County will set a minimum lot size standard for a farm residence on land used for agricultural purposes.



**Objective 4.2 Development Conflicts with Agricultural Operations**

Champaign County will require that each *discretionary review* development will not interfere with agricultural operations.

**Policy 4.2.1**

The County may authorize a proposed business or other non-residential *discretionary review* development in a *rural* area if the proposed development supports agriculture or involves a product or service that is provided better in a *rural* area than in an urban area.

**Policy 4.2.2**

The County may authorize *discretionary review* development in a *rural* area if the proposed development:

- a. is a type that does not negatively affect agricultural activities; or
- b. is located and designed to minimize exposure to any negative affect caused by agricultural activities; and
- c. will not interfere with agricultural activities or damage or negatively affect the operation of agricultural drainage systems, *rural* roads, or other agriculture-related infrastructure.

**Policy 4.2.3**

The County will require that each proposed *discretionary development* explicitly recognize and provide for the right of agricultural activities to continue on adjacent land.

**Policy 4.2.4**

To reduce the occurrence of agricultural land use and non-agricultural land use nuisance conflicts, the County will require that all *discretionary review* consider whether a buffer between existing agricultural operations and the proposed development is necessary.

**Objective 4.3 Site Suitability for Discretionary Review Development**

Champaign County will require that each *discretionary review* development is located on a suitable site.

**Policy 4.3.1**

On other than *best prime farmland*, the County may authorize a *discretionary review* development provided that the site with proposed improvements is *suited overall* for the proposed land use.

**Policy 4.3.2**

On *best prime farmland*, the County may authorize a *discretionary review* development provided the site with proposed improvements is *well-suited overall* for the proposed land use.

**Policy 4.3.3**

The County may authorize a *discretionary review* development provided that existing public services are adequate to support to the proposed development effectively and safely without undue public expense.

**Policy 4.3.4**

The County may authorize a *discretionary review* development provided that existing public infrastructure, together with proposed improvements, is adequate to support the proposed development effectively and safely without undue public expense.

**Policy 4.3.5**

On *best prime farmland*, the County will authorize a business or other non-residential use only if:

- a. it also serves surrounding agricultural uses or an important public need; and cannot be located in an urban area or on a less productive site; or
- b. the use is otherwise appropriate in a *rural* area and the site is very well suited to it.

**Objective 4.4** Regulations for Rural Residential *Discretionary* Review

Champaign County will update County regulations that pertain to *rural* residential *discretionary* review developments to best provide for site specific conditions by 2010.

**Objective 4.5** LESA Site Assessment Review and Updates

By the year 2012, Champaign County will review the Site Assessment portion of the LESA for possible updates; thereafter, the County will periodically review the site assessment portion of LESA for potential updates at least once every 10 years.

**Objective 4.6** Protecting Productive Farmland

Champaign County will seek means to encourage and protect productive farmland within the County.

**Policy 4.6.1** The County will utilize, as may be feasible, tools that allow farmers to permanently preserve farmland.

**Policy 4.6.2** The County will support legislation that promotes the conservation of agricultural land and related natural resources in Champaign County provided that legislation proposed is consistent with County policies and ordinances, including those with regard to landowners' interests.

**Policy 4.6.3** The County will implement the agricultural purposes exemption, subject to applicable statutory and constitutional restrictions, so that all full- and part-time farmers and retired farmers will be assured of receiving the benefits of the agricultural exemption even if some non-farmers receive the same benefits.

**Objective 4.7** Right to Farm Resolution

Champaign County affirms County Resolution 3425 pertaining to the right to farm in Champaign County.

**Objective 4.8** Locally Grown Foods

Champaign County acknowledges the importance of and encourages the production, purchase, and consumption of locally grown food.

**Objective 4.9** Landscape Character

Champaign County will seek to preserve the landscape character of the agricultural and *rural* areas of the County, and, at the same time, allow for potential *discretionary development* that supports agriculture or involves a product or service that is provided better in a *rural* area.

**Policy 4.9.1**

The County will develop and adopt standards to manage the visual and physical characteristics of *discretionary development* in *rural* areas of the County.





## Goal 5 Urban Land Use

Champaign County will encourage *urban development* that is compact and contiguous to existing cities, villages, and existing unincorporated settlements.

### Goal 5 Objectives

#### **Objective 5.1** Population Growth and Economic Development

Champaign County will strive to ensure that the preponderance of population growth and economic development is accommodated by new *urban development* in or adjacent to existing population centers.

#### **Objective 5.2** Natural Resources Stewardship

When new *urban development* is proposed, Champaign County will encourage that such development demonstrates good stewardship of natural resources

#### **Objective 5.3** Adequate Public Infrastructure and Services

Champaign County will oppose proposed new *urban development* unless adequate utilities, infrastructure, and *public services* are provided.

### Goal 5 Objectives and Policies

#### **Objective 5.1** Population Growth and Economic Development

Champaign County will strive to ensure that the preponderance of population growth and economic development is accommodated by new *urban development* in or adjacent to existing population centers.

##### **Policy 5.1.1**

The County will encourage new *urban development* to occur within the boundaries of incorporated municipalities.

##### **Policy 5.1.2**

- a. The County will encourage that only compact and contiguous *discretionary development* occur within or adjacent to existing villages that have not yet adopted a municipal comprehensive land use plan.
- b. The County will require that only compact and contiguous *discretionary development* occur within or adjacent to existing unincorporated settlements.

##### **Policy 5.1 3**

The County will consider municipal extra-territorial jurisdiction areas that are currently served by or that are planned to be served by an available public sanitary sewer service plan as contiguous urban growth areas which should develop in conformance with the relevant municipal comprehensive plans. Such areas are identified on the Future Land Use Map.

##### **Policy 5.1.4**

The County may approve *discretionary development* outside contiguous urban growth areas, but within municipal extra-territorial jurisdiction areas only if:

- a. the development is consistent with the municipal comprehensive plan and relevant municipal requirements;
- b. the site is determined to be *well-suited overall* for the development if on *best prime farmland* or the site is *suited overall*, otherwise; and
- c. the development is generally consistent with all relevant LRMP objectives and policies.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.

**Policy 5.1 5**

The County will encourage *urban development* to explicitly recognize and provide for the right of agricultural activities to continue on adjacent land.

**Policy 5.1.6**

To reduce the occurrence of agricultural land use and non-agricultural land use nuisance conflicts, the County will encourage and, when deemed necessary, will require discretionary development to create a sufficient buffer between existing agricultural operations and the proposed *urban development*.

**Policy 5.1.7**

The County will oppose new *urban development* or development authorized pursuant to a municipal annexation agreement that is located more than one and one half miles from a municipality's corporate limit unless the Champaign County Board determines that the development is otherwise consistent with the LRMP, and that such extraordinary exercise of extra-territorial jurisdiction is in the interest of the County as a whole.

**Policy 5.1.8**

The County will support legislative initiatives or intergovernmental agreements which specify that property subject to annexation agreements will continue to be under the ordinances, control, and jurisdiction of the County until such time that the property is actually annexed, except that within 1-1/2 miles of the corporate limit of a municipality with an adopted comprehensive land use plan, the subdivision ordinance of the municipality shall apply.

**Policy 5.1.9**

The County will encourage any new *discretionary development* that is located within municipal extra-territorial jurisdiction areas and subject to an annexation agreement (but which is expected to remain in the unincorporated area) to undergo a coordinated municipal and County review process, with the municipality considering any *discretionary development* approval from the County that would otherwise be necessary without the annexation agreement.

**Objective 5.2 Natural Resources Stewardship**

When new *urban development* is proposed, Champaign County will encourage that such development demonstrates good stewardship of natural resources.

**Policy 5.2.1**

The County will encourage the reuse and redevelopment of older and vacant properties within *urban land* when feasible.

**Policy 5.2 2**

The County will:

- a. ensure that *urban development* proposed on *best prime farmland* is efficiently designed in order to avoid unnecessary conversion of such farmland; and
- b. encourage, when possible, other jurisdictions to ensure that *urban development* proposed on *best prime farmland* is efficiently designed in order to avoid unnecessary conversion of such farmland.

**Policy 5.2.3**

The County will:

- a. require that proposed new *urban development* results in no more than minimal disturbance to areas with significant natural environmental quality; and



- b. encourage, when possible, other jurisdictions to require that proposed new *urban development* results in no more than minimal disturbance to areas with significant natural environmental quality.

### **Objective 5.3 Adequate Public Infrastructure and Services**

Champaign County will oppose proposed new *urban development* unless adequate utilities, infrastructure, and *public services* are provided.

#### **Policy 5.3.1**

The County will:

- a. require that proposed new *urban development* in unincorporated areas is sufficiently served by available *public services* and without undue public expense; and
- b. encourage, when possible, other jurisdictions to require that proposed new *urban development* is sufficiently served by available *public services* and without undue public expense.

#### **Policy 5.3.2**

The County will:

- a. require that proposed new *urban development*, with proposed improvements, will be adequately served by *public infrastructure*, and that related needed improvements to *public infrastructure* are made without undue public expense; and
- b. encourage, when possible, other jurisdictions to require that proposed new *urban development*, with proposed improvements, will be adequately served by *public infrastructure*, and that related needed improvements to *public infrastructure* are made without undue public expense.

#### **Policy 5.3.3**

The County will encourage a regional cooperative approach to identifying and assessing the incremental costs of public utilities and services imposed by new development.

## **Goal 6 Public Health and Public Safety**

Champaign County will ensure protection of the public health and public safety in land resource management decisions.

### **Goal 6 Objectives**

#### **Objective 6.1 Protect Public Health and Safety**

Champaign County will seek to ensure that *rural* development does not endanger public health or safety.

#### **Objective 6.2 Public Assembly Land Uses**

Champaign County will seek to ensure that public assembly, dependent population, and multifamily land uses provide safe and secure environments for their occupants.

#### **Objective 6.3 Development Standards**

Champaign County will seek to ensure that all new non-agricultural construction in the unincorporated area will comply with a building code by 2015.

#### **Objective 6.4 Countywide Waste Management Plan**

Champaign County will develop an updated Champaign County Waste Management Plan by 2015 to address the re-use, recycling, and safe disposal of wastes including: landscape waste; agricultural waste; construction/demolition debris; hazardous waste; medical waste; and municipal solid waste.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.



## Goal 6 Objectives and Policies

### **Objective 6.1** Protect Public Health and Safety

Champaign County will seek to ensure that development in unincorporated areas of the County does not endanger public health or safety.

#### **Policy 6.1.1**

The County will establish minimum lot location and dimension requirements for all new *rural* residential development that provide ample and appropriate areas for onsite wastewater and septic systems.

#### **Policy 6.1.2**

The County will ensure that the proposed wastewater disposal and treatment systems of *discretionary development* will not endanger public health, create nuisance conditions for adjacent uses, or negatively impact surface or groundwater quality.

#### **Policy 6.1.3**

The County will seek to prevent nuisances created by light and glare and will endeavor to limit excessive night lighting, and to preserve clear views of the night sky throughout as much of the County as possible.

#### **Policy 6.1.4**

The County will seek to abate blight and to prevent and rectify improper dumping.

### **Objective 6.2** Public Assembly Land Uses

Champaign County will seek to ensure that public assembly, dependent population, and multifamily land uses provide safe and secure environments for their occupants.

**Policy 6.2.1** The County will require public assembly, dependent population, and multifamily premises built, significantly renovated, or established after 2010 to comply with the Office of State Fire Marshal life safety regulations or equivalent.

**Policy 6.2.2** The County will require Champaign County Liquor Licensee premises to comply with the Office of State Fire Marshal life safety regulations or equivalent by 2015.

**Policy 6.2.3** The County will require Champaign County Recreation and Entertainment Licensee premises to comply with the Office of State Fire Marshal life safety regulations or equivalent by 2015.

### **Objective 6.3** Development Standards

Champaign County will seek to ensure that all new non-agricultural construction in the unincorporated area will comply with a building code by 2015.

### **Objective 6.4** Countywide Waste Management Plan

Champaign County will develop an updated Champaign County Waste Management Plan by 2015 to address the re-use, recycling, and safe disposal of wastes including: landscape waste; agricultural waste; construction/demolition debris; hazardous waste; medical waste; and municipal solid waste.



## Goal 7 Transportation

Champaign County will coordinate land use decisions in the unincorporated area with the existing and planned transportation infrastructure and services.

### Goal 7 Objectives

#### **Objective 7.1** Traffic Impact Analyses

Champaign County will consider traffic impact in all land use decisions and coordinate efforts with other agencies when warranted.

#### **Objective 7.2** Countywide Transportation System

Champaign County will strive to attain a countywide transportation network including a variety of transportation modes which will provide rapid, safe, and economical movement of people and goods.

### Goal 7 Objectives and Policies

#### **Objective 7.1** Traffic Impact Analyses

Champaign County will consider traffic impact in all land use decisions and coordinate efforts with other agencies when warranted.

##### **Policy 7.1.1**

The County will include traffic impact analyses in *discretionary review* development proposals with significant traffic generation.

#### **Objective 7.2** Countywide Transportation System

Champaign County will strive to attain a countywide transportation network including a variety of transportation modes which will provide rapid, safe, and economical movement of people and goods.

##### **Policy 7.2.1**

The County will encourage development of a multi-jurisdictional countywide transportation plan that is consistent with the LRMP.

##### **Policy 7.2.2**

The County will encourage the maintenance and improvement of existing County railroad system lines and services.

##### **Policy 7.2.3**

The County will encourage the maintenance and improvement of the existing County road system, considering fiscal constraints, in order to promote agricultural production and marketing.

##### **Policy 7.2.4**

The County will seek to implement the County's Greenways and Trails Plan.

##### **Policy 7.2.5**

The County will seek to prevent establishment of incompatible *discretionary development* in areas exposed to noise and hazards of vehicular, aircraft and rail transport.

##### **Policy 7.2.6**

The County will seek to protect *public infrastructure* elements which exhibit unique scenic, cultural, or historic qualities.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.

## Goal 8 Natural Resources

Champaign County will strive to conserve and enhance the County's landscape and natural resources and ensure their sustainable use.

### Goal 8 Objectives

#### **Objective 8.1 Groundwater Quality and Availability**

Champaign County will strive to ensure adequate and safe supplies of groundwater at reasonable cost for both human and ecological purposes.

#### **Objective 8.2 Soil**

Champaign County will strive to conserve its soil resources to provide the greatest benefit to current and future generations.

#### **Objective 8.3 Underground Mineral and Energy Resource Extraction**

Champaign County will work to ensure future access to its underground mineral and energy resources and to ensure that their extraction does not create nuisances or detract from the long-term beneficial use of the affected property.

#### **Objective 8.4 Surface Water Protection**

Champaign County will work to ensure that new development and ongoing land management practices maintain and improve surface water quality, contribute to stream channel stability, and minimize erosion and sedimentation.

#### **Objective 8.5 Aquatic and Riparian Ecosystems**

Champaign County will encourage the maintenance and enhancement of aquatic and riparian habitats.

#### **Objective 8.6 Natural Areas and Habitat**

Champaign County will encourage resource management which avoids loss or degradation of areas representative of the *pre-settlement environment* and other areas that provide habitat for native and game species.

#### **Objective 8.7 Parks and Preserves**

Champaign County will work to protect existing investments in *rural* parkland and natural area preserves and will encourage the establishment of new public *parks and preserves* and protected private lands.

#### **Objective 8.8 Air Pollutants**

Champaign County considers the atmosphere a valuable resource and will seek to minimize harmful impacts to it and work to prevent and reduce the discharge of ozone precursors, acid rain precursors, toxics, dust and aerosols that are harmful to human health.

#### **Objective 8.9 Natural Resources Assessment System**

Champaign County will, by the year 2016, adopt a natural resources specific assessment system that provides a technical framework to numerically rank land parcels based on local resource evaluation and site considerations, including: groundwater resources; soil and mineral resources; surface waters; aquatic and riparian ecosystems; natural areas; parks and preserves; known cultural resources; and air quality.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.



## Goal 8 Objectives and Policies

### Objective 8.1 Groundwater Quality and Availability

Champaign County will strive to ensure adequate and safe supplies of groundwater at reasonable cost for both human and ecological purposes.

#### Policy 8.1.1

The County will not approve *discretionary development* using on-site water wells unless it can be reasonably assured that an adequate supply of water for the proposed use is available without impairing the supply to any existing well user.

#### Policy 8.1.2

The County will encourage regional cooperation in protecting the quality and availability of groundwater from the Mahomet Aquifer.

#### Policy 8.1.3

As feasible, the County will seek to ensure that withdrawals from the Mahomet Aquifer and other aquifers do not exceed the long-term sustainable yield of the aquifer including withdrawals under potential drought conditions, particularly for shallow aquifers.

#### Policy 8.1.4

To the extent that distinct recharge areas are identified for any aquifers, the County will work to prevent development of such areas that would significantly impair recharge to the aquifers.

#### Policy 8.1.5

To the extent that groundwater in the County is interconnected with surface waters, the County will work to ensure that groundwater contributions to natural surface hydrology are not disrupted by groundwater withdrawals by *discretionary development*.

#### Policy 8.1.6

The County will encourage the development and refinement of knowledge regarding the geology, hydrology, and other features of the County's groundwater resources.

#### Policy 8.1.7

The County will ensure that existing and new developments do not pollute the groundwater supply.

#### Policy 8.1.8

The County will protect community well heads, distinct aquifer recharge areas and other critical areas from potential sources of groundwater pollution.

#### Policy 8.1.9

The County will work to ensure the remediation of contaminated land or groundwater and the elimination of potential contamination pathways.

### Objective 8.2 Soil

Champaign County will strive to conserve its soil resources to provide the greatest benefit to current and future generations.

**Policy 8.2.1**

The County will strive to minimize the destruction of its soil resources by non-agricultural development and will give special consideration to the protection of *best prime farmland*. *Best prime farmland* is that comprised of soils that have a Relative Value of at least 85 and includes land parcels with mixed soils that have a Land Evaluation score of 85 or greater as defined in the LESA.

**Objective 8.3 Underground Mineral and Energy Resource Extraction**

Champaign County will work to ensure future access to its underground mineral and energy resources and to ensure that their extraction does not create nuisances or detract from the long-term beneficial use of the affected property.

**Policy 8.3.1**

The County will allow expansion or establishment of underground mineral and energy resource extraction operations only if:

- a) the operation poses no significant adverse impact to existing land uses;
- b) the operation creates no significant adverse impact to surface water quality or other natural resources; and
- c) provisions are made to fully reclaim the site for a beneficial use.

**Objective 8.4 Surface Water Protection**

Champaign County will work to ensure that new development and ongoing land management practices maintain and improve surface water quality, contribute to stream channel stability, and minimize erosion and sedimentation.

**Policy 8.4.1**

The County will incorporate the recommendations of adopted watershed plans in its policies, plans, and investments and in its *discretionary review* of new development.

**Policy 8.4.2**

The County will require stormwater management designs and practices that provide effective site drainage, protect downstream drainage patterns, minimize impacts on adjacent properties and provide for stream flows that support healthy aquatic ecosystems.

**Policy 8.4.3**

The County will encourage the implementation of agricultural practices and land management that promotes good drainage while maximizing stormwater infiltration and aquifer recharge.

**Policy 8.4.4**

The County will ensure that point discharges including those from new development, and including surface discharging on-site wastewater systems, meet or exceed state and federal water quality standards.

**Policy 8.4.5**

The County will ensure that non-point discharges from new development meet or exceed state and federal water quality standards.

**Policy 8.4.6**

The County recognizes the importance of the drainage districts in the operation and maintenance of drainage.





### **Objective 8.5 Aquatic and Riparian Ecosystems**

Champaign County will encourage the maintenance and enhancement of aquatic and riparian habitats.

#### **Policy 8.5.1**

For *discretionary development*, the County will require land use patterns, site design standards and land management practices that, wherever possible, preserve existing habitat, enhance degraded habitat and restore habitat.

#### **Policy 8.5.2**

The County will require in its *discretionary review* that new development cause no more than minimal disturbance to the stream corridor environment.

#### **Policy 8.5.3**

The County will encourage the preservation and voluntary restoration of wetlands and a net increase in wetland habitat acreage.

#### **Policy 8.5.4**

The County will support efforts to control and eliminate invasive species.

#### **Policy 8.5.5**

The County will promote drainage system maintenance practices that provide for effective drainage, promote channel stability, minimize erosion and sedimentation, minimize ditch maintenance costs and, when feasible, support healthy aquatic ecosystems.

### **Objective 8.6 Natural Areas and Habitat**

Champaign County will encourage resource management which avoids loss or degradation of areas representative of the *pre-settlement environment* and other areas that provide habitat for native and game species.

#### **Policy 8.6.1**

The County will encourage educational programs to promote sound environmental stewardship practices among private landowners.

#### **Policy 8.6.2**

- a. For new development, the County will require land use patterns, site design standards and land management practices to minimize the disturbance of existing areas that provide habitat for native and game species, or to mitigate the impacts of unavoidable disturbance to such areas.
- b. With regard to *by-right development* on *good zoning lots*, or the expansion thereof, the County will not require new zoning regulations to preserve or maintain existing onsite areas that provide habitat for native and game species, or new zoning regulations that require mitigation of impacts of disturbance to such onsite areas.

#### **Policy 8.6.3**

For *discretionary development*, the County will use the Illinois Natural Areas Inventory and other scientific sources of information to identify priority areas for protection or which offer the potential for restoration, preservation, or enhancement.

#### **Policy 8.6.4**

The County will require implementation of IDNR recommendations for *discretionary development* sites that contain endangered or threatened species, and will seek to ensure that recommended management practices are maintained on such sites.

**Policy 8.6.5**

The County will continue to allow the reservation and establishment of private and public hunting grounds where conflicts with surrounding land uses can be minimized.

**Policy 8.6.6**

The County will encourage the purchase, donation, or transfer of development rights and the like, by public and private entities, of significant natural areas and habitat for native and game species for the purpose of preservation.

**Objective 8.7 Parks and Preserves**

Champaign County will work to protect existing investments in *rural* parkland and natural area preserves and will encourage the establishment of new public parks and preserves and protected private lands.

**Policy 8.7.1**

The County will require that the location, site design and land management of *discretionary development* minimize disturbance of the natural quality, habitat value and aesthetic character of existing public and private parks and preserves.

**Policy 8.7.2**

The County will strive to attract alternative funding sources that assist in the establishment and maintenance of parks and preserves in the County.

**Policy 8.7.3**

The County will require that *discretionary development* provide a reasonable contribution to support development of parks and preserves.

**Policy 8.7.4**

The County will encourage the establishment of public-private partnerships to conserve woodlands and other significant areas of natural environmental quality in Champaign County.

**Policy 8.7.5**

The County will implement, where possible, incentives to encourage land development and management practices that preserve, enhance natural areas, wildlife habitat and/or opportunities for hunting and other recreational uses on private land.

**Policy 8.7.6** The County will support public outreach and education regarding site-specific natural resource management guidelines that landowners may voluntarily adopt.

**Objective 8.8 Air Pollutants**

Champaign County considers the atmosphere a valuable resource and will seek to minimize harmful impacts to it and work to prevent and reduce the discharge of ozone precursors, acid rain precursors, toxics, dust and aerosols that are harmful to human health.

**Policy 8.8.1** The County will require compliance with all applicable Illinois Environmental Protection Agency and Illinois Pollution Control Board standards for air quality when relevant in *discretionary review* development.

**Policy 8.8.2** In reviewing proposed *discretionary development*, the County will identify existing sources of air pollutants and will avoid locating sensitive land uses where occupants will be affected by such discharges.



### **Objective 8.9 Natural Resources Assessment System**

Champaign County will, by the year 2016, adopt a natural resources specific assessment system that provides a technical framework to numerically rank land parcels based on local resource evaluation and site considerations, including: groundwater resources; soil and mineral resources; surface waters; aquatic and riparian ecosystems; natural areas; parks and preserves; known cultural resources; and air quality.

## **Goal 9 Energy Conservation**

Champaign County will encourage energy conservation, efficiency, and the use of renewable energy sources.

### **Goal 9 Objectives**

#### **Objective 9.1 Reduce Greenhouse Gases**

Champaign County will seek to reduce the discharge of greenhouse gases.

#### **Objective 9.2 Energy Efficient Buildings**

Champaign County will encourage energy efficient building design standards.

#### **Objective 9.3 Land Use and Transportation Policies**

Champaign County will encourage land use and transportation planning policies that maximize energy conservation and efficiency.

#### **Objective 9.4 Reuse and Recycling**

Champaign County will promote efficient resource use and re-use and recycling of potentially recyclable materials.

#### **Objective 9.5 Renewable Energy Sources**

Champaign County will encourage the development and use of renewable energy sources where appropriate and compatible with existing land uses.

### **Goal 9 Objectives and Policies**

#### **Objective 9.1 Reduce Greenhouse Gases**

Champaign County will seek to reduce the discharge of greenhouse gases.

##### **Policy 9.1.1**

The County will promote land use patterns, site design standards and land management practices that minimize the discharge of greenhouse gases.

##### **Policy 9.1.2**

The County will promote energy efficient building design standards.

##### **Policy 9.1.3**

The County will strive to minimize the discharge of greenhouse gases from its own facilities and operations.

#### **Objective 9.2 Energy Efficient Buildings**

Champaign County will encourage energy efficient building design standards.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.

**Policy 9.2.1**

The County will enforce the Illinois Energy Efficient Commercial Building Act (20 ILCS 3125/1).

**Policy 9.2.2**

The County will strive to incorporate and utilize energy efficient building design in its own facilities.

**Objective 9.3 Land Use and Transportation Policies**

Champaign County will encourage land use and transportation planning policies that maximize energy conservation and efficiency.

**Objective 9.4 Reuse and Recycling**

Champaign County will promote efficient resource use and re-use and recycling of potentially recyclable materials.

**Objective 9.5 Renewable Energy Sources**

Champaign County will encourage the development and use of renewable energy sources where appropriate and compatible with existing land uses.

**Goal 10 Cultural Amenities**

Champaign County will promote the development and preservation of cultural amenities that contribute to a high quality of life for its citizens.

**Goal 10 Objective****Objective 10.1 Cultural Amenities**

Champaign County will encourage the development and maintenance of cultural, educational, recreational, and other amenities that contribute to the quality of life of its citizens.

**Goal 10 Objectives and Policy****Objective 10.1 Cultural Amenities**

Champaign County will encourage the development and maintenance of cultural, educational, recreational, and other amenities that contribute to the quality of life of its citizens.

**Policy 10.1.1**

The County will work to identify historic structures, places and landscapes in the County.

Note: The Appendix contains defined terms, shown as italicized text in this Chapter.

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**1. Add the following to Section 3.0 Definitions (somewhat similar to the definition of WIND FARM):**

NOXIOUS WEEDS: any of several plants designated pursuant to the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.) and that are identified in 8 Illinois Administrative Code 220.

PHOTOVOLTAIC (PV): A type of solar energy system that produces electricity by the use of photovoltaic cells that generate electricity when struck by light.

PV SOLAR FARM: A unified development intended to convert sunlight into electricity ~~whether~~ by photovoltaic (PV) devices, ~~concentrating solar thermal devices (CST), or other conversion technology using other types of solar devices,~~ for the primary purpose of wholesale sales of generated electricity. A PV SOLAR FARM is under a common ownership and operating control even though parts of the PV SOLAR FARM may be located on land leased from different owners. A PV SOLAR FARM includes all necessary components including access driveways, solar devices, electrical inverter(s), electrical transformer(s), cabling, a common switching station, maintenance and management facilities, and waterwells. PV SOLAR FARM should be understood to include COMMUNITY PV SOLAR FARM unless specified otherwise in the relevant section or paragraph.

PV SOLAR FARM, COMMUNITY: A PV SOLAR FARM of not more than 2,000 kilowatt nameplate capacity that meets the requirements of Public Act 99-0906 for a “community renewable generation project”.

**2. Add new subparagraph 4.2.1 C.4. as follows:**

4. A PV SOLAR FARM may be authorized as a County Board SPECIAL USE permit in the AG-1, Agriculture Zoning District or the AG-2 Agriculture Zoning District as a second PRINCIPAL USE on a LOT with another PRINCIPAL USE.

**3. Add new subparagraph 4.3.4 H.4.i. as follows (similar to existing 4.3.4 H.4.h. for wind farms):**

- i. PV SOLAR FARM except as PIPELINE IMPACT RADIUS regulations are required in Subsection 6.1.5.

**4. Amend Section 5.2 as follows (similar to existing WIND FARM designation):**

Add “PV SOLAR FARM” as a COUNTY BOARD Special Use Permit in the AG-1 District and AG-2 District by a “B”.

**5. Add the following as footnote 15 under the Special Provisions for the AG-1 District in Section 5.3 (similar to existing footnote 14 for LOTS in a WIND FARM):**

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15. LOTS in a **PV** SOLAR FARM County Board SPECIAL USE Permit and intended for **PV** SOLAR FARM, related substations, and **PV** SOLAR FARM maintenance and management facilities are exempt from the requirements of Section 5.3 except as such regulations are required by Subsection 6.1.5.

**6. Add new paragraph 5.4.3 F. as follows:**

- F. The Rural Residential Overlay Zoning District is prohibited from being established within a **PV** SOLAR FARM County Board SPECIAL USE Permit.

**7. Amend Section 6.1.1 to read as follows:**

## A. Site Reclamation Plan for NON-ADAPTABLE STRUCTURES

1. In the course of BOARD review of a SPECIAL USE request, the BOARD may find that a proposed STRUCTURE is a NON-ADAPTABLE STRUCTURE. Any WIND FARM and any **PV** SOLAR FARM shall be a NON-ADAPTABLE STRUCTURE. The Applicant for the SPECIAL USE request for a NON-ADAPTABLE STRUCTURE shall submit a site reclamation plan to the BOARD for the subject site.
2. The site reclamation plan shall be binding upon all successors of title to the land. Prior to the issuance of a SPECIAL USE Permit for such NON-ADAPTABLE STRUCTURES, the landowner or applicant shall also record a covenant incorporating the provisions of the site reclamation plan on the deed subject to the LOT, requiring that the reclamation work be performed and that a letter of credit be provided for financial assurance.
3. Separate cost estimates for Section 6.1.1 A.4.a., 6.1.1 A.4.b., and 6.1.1 A.4.c. shall be provided by an Illinois Licensed Professional Engineer.
  - (a) Cost estimates provided shall be subject to approval of the BOARD.
  - (b) Except as provided in Section 6.1.4 P. and Section 6.1.5 Q., the salvage value of the components of the NON-ADAPTABLE STRUCTURE shall not be credited to the cost estimates.
4. The site reclamation plan shall provide for:
  - (a) removal of above-ground portion of any STRUCTURE on the subject site; site grading; and, interim soil erosion control;
  - (b) below-ground restoration, including final grading and surface treatment;
  - (c) any environmental remediation required by State or Federal law;

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- (d) provision and maintenance of a letter of credit, as set forth in Section 6.1.1 A.5.
5. No Zoning Use Permit for such SPECIAL USE will be issued until the applicant provides the COUNTY with an irrevocable letter of credit to be drawn upon a federally insured financial institution within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit. The irrevocable letter of credit shall be in the amount of one hundred fifty percent (150%) of an independent engineer's cost estimate to complete the work described in Section 6.1.1 A.4.a., Section 6.1.1 A.4.b., and Section 6.1.1 A.4.c., except a different amount may be required as a standard condition in Section 6.1.4 P. and Section 6.1.5 Q. This letter of credit, or a successor letter of credit pursuant to Section 6.1.1 A.6. or 6.1.1 A.12. shall remain in effect and shall be made available to the COUNTY for an indefinite term or for a different term that may be required as a standard condition in paragraph 6.1.4 P and 6.1.5 Q.
6. One hundred eighty (180) days prior to the expiration date of an irrevocable letter of credit submitted pursuant to this Section, the Zoning Administrator shall notify the landowner or applicant in writing and request information about the landowner or applicant's intent to renew the letter of credit, or remove the NON-ADAPTABLE STRUCTURE. The landowner or applicant shall have thirty (30) days to respond in writing to this request. If the landowner or applicant's intention is to remove the NON-ADAPTABLE STRUCTURE, the landowner or applicant will have a total of ninety (90) days from the date of response to remove it in accordance with Section 6.1.1A.4.a. At the end of ninety (90) days, the Zoning Administrator shall have a period of sixty (60) days to either:
- (a) confirm that the bank has renewed the letter of credit; or
  - (b) inspect the subject property for compliance with Section 6.1.1 A.4.a.;
  - (c) draw on the letter of credit and commence the bid process to have a contractor remove the NON-ADAPTABLE STRUCTURE pursuant to Section 6.1.1 A.4.a.
7. The Zoning Administrator may find a NON-ADAPTABLE STRUCTURE abandoned in place. Factors to be considered in making this finding include, but are not limited to:
- (a) the nature and frequency of use as set forth in the application for SPECIAL USE;
  - (b) the current nature and frequency of use;

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- (c) whether the NON-ADAPTABLE STRUCTURE has become a public nuisance, or otherwise poses a risk of harm to public health or safety;
  - (d) whether the NON-ADAPTABLE STRUCTURE has been maintained in a manner which allows it to be used for its intended purpose, with no greater effects on surrounding properties and the public as a whole than was originally intended.
  - (e) A court of law, an arbitrator, mediator, or any state or Federal agency charged with enforcing State or Federal law has made a finding that either said NON-ADAPTABLE STRUCTURE or the structures supporting said NON-ADAPTABLE STRUCTURE and/or any related site grading and soil erosion controls or lack of same, constitutes a public nuisance or otherwise violates State or Federal law, or any State or Federal agency charged with enforcing State or Federal law has made a final determination either imposing an administrative sanction on any person associated with the NON-ADAPTABLE STRUCTURE relating to its use or denying the NON-ADAPTABLE STRUCTURE a permit necessary for its lawful operation.
8. Once the Zoning Administrator has made a finding that a NON-ADAPTABLE STRUCTURE is abandoned in place, the Zoning Administrator shall issue notice to the land owner at the owner's last known address that the COUNTY will draw on the performance guarantee within thirty (30) days unless the owner appeals the Zoning Administrator's finding, pursuant to Section 9.1.8 or enters into a written agreement with the COUNTY to remove such NON-ADAPTABLE STRUCTURE in accordance with Section 6.1.1 A.4. within ninety (90) days and removes the NON-ADAPTABLE STRUCTURE accordingly.
9. The Zoning Administrator may draw on the funds to have said NON-ADAPTABLE STRUCTURE removed as per Section 6.1.1 A.4. of the reclamation agreement when any of the following occur:
- (a) no response is received from the land owner within thirty (30) days from initial notification by the Zoning Administrator;
  - (b) the land owner does not enter, or breaches any term of a written agreement with the COUNTY to remove said NON-ADAPTABLE STRUCTURE as provided in Section 6.1.1 A.8.;
  - (c) any breach or performance failure of any provision of the reclamation agreement;



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- (d) the owner of record has filed a bankruptcy petition, or compromised the COUNTY's interest in the letter of credit in any way to specifically allowed by the reclamation agreement;
  - (e) a court of law has made a finding that a NON-ADAPTABLE STRUCTURE constitutes a public nuisance;
  - (f) the owner of record has failed to replace an expiring letter of credit within the deadlines set forth in Section 6.1.1A.6.; or
  - (g) any other conditions to which the COUNTY and the land owner mutually agree, as set forth in the reclamation agreement.
10. Once the letter of credit has been drawn upon, and the site has been restored to its original condition, as certified by the Zoning Administrator, the covenant entered pursuant to Section 6.1.1. A.2. shall expire, and the COUNTY shall act to remove said covenant from the record of the property at the Recorder of Deeds within forty-five (45) days.
11. The proceeds of the letter of credit may only be used by the COUNTY to:
- (a) remove the NON-ADAPTABLE STRUCTURE and return the site to its condition prior to the placement of the NON-ADAPTABLE STRUCTURE, in accordance with the most recent reclamation agreement submitted and accepted in relation to the NON-ADAPTIVE STRUCTURE;
  - (b) pay all administrative and ancillary costs associated with drawing upon the financial assurance and performing the reclamation work, which shall include, but not be limited to, attorney's fees; construction management and other professional service fees; and the costs of preparing request for proposal and bidding documents required to comply with state law or Champaign County purchasing policies; and
  - (c) remove any covenants placed on the title in conjunction with Section 6.1.1. A.2.

The balance of any proceeds remaining after the site has been reclaimed shall be returned to the issuer of the letter of credit.

12. Upon transfer of any property subject to a letter of credit pursuant to this Section, the new owner or applicant of record shall submit a new irrevocable letter of credit of same or greater value to the Zoning Administrator, prior to legal transfer of title, and shall submit a new site reclamation plan, pursuant to Section 6.1.1 A.4.a., and, for WIND FARMS, Section 6.1.4 P., and for PV SOLAR FARMS, 6.1.5 Q. Once the new owner or applicant of record has

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done so, the letter of credit posted by the previous owner or applicant shall be released, and the previous owner shall be released from any further obligations under the site reclamation plan.

13. The Applicant shall provide evidence of any new, additional, or substitute financial assurance to the Zoning Administrator throughout the operating lifetime of the NON-ADAPTABLE STRUCTURE.
14. Should the site reclamation plan, or any part of it, be deemed invalid by a court of competent jurisdiction, the associated SPECIAL USE permit shall be deemed void.

**8. Add new subsection 6.1.5 as follows (NOTE: the following new subsection is based on the existing subsection 6.1.4 for “WIND FARM”):**

6.1.5 PHOTOVOLTAIC (PV) SOLAR FARM County Board SPECIAL USE permit

A PHOTOVOLTAIC (PV) SOLAR FARM County Board SPECIAL USE permit may only be authorized in the AG-1 Zoning District or the AG-2 Agriculture Zoning District subject to the following standard conditions.

A. In what follows, PV SOLAR FARM should be understood to include COMMUNITY PV SOLAR FARM unless specified otherwise in the relevant section or paragraph.

B. General Standard Conditions

1. The area of the PV SOLAR FARM County Board SPECIAL USE permit must include the following minimum areas:
  - (a) All land that will be exposed to a noise level greater than that authorized to Class A land under paragraph 6.1.5 I.
  - (b) All necessary access lanes or driveways and any required new PRIVATE ACCESSWAYS. For purposes of determining the minimum area of the special use permit, access lanes or driveways shall be provided a minimum 40 feet wide area.
  - (c) All necessary PV SOLAR FARM STRUCTURES and ACCESSORY STRUCTURES including electrical distribution lines, inverters, transformers, common switching stations, and substations not under the ownership of a PUBLICLY REGULATED UTILITY and all waterwells that will provide water for the PV SOLAR FARM. For purposes of determining the minimum area of the special use permit, underground cable installations shall be provided a minimum 40 feet wide area.

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- (d) All aboveground STRUCTURES and facilities shall be of a type and shall be located in a manner that is consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR.
2. The PV SOLAR FARM County Board SPECIAL USE permit shall not be located in the following areas:
- a. Less than one-and-one-half miles from an incorporated municipality that has a zoning ordinance unless the following is provided:
- (1) The PV SOLAR FARM SPECIAL USE permit application shall include documentation that the application has provided a complete copy of the SPECIAL USE permit application to any municipality within one-and-one-half miles of the proposed PV SOLAR FARM.
- (2) A municipal Resolution of Non-opposition to the PV SOLAR FARM by any relevant municipality must be submitted to the ZONING ADMINISTRATOR prior to the consideration of the PV SOLAR FARM SPECIAL USE permit by the Champaign County Board.
- b. Less than one-half mile from the CR Conservation Recreation Zoning District.
- c. Any easement for a GAS PIPELINE or HAZARDOUS LIQUID PIPELINE; or any easement for an underground water main; or any easement for a drainage district, unless a crossing agreement has been entered into with the relevant party.
3. Interconnection to the power grid
- a. The PV SOLAR FARM SPECIAL USE permit application shall include documentation that the applicant or PV SOLAR FARM is in the queue to acquire an interconnection agreement to the power grid.
- b. Documentation of an executed interconnection agreement with the appropriate electric utility shall be provided prior to issuance of a Zoning Compliance Certificate to authorize operation of the PV SOLAR FARM.
- BC. Minimum Lot Standards
1. There are no minimum LOT AREA, AVERAGE LOT WIDTH, SETBACK, YARD, or maximum LOT COVERAGE requirements for a PV SOLAR FARM or for LOTS for PV SOLAR FARM substations and/ or PV SOLAR FARM maintenance and management facilities.

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2. There is no maximum LOT AREA requirement on BEST PRIME FARMLAND.

ED. Minimum Standard Conditions for Separations for PV SOLAR FARM from adjacent USES and STRUCTURES

The location of each PV SOLAR FARM shall provide the following required separations as measured from the exterior of the above ground portion of the PV SOLAR FARM STRUCTURES and equipment except for fencing:

1. A SETBACK of 55 feet from a MINOR STREET and a SETBACK of 75 feet from a COLLECTOR STREET and a SETBACK of 85 feet from a MAJOR STREET.
2. At least 100 feet from any existing DWELLING or existing PRINCIPAL BUILDING and not less than 50 feet from the property line of any adjacent LOT that is three acres or less in area and provided that the noise level caused by the PV SOLAR FARM ~~at the particular building~~ complies with the applicable Illinois Pollution Control Board regulations.
3. A separation of at least 500 feet from any of the following unless the SPECIAL USE permit application includes results provided from an analysis using the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, Federal Aviation Administration (FAA) Review of Solar Energy Projects on Federally Obligated Airports, or the most recent version adopted by the FAA, and the SGHAT results show no detrimental affect with less than a 500 feet separation from any of the following:
  - (a) any AIRPORT premises or any AIRPORT approach zone within five miles of the end of the AIRPORT runway; or
  - (b) any ~~legal~~ RESTRICTED LANDING AREA that is NONCONFORMING or which has been authorized by SPECIAL USE permit and that existed on or for which there had been a complete SPECIAL USE permit application received by April 22, 2010, or any approach zone for any such RESTRICTED LANDING AREA; or
  - (c) any ~~legal~~ RESIDENTIAL AIRPORT that existed on or for which there had been a complete SPECIAL USE permit application received by April 22, 2010, or any approach zone for any such RESIDENTIAL AIRPORT.
4. A separation of at least 500 feet between substations and transmission lines to adjacent dwellings and residential DISTRICTS.

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**DE.** Standard Conditions for Design and Installation of any PV SOLAR FARM.

1. Any building that is part of a PV SOLAR FARM shall include as a requirement for a Zoning Compliance Certificate a certification by an Illinois Professional Engineer or Illinois Licensed Structural Engineer or other qualified professional that the constructed building conforms to Public Act 96-074 regarding building code compliance and conforms to the Illinois Accessibility Code.
2. Electrical Components
  - (a) All electrical components of the PV SOLAR FARM shall conform to the National Electrical Code as amended.
  - (b) Burying power and communication wiring underground shall be minimized consistent with best management practice regarding PV solar farm construction and minimizing impacts on agricultural drainage tile.
- ~~3. The SOLAR FARM shall comply with all applicable Federal Aviation Administration (FAA) requirements which shall be explained in the application.~~
43. Maximum height. The height limitation established in Section 5.3 shall not apply to a PV SOLAR FARM. The maximum height of all above ground STRUCTURES shall be identified in the application and as approved in the SPECIAL USE permit.
54. Warnings
  - (a) A reasonably visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations.

**EF.** Standard Conditions to Mitigate Damage to Farmland

1. All underground wiring or cabling for the PV SOLAR FARM shall be at a minimum depth of 5 feet below grade or deeper if required to maintain a minimum one foot of clearance between the wire or cable and any agricultural drainage tile or a lesser depth if so authorized by the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR.
2. Protection of agricultural drainage tile
  - (a) The applicant shall endeavor to locate all existing agricultural drainage tile prior to establishing any construction staging areas, construction of any necessary PV SOLAR FARM access lanes or

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driveways, construction of any PV SOLAR FARM STRUCTURES, any common switching stations, substations, and installation of underground wiring or cabling. The applicant shall contact affected landowners and tenants and the Champaign County Soil and Water Conservation District and any relevant drainage district for their knowledge of tile line locations prior to the proposed construction. Drainage districts shall be notified at least two weeks prior to disruption of tile.

- (b) All identified drainage district tile lines shall be staked or flagged prior to construction to alert construction crews of the possible need for tile line repairs unless this requirement is waived in writing by the drainage district.
- (c) Any agricultural drainage tile located underneath construction staging areas, access lanes, driveways, any common switching stations, and substations shall be replaced as required in Section 6.3 of the Champaign County Champaign County Storm Water Management and Erosion Control Ordinance.
- (d) Any agricultural drainage tile that must be relocated shall be relocated as required in the Champaign County Champaign County Storm Water Management and Erosion Control Ordinance.
- (e) Conformance of any relocation of drainage district tile with the in the Champaign County Champaign County Storm Water Management and Erosion Control Ordinance shall be certified by an Illinois Professional Engineer. Written approval by the drainage district shall be received prior to any backfilling of the relocated drain tile and a copy of the approval shall be submitted to the Zoning Administrator. As-built drawings shall be provided to both the relevant drainage district and the Zoning Administrator of any relocated drainage district tile.
- (f) All tile lines that are damaged, cut, or removed shall be staked or flagged in such manner that they will remain visible until the permanent repairs are completed.
- (g) All exposed tile lines shall be screened or otherwise protected to prevent the entry into the tile of foreign materials, loose soil, small mammals, etc.
- (h) Permanent tile repairs shall be made within 14 days of the tile damage provided that weather and soil conditions are suitable or a temporary tile repair shall be made. Immediate temporary repair shall also be required if water is flowing through any damaged tile line. Temporary repairs are not needed if the tile lines are dry and

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water is not flowing in the tile provided the permanent repairs can be made within 14 days of the damage. All permanent and temporary tile repairs shall be made as detailed in the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR. and shall not be waived or modified except as authorized in the SPECIAL USE Permit.

- (i) All damaged tile shall be repaired so as to operate as well after construction as before the construction began.
  - (j) Following completion of the PV SOLAR FARM construction the applicant shall be responsible for correcting all tile line repairs that fail, provided that the failed repair was made by the Applicant.
3. All soil conservation practices (such as terraces, grassed waterways, etc.) that are damaged by PV SOLAR FARM construction shall be restored by the applicant to the pre- PV SOLAR FARM construction condition in a manner consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.
4. Topsoil replacement

For any open trenching required pursuant to PV SOLAR FARM construction, the topsoil shall be stripped and replaced as follows:

- (a) The top 12 inches of topsoil shall first be stripped from the area to be trenched and from an adjacent area to be used for subsoil storage. The topsoil shall be stored in a windrow parallel to the trench in such a manner that it will not become intermixed with subsoil materials.
- (b) All subsoil material that is removed from the trench shall be placed in the second adjacent stripped windrow parallel to the trench but separate from the topsoil windrow.
- (c) In backfilling the trench, the stockpiled subsoil material shall be placed back into the trench before replacing the topsoil.
- (d) The topsoil must be replaced such that after settling occurs, the topsoil's original depth and contour (with an allowance for settling) will be restored.
- (e) All topsoil shall be placed in a manner consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR.

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5. Mitigation of soil compaction and rutting
- (a) The Applicant shall not be responsible for mitigation of soil compaction and rutting if exempted by the PV SOLAR FARM lease.
  - (b) Unless specifically provided for otherwise in the PV SOLAR FARM lease, the Applicant shall mitigate soil compaction and rutting for all areas of farmland that were traversed with vehicles and construction equipment or where topsoil is replaced in open trenches.
  - (c) All mitigation of soil compaction and rutting shall be consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR.
6. Land leveling
- (a) The Applicant shall not be responsible for leveling of disturbed land if exempted by the PV SOLAR FARM lease.
  - (b) Unless specifically provided for otherwise in the PV SOLAR FARM lease, the Applicant shall level all disturbed land as follows:
    - (1) Following the completion of any open trenching, the applicant shall restore all land to its original pre-construction elevation and contour.
    - (2) Should uneven settling occur or surface drainage problems develop as a result of the trenching within the first year after completion, the applicant shall again restore the land to its original pre-construction elevation and contour.
  - (c) All land leveling shall be consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR.
7. Permanent Erosion and Sedimentation Control Plan
- (a) Prior to the approval of any Zoning Use Permit, the Applicant shall provide a permanent soil erosion and sedimentation plan for the PV SOLAR FARM including any access road that conforms to the relevant Natural Resources Conservation Service guidelines and that is prepared by an Illinois Licensed Professional Engineer.
  - (b) As-built documentation of all permanent soil erosion and sedimentation improvements for the PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer shall be submitted and accepted by the Zoning



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Administrator prior to approval of any Zoning Compliance Certificate.

8. Retention of all topsoil

No topsoil may be removed, stripped, or sold from the proposed SPECIAL USE Permit site pursuant to or as part of the construction of the PV SOLAR FARM.

FG. Standard Conditions for Use of Public Streets

Any PV SOLAR FARM Applicant proposing to use any County Highway or a township or municipal STREET for the purpose of transporting PV SOLAR FARM or Substation parts and/or equipment for construction, operation, or maintenance of the PV SOLAR FARM or Substations(s), shall identify all such public STREETS and pay the costs of any necessary permits and the costs to repair any damage to the STREETS caused by the PV SOLAR FARM construction, as follows:

1. Prior to the close of the public hearing before the BOARD, the Applicant shall enter into a Roadway Upgrade and Maintenance agreement approved by the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, except for any COMMUNITY PV SOLAR FARM for which the relevant highway authority has agreed in writing to waive the requirements of subparagraphs 6.1.5 F.1., 2., and 3., and the signed and executed Roadway Upgrade and Maintenance agreements must provide for the following minimum conditions:

(a) The applicant shall agree to conduct a pre- PV SOLAR FARM construction baseline survey to determine existing STREET conditions for assessing potential future damage including the following:

(1) A videotape of the affected length of each subject STREET supplemented by photographs if necessary.

(2) Pay for costs of the County to hire a consultant to make a study of any structure on the proposed route that the County Engineer feels may not carry the loads likely during the PV SOLAR FARM construction.

(3) Pay for any strengthening of STREET structures that may be necessary to accommodate the proposed traffic loads caused by the PV SOLAR FARM construction.

(b) The Applicant shall agree to pay for costs of the County Engineer to hire a consultant to make a study of any structure on the proposed route that the County Engineer feels may not carry the loads likely

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during the PV SOLAR FARM construction and pay for any strengthening of structures that may be necessary to accommodate the proposed traffic loads caused by the PV SOLAR FARM construction.

- (c) The Applicant shall agree upon an estimate of costs for any other necessary roadway improvements prior to construction.
- (d) The Applicant shall obtain any necessary approvals for the STREET improvements from the relevant STREET maintenance authority.
- (e) The Applicant shall obtain any necessary Access Permits including any required plans.
- (f) The Applicant shall erect permanent markers indicating the presence of underground cables.
- (g) The Applicant shall install marker tape in any cable trench.
- (h) The Applicant shall become a member of the Illinois state wide One-Call Notice System (otherwise known as the Joint Utility Locating Information for Excavators or "JULIE") and provide JULIE with all of the information necessary to update its record with respect to the PV SOLAR FARM.
- (i) The Applicant shall use directional boring equipment to make all crossings of County Highways for the cable collection system.
- (j) The Applicant shall notify the STREET maintenance authority in advance of all oversize moves and crane crossings.
- (k) The Applicant shall provide the County Engineer with a copy of each overweight and oversize permit issued by the Illinois Department of Transportation for PV SOLAR FARM construction.
- (l) The Applicant shall transport the PV SOLAR FARM loads so as to minimize adverse impact on the local traffic including farm traffic.
- (m) The Applicant shall schedule PV SOLAR FARM construction traffic in a way to minimize adverse impacts on emergency response vehicles, rural mail delivery, school bus traffic, and local agricultural traffic.
- (n) The Applicant shall provide as much advance notice as is commercially reasonable to obtain approval of the STREET maintenance authority when it is necessary for a STREET to be closed due to a crane crossing or for any other reason. Notwithstanding the generality of the aforementioned, the Applicant will provide 48 hours notice to the extent reasonably practicable.

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- (o) The Applicant shall provide signs indicating all highway and STREET closures and work zones in accordance with the Illinois Department of Transportation Manual on Uniform Traffic Control Devices.
- (p) The Applicant shall establish a single escrow account and a single Irrevocable Letter of Credit for the cost of all STREET upgrades and repairs pursuant to the PV SOLAR FARM construction.
- (q) The Applicant shall notify all relevant parties of any temporary STREET closures.
- (r) The Applicant shall obtain easements and other land rights needed to fulfill the Applicant's obligations under this Agreement.
- (s) The Applicant shall agree that the County shall design all STREET upgrades in accordance with the IDOT Bureau of Local Roads and Streets Manual, 2005 edition.
- (t) The Applicant shall provide written Notice to Proceed to the relevant STREET maintenance authority by December 31 of each year that identifies the STREETS to be upgraded during the following year.
- (u) The Applicant shall provide dust control and grading work to the reasonable satisfaction of the County Engineer on STREETS that become aggregate surface STREETS.
- (v) The Applicant shall conduct a post- PV SOLAR FARM construction baseline survey similar to the pre- PV SOLAR FARM construction baseline survey to identify the extent of repairs necessary to return the STREET to the pre- PV SOLAR FARM construction condition.
- (w) The Applicant shall pay for the cost of all repairs to all STREETS that are damaged by the Applicant during the construction of the PV SOLAR FARM and restore such STREETS to the condition they were in at the time of the pre- PV SOLAR FARM construction inventory.
- (x) All PV SOLAR FARM construction traffic shall exclusively use routes designated in the approved Transportation Impact Analysis.
- (y) The Applicant shall provide liability insurance in an acceptable amount to cover the required STREET construction activities.
- (z) The Applicant shall pay for the present worth costs of life consumed by the construction traffic as determined by the pavement management surveys and reports on the roads which do not show significant enough deterioration to warrant immediate restoration.

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- (aa) Provisions for expiration date on the agreement.
  - (bb) Other conditions that may be required.
2. A condition of the County Board Special Use Permit approval shall be that the Zoning Administrator shall not authorize a Zoning Use Permit for the **PV** SOLAR FARM until the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, has approved a Transportation Impact Analysis provided by the Applicant and prepared by an independent engineer that is mutually acceptable to the Applicant and the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, that includes the following:
- (a) Identify all such public STREETS or portions thereof that are intended to be used by the Applicant during construction of the **PV** SOLAR FARM as well as the number of loads, per axle weight of each load; and type of equipment that will be used to transport each load.
  - (b) A schedule of the across road culverts and bridges affected by the project and the recommendations as to actions, if any, required with respect to such culverts and bridges and estimated of the cost to replace such culverts and bridges;
  - (c) A schedule of the anticipated STREET repair costs to be made in advance of the **PV** SOLAR FARM construction and following construction of the **PV** SOLAR FARM.
  - (d) The Applicant shall reimburse the County Engineer; or Township Highway Commissioner; or municipality where relevant, for all reasonable engineering fees including the costs of a third party consultant, incurred in connection with the review and approval of the Transportation Impact Analysis.
3. At such time as decommissioning takes place the Applicant or its successors in interest shall enter into a Roadway use and Repair Agreement with the appropriate highway authority.

**GH. Standard Conditions for Coordination with Local Fire Protection District**

- 1. The Applicant shall submit to the local fire protection district a copy of the site plan.
- 2. Upon request by the local fire protection district, the Owner or Operator shall cooperate with the local fire protection district to develop the fire protection district's emergency response plan.

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3. Nothing in this section shall alleviate the need to comply with all other applicable fire laws and regulations.

**HI.** Standard Conditions for Allowable Noise Level

1. Noise levels from any **PV** SOLAR FARM shall be in compliance with the applicable Illinois Pollution Control Board (IPCB) regulations (*35 Illinois Administrative Code* Subtitle H: Noise Parts 900, 901, 910).
2. The Applicant shall submit manufacturer's sound power level characteristics and other relevant data regarding noise characteristics of proposed **PV** SOLAR FARM equipment necessary for a competent noise analysis.
3. The Applicant, through the use of a qualified professional, as part of the siting approval application process, shall appropriately demonstrate compliance with the above noise requirements.
4. After construction of the **PV** SOLAR FARM the Zoning Administrator shall take appropriate enforcement action as necessary to investigate noise complaints in order to determine the validity of the complaints and take any additional enforcement action as proves warranted to stop any violation that is occurring, including but not limited to the following:
  - (a) The Zoning Administrator shall make the Environment and Land Use Committee aware of complaints about noise that have been received by the Complaint Hotline.
  - (b) If the Environment and Land Use Committee determines that the noise is excessive, the Environment and Land Use Committee shall require the Owner or Operator to take reasonable steps to mitigate the excessive noise.

**IJ.** Standard Conditions for Endangered Species Consultation

The Applicant shall apply for consultation with the Endangered Species Program of the Illinois Department of Natural Resources. The Application shall include a copy of the Agency Action Report from the Endangered Species Program of the Illinois Department of Natural Resources or, if applicable, a copy of the Detailed Action Plan Report submitted to the Endangered Species Program of the Illinois Department of Natural Resources and a copy of the response from the Illinois Department of Natural Resources.

**JK.** Standard Conditions for Historic and Archaeological Resources Review

The Applicant shall apply for consultation with the State Historic Preservation Officer of the Illinois Department of Natural Resources. The Application shall

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include a copy of the Agency Action Report from the State Historic Preservation Officer of the Illinois Department of Natural Resources.

**KL**. Standard Conditions for Acceptable Wildlife Impacts

1. The **PV** SOLAR FARM shall be located, designed, constructed, and operated so as to avoid and if necessary mitigate the impacts to wildlife to a sustainable level of mortality.

**LM**. Screening and fencing

## 1. Perimeter fencing

- (a) **PV** SOLAR FARM equipment and structures shall be fully enclosed and secured by a fence with a minimum height of 7 feet.
- (b) Knox boxes and keys shall be provided at locked entrances for emergency personnel access.
- (c) The perimeter fencing shall be a minimum of 10 feet from a SIDE or REAR LOT LINE but not less than 25 feet from the property line of any adjacent LOT that is three acres or less in area and a minimum of 40 feet from a MINOR STREET and a minimum of 55 feet from a COLLECTOR STREET and a minimum of 60 feet from a MAJOR STREET but in no case shall the perimeter fencing be less than 10 feet from the RIGHT OF WAY of any STREET.
- (d) Vegetation between the fencing and the LOT LINE shall be maintained such that NOXIOUS WEEDS are controlled or eradicated consistent with the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.). Management of the vegetation shall be explained in the application.

## 2. Screening

- (a) A visual screen shall be provided around the perimeter of the **PV** SOLAR FARM as follows:
  - (1) The visual screen shall be provided for any part of the **PV** SOLAR FARM that is visible to and located within 1,000 feet of a DWELLING or residential DISTRICT. However, the visual screen shall not be required if the **PV** SOLAR FARM is not visible to a DWELLING or residential DISTRICT by virtue of the existing topography.
  - (2) The visual screen shall be waived if the owner(s) of a relevant DWELLING(S) have agreed in writing to waive the

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screening requirement and a copy of the written waiver is submitted to the BOARD or GOVERNING BODY.

- (3) The visual screen shall ~~either be opaque fencing consistent with subparagraph 6.1.5 L.1. or~~ a vegetated buffer as follows:
- (a) A vegetated visual screen buffer shall include a continuous line of evergreen foliage and/ or any existing wooded area and/ or tallgrass prairie plantings that will conceal the PV SOLAR FARM from view from adjacent abutting property.
  - (b) Any vegetation that is part of the approved visual screen buffer shall be maintained in perpetuity.
  - (c) The continuous line of evergreen foliage shall be planted at a minimum height of 5 feet tall and shall be planted in multiple rows as required to provide a 50% screen within 2 years of planting. If the evergreen foliage below a height of 7 feet disappears over time, the screening shall be replaced.
  - (d) A tallgrass prairie planting may be used as a visual screen buffer for any PV module installation that is no more than 8 feet tall and the planting shall be at least 10 feet wide and shall be planted and maintained per the recommendations of the Natural Resources Conservation Service.
  - (e) Any vegetated screen buffer shall be detailed in a landscape plan drawing that shall be included with the PV SOLAR FARM SPECIAL USE permit application.

**MN. Standard Condition to Minimize Glare**

1. The design and construction of the PV SOLAR FARM shall minimize glare that may affect adjacent properties and the application shall include an explanation of how glare will be minimized.
2. After construction of the PV SOLAR FARM the Zoning Administrator shall take appropriate enforcement action as necessary to investigate complaints of glare in order to determine the validity of the complaints and take any additional enforcement action as proves warranted to stop any significant glare that is occurring, including but not limited to the following:

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- (a) The Zoning Administrator shall make the Environment and Land Use Committee aware of complaints about glare that have been received by the Complaint Hotline.
  - (b) If the Environment and Land Use Committee determines that the glare is excessive, the Environment and Land Use Committee shall require the Owner or Operator to take reasonable steps to mitigate the excessive glare such as the installation of additional screening.

**NO.** Standard Condition for Liability Insurance

- 1. The Owner or Operator of the **PV** SOLAR FARM shall maintain a current general liability policy covering bodily injury and property damage with minimum limits of a least \$5 million per occurrence and \$5 million in the aggregate.
- 2. The general liability policy shall identify landowners in the SPECIAL USE permit as additional insured.

**OP.** Operational Standard Conditions

- 1. Maintenance
  - (a) The Owner or Operator of the **PV** SOLAR FARM must submit, on an annual basis, a summary of the operation and maintenance reports to the Environment and Land Use Committee and any other operation and maintenance reports as the Environment and Land Use Committee reasonably requests.
  - (b) Any physical modification to the **PV** SOLAR FARM that increases the number of solar conversion devices or structures and/ or the land area occupied by the **PV** SOLAR FARM shall require a new County Board SPECIAL USE Permit. Like-kind replacements shall not require re-certification nor will replacement of transformers, cabling, etc. provided replacement is done in a fashion similar to the original installation.
  - (c) The Application shall explain methods and materials used to clean the **PV** SOLAR FARM equipment including an estimation of the daily and annual gallons of water used and the source of the water and the management of wastewater. The BOARD may request copies of well records from the Illinois State Water Survey and may require an estimate by a qualified hydrogeologist of the likely impact on adjacent waterwells.



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2. Materials Handling, Storage and Disposal
    - (a) All solid wastes related to the construction, operation and maintenance of the PV SOLAR FARM shall be removed from the site promptly and disposed of in accordance with all federal, state and local laws.
    - (b) All hazardous materials related to the construction, operation and maintenance of the PV SOLAR FARM shall be handled, stored, transported and disposed of in accordance with all applicable local, state and federal laws.
  3. Vegetation management
    - (a) The PV SOLAR FARM SPECIAL USE permit application shall include a weed control plan for the total area of the SPECIAL USE permit including areas both inside of and outside of the perimeter fencing.
    - (b) The weed control plan shall ensure the control and/ or eradication of NOXIOUS WEEDS consistent with the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.)
    - (c) The weed control plan shall be explained in the application.

**PQ.** Standard Condition for Decommissioning Plan and Site Reclamation Plan

1. The Applicant shall submit a signed site reclamation plan conforming to the requirements of paragraph 6.1.1 A.
2. In addition to the purposes listed in subparagraph 6.1.1 A.4. the reclamation plan shall also include provisions for anticipated repairs to any public STREET used for the purpose of reclamation of the PV SOLAR FARM and all costs related to removal of access driveways.
3. The site reclamation plan required in paragraph 6.1.1 A. shall also include the following:
  - (a) A stipulation that the applicant shall notify the GOVERNING BODY by certified mail of the commencement of voluntary or involuntary bankruptcy proceeding, naming the applicant as debtor, within ten days of commencement of the proceeding.
  - (b) A stipulation that the applicant shall agree that the sale, assignment in fact or law, or such other transfer of applicant's financial interest in the PV SOLAR FARM shall in no way affect or change applicant's obligation to continue to comply with the terms of this plan. Any successor or assignee shall assume the terms, covenants,

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and obligations of this plan and agrees to assume all reclamation liability and responsibility for the PV SOLAR FARM.

- (c) Authorization for the GOVERNING BODY and its authorized representatives for right of entry onto the PV SOLAR FARM premises for the purpose of inspecting the methods of reclamation or for performing actual reclamation if necessary.
- (d) A stipulation that at such time as decommissioning takes place the applicant or its successors in interest are required to enter into a Roadway Use and Repair Agreement with the relevant highway authority.
- (e) A stipulation that the Applicant shall provide evidence of any new, additional, or substitute financing or security agreement to the Zoning Administrator throughout the operating lifetime of the project.
- (f) A stipulation that the Applicant shall be obliged to perform the work in the site reclamation plan before abandoning the PV SOLAR FARM or prior to ceasing production of electricity from the PV SOLAR FARM, after it has begun, other than in the ordinary course of business. This obligation shall be independent of the obligation to pay financial assurance, and shall not be limited by the amount of financial assurance. The obligation to perform the reclamation work shall constitute a covenant running with the land
- (g) The site reclamation plan shall provide for payment of any associated costs that Champaign County may incur in the event that decommissioning is actually required. Associated costs include all administrative and ancillary costs associated with drawing upon the financial assurance and performing the reclamation work and shall include but not be limited to attorney's fees; construction management and other professional service fees; and the costs of preparing request for proposals and bidding documents required to comply with state law or Champaign County purchasing policies.
- (h) The depth of removal of foundation concrete below ground shall be a minimum of 54 inches. The depth of removal of foundation concrete shall be certified in writing by an Illinois Licensed Professional Engineer and the certification shall be submitted to the Zoning Administrator.
- (i) Underground electrical cables at a depth of 5 feet or greater may be left in place.
- (j) The hole resulting from the removal of foundation concrete during decommissioning shall be backfilled as follows:

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- (1) The excavation resulting from the removal of foundation concrete shall only be backfilled with subsoil and topsoil in similar depths and similar types as existed at the time of the original PV SOLAR FARM construction except that a lesser quality topsoil or a combination of a lesser quality topsoil and a subsoil that is similar to the native subsoil may be used at depths corresponding to the native subsoil but not less than 12 inches below grade.
- (2) The native soils excavated at the time of the original PV SOLAR FARM construction may be used to backfill the concrete foundation excavations at the time of decommissioning provided that the soils are adequately stored throughout the operating lifetime of the PV SOLAR FARM. The methods for storing the excavated native soils during the operating lifetime of the PV SOLAR FARM shall be included in the site reclamation plan.
- (3) If the excavated native soils are not stored for use for backfilling the concrete foundation excavations, a qualified soil scientist or Illinois Licensed Professional Engineer shall certify that the actual soils used to backfill the concrete foundation excavations are of equal or greater quality than the native soils or that, in the case of subsoil, the backfill soil meets the requirements of this paragraph. The certification shall be submitted to the Zoning Administrator.
- (4) An Illinois Licensed Professional Engineer shall certify in writing that the concrete foundation excavations have been backfilled with soil to such a depth and with a minimum of compaction that is consistent with the restoration of productive agricultural use such that the depth of soil is expected to be no less than 54 inches within one year after backfilling.
- (~~jk~~) A stipulation that should the site reclamation plan be deemed invalid by a court of competent jurisdiction the PV SOLAR FARM SPECIAL USE permit shall be deemed void.
- (~~kl~~) A stipulation that the Applicant's obligation to complete the site reclamation plan and to pay all associated costs shall be independent of the Applicant's obligation to provide financial assurance.
- (~~lm~~) A stipulation that the liability of the Applicant's failure to complete the site reclamation plan or any breach of the site reclamation plan

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requirement shall not be capped by the amount of the financial assurance.

- (~~mn~~) If the Applicant desires to remove equipment or property credited to the estimated salvage value without the concurrent replacement of the property with property of equal or greater salvage value or if the Applicant installs equipment or property increasing the cost of decommissioning after the PV SOLAR FARM begins to produce electricity, at any point, the Applicant shall first obtain the consent of the Zoning Administrator. If the Applicant's lien holders remove equipment or property credited to the salvage value the Applicant shall promptly notify the Zoning Administrator. In either of these events the total financial assurance shall be adjusted to reflect any change in total salvage value and total decommissioning costs resulting from any such removal or installation.
4. To comply with paragraph 6.1.1 A.5., the Applicant shall provide financial assurance in the form of an irrevocable letter of credit and an escrow account as follows:
- (a) At the time of Special Use Permit approval the amount of financial assurance to be provided for the site reclamation plan shall be ~~150~~125% of the decommissioning cost as determined in the independent engineer's cost estimate to complete the decommissioning work described in Sections 6.1.1 A.4.a. and 6.1.1 A.4.b. and 6.1.1 A.4.c. and shall otherwise comply with Section 6.1.1 A.5.
- (b) Net salvage value may be deducted from decommissioning costs as follows:
- (1) One of the following standards shall be met:
- a. The Applicant shall maintain the PV SOLAR FARM free and clear of liens and encumbrances, including financing liens and shall provide proof of the same prior to issuance of the SPECIAL USE Permit; or
- b. The Applicant shall deduct from the salvage value credit the amount of any lien or encumbrance on the PV SOLAR FARM; or
- c. Any and all financing and/or financial security agreements entered into by the Applicant shall expressly provide that the agreements are subject to the covenant required by Section 6.1.1. A.2 that the reclamation work be done.

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- (2) The Applicant shall provide proof of compliance with paragraph 6.1.5 ~~PQ~~.4.(b)(1) prior to issuance of any Zoning Use Permit and upon every renewal of the financial assurance and at any other time upon the request of the Zoning Administrator.
  - (3) The Applicant shall provide in the site reclamation plan for legal transfer of the STRUCTURE to the demolisher to pay the costs of reclamation work, should the reclamation work be performed.
  - (4) The net estimated salvage value that is deducted from the estimated decommissioning costs shall be the salvage value that results after all related costs for demolition and any required preparation for transportation for reuse or recycling or for simple disposal and other similar costs including but not limited to the decommissioning of the PV SOLAR FARM STRUCTURES, equipment, and access roads.
  - (5) Estimated salvage value shall be based on the average salvage price of the past five years as published in a reputable source for salvage values and shall reflect sound engineering judgment as to anticipated changes in salvage prices prior to the next update of estimated net salvage value.
  - (6) The deduction from the estimated decommissioning costs for net estimated salvage value shall be capped at 70% of the total net estimated salvage value even though the total actual salvage value shall be available in the event that decommissioning is actually required.
  - (7) The total financial assurance after deduction of the net estimated salvage value shall not be less than \$1,000 per acre.
  - (8) The credit for net estimated salvage value attributable to any PV SOLAR FARM may not exceed the estimated cost of removal of the above-ground portion of that PV SOLAR FARM on the subject site.
- (c) The GOVERNING BODY has the right to require multiple letters of credit based on the regulations governing federal insurance for deposits.
  - (d) The Applicant shall adjust the amount of the financial assurance to ensure that it reflects current and accurate information as follows:
    - (1) At least once every three years for the first 12 years of the financial assurance and at least once every two years thereafter the Applicant shall use an independent Illinois Licensed

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Professional Engineer to provide updated estimates of decommissioning costs and salvage value, by including any changes due to inflation and/or change in salvage price. The Applicant shall, upon receipt, provide a copy of the adjusted Professional Engineer's report to the Zoning Administrator.

- (2) At all times the total combined value of the irrevocable letter of credit and the escrow account shall equal or exceed the amount of the independent engineer's cost estimate as increased by known and documented rates of inflation based on the Consumer Price Index since the PV SOLAR FARM was approved.
- (e) The applicant or PV SOLAR FARM owner shall gradually pay down the value of the irrevocable letter of credit by placing cash deposits in an escrow account in equal annual installments over the first 13 years of the PV SOLAR FARM operation as follows:
- (1) The applicant or PV SOLAR FARM owner and the GOVERNING BODY shall agree on a mutually acceptable financial institution at which an escrow account shall be established.
- (2) The GOVERNING BODY shall be the beneficiary of the escrow account for the purpose of the reclamation of the PV SOLAR FARM in the event that the PV SOLAR FARM owner is incapable of decommissioning the PV SOLAR FARM.
- (3) The applicant or PV SOLAR FARM owner shall grant perfected security in the escrow account by use of a control agreement establishing the County as an owner of record, pursuant to the Secured Transactions Article of the Uniform Commercial Code, 810 ILCS 9/101 et seq.
- (4) The applicant or PV SOLAR FARM owner shall make annual deposits to the escrow account over a 12 year period and shall simultaneously provide a replacement irrevocable letter of credit that is reduced accordingly.
- (5) At all times the total combined value of the irrevocable letter of credit and the escrow account shall be increased annually as necessary to reflect actual rates of inflation over the life span of the PV SOLAR FARM and the amount shall be equal to or exceed ~~150~~125% of the amount of the independent engineer's cost estimate as increased by known and documented rates of inflation since the PV SOLAR FARM was approved;

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- (6) Any interest accrued on the escrow account that is over and above the total value required by subparagraph 6.1.5 PQ.4.(b)(4) shall go to the PV SOLAR FARM owner.
- (7) In order to provide funding for decommissioning at the time of decommissioning, the PV SOLAR FARM applicant or PV SOLAR FARM owner may exchange a new irrevocable letter of credit in an amount equal to the amount in the escrow account in exchange for the GOVERNING BODY agreeing to a release of the full amount of the escrow account.
- (f) Should the salvage value of components be adjusted downward or the decommissioning costs adjusted upward pursuant to paragraph 6.1.5 PQ.4.(d), the amount to be placed in the escrow account pursuant to this paragraph 6.1.5. PQ.4. shall be increased to reflect the adjustment, as if the adjusted estimate were the initial estimate.
- (g) Any financial assurance required per the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 QR. shall count towards the total financial assurance required for compliance with paragraph 6.1.1 A.5.
- (h) Unless the Governing Body approves otherwise, the Champaign County State's Attorney's Office shall review and approve every Letter of Credit and every agreement regarding the Escrow Account prior to formal acceptance by the Zoning Administrator.
5. In addition to the conditions listed in subparagraph 6.1.1 A.9. the Zoning Administrator may also draw on the funds for the following reasons:
- (a) In the event that any PV SOLAR FARM or component thereof ceases to be functional for more than six consecutive months after it starts producing electricity and the Owner is not diligently repairing such PV SOLAR FARM or component.
- (b) In the event that the Owner declares the PV SOLAR FARM any PV SOLAR FARM component to be functionally obsolete for tax purposes.
- (c) There is a delay in the construction of any PV SOLAR FARM of more than 6 months after construction on that PV SOLAR FARM begins.
- (d) Any PV SOLAR FARM or component thereof that appears in a state of disrepair or imminent collapse and/or creates an imminent threat to the health or safety of the public or any person.
- (e) Any PV SOLAR FARM or component thereof is otherwise derelict for a period of 6 months.

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- (f) The PV SOLAR FARM is in violation of the terms of the PV SOLAR FARM SPECIAL USE permit for a period exceeding ninety (90) days.
  - (g) The Applicant has failed to maintain financial assurance in the form and amount required by the special use permit or compromised the COUNTY's interest in the site reclamation plan.
  - (h) The COUNTY discovers any material misstatement of fact or misleading omission of fact made by the Applicant in the course of the special use permit zoning case.
  - (i) The Applicant has either failed to receive a copy of the certification of design compliance required by paragraph 6.1.5 D. or failed to submit it to the County within 12 consecutive months of receiving a Zoning Use Permit regardless of the efforts of the Applicant to obtain such certification.

6. The Zoning Administrator may, but is not required to, deem the PV SOLAR FARM abandoned, or the standards set forth in Section 6.1.5 P.5. met, with respect to some, but not all, of the PV SOLAR FARM. In that event, the Zoning Administrator may draw upon the financial assurance to perform the reclamation work as to that portion of the PV SOLAR FARM only. Upon completion of that reclamation work, the salvage value and reclamation costs shall be recalculated as to the remaining PV SOLAR FARM.

7. The Site Reclamation Plan shall be included as a condition of approval by the BOARD and the signed and executed irrevocable letter of credit and evidence of the escrow account must be submitted to the Zoning Administrator prior to any Zoning Use Permit approval.

QR. Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.

- 1. The Applicant shall enter into an Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
- 2. The Applicant shall bear full responsibility for coordinating any special conditions required in the SPECIAL USE Permit in order to ensure compliance with the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
- 3. All requirements of the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture shall become requirements of the County Board SPECIAL USE Permit.



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4. Champaign County shall have the right to enforce all requirements of the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture

**RS.** Complaint Hotline

1. Prior to the commencement of construction on the **PV** SOLAR FARM and during the entire term of the County Board SPECIAL USE permit and any extension, the Applicant and Owner shall establish a telephone number hotline for the general public to call with any complaints or questions.
2. The telephone number hotline shall be publicized and posted at the operations and maintenance center and the construction marshalling yard.
3. The telephone number hotline shall be manned during usual business hours and shall be an answering recording service during other hours.
4. Each complaint call to the telephone number hotline shall be logged and identify the name and address of the caller and the reason for the call.
5. All calls shall be recorded and the recording shall be saved for transcription for a minimum of two years.
6. A copy of the telephone number hotline shall be provided to the Zoning Administrator on a monthly basis.
7. The Applicant and Owner shall take necessary actions to resolve all legitimate complaints.

**ST.** Standard Condition for Expiration of **PV** SOLAR FARM County Board SPECIAL USE Permit

A **PV** SOLAR FARM County Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.

**FU.** Application Requirements

1. In addition to all other information required on the SPECIAL USE Permit application and required by Section 9.1.11 A.2. the application shall contain or be accompanied by the following information:
  - (a) A **PV** SOLAR FARM Project Summary, including, to the extent available:
    - (1) A general description of the project, including its approximate DC and AC generating capacity; the maximum number and type of solar devices; the potential equipment manufacturer(s).

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- (2) The specific proposed location of the **PV SOLAR FARM** including all tax parcels on which the **PV SOLAR FARM** will be constructed.
  - (3) The specific proposed location of all tax parcels required to be included in the **PV SOLAR FARM** County Board SPECIAL USE Permit.
  - (4) A description of the Applicant; Owner and Operator, including their respective business structures.
- (b) The name(s), address(es), and phone number(s) of the Applicant(s), Owner and Operator, and all property owner(s) for the **PV SOLAR FARM** County Board SPECIAL USE permit.
  - (c) A site plan for the SOLAR FARM indicating the following:
    - (1) The approximate planned location of all **PV SOLAR FARM STRUCTURES**, property lines (including identification of adjoining properties), required separations, public access roads and turnout locations, access driveways, solar devices, electrical inverter(s), electrical transformer(s), cabling, switching station, electrical cabling from the **PV SOLAR FARM** to the Substations(s), ancillary equipment, screening and fencing, third party transmission lines, meteorological station, maintenance and management facilities, and layout of all structures within the geographical boundaries of any applicable setback.
    - (2) The site plan shall clearly indicate the area of the proposed **PV SOLAR FARM** County Board SPECIAL USE Permit as required by subparagraph 6.1.5 A.1.
    - (3) The location of all below-ground wiring.
    - (4) The location, height, and appearance of all above-ground wiring and wiring structures.
    - (5) The separation of all **PV SOLAR FARM** structures from adjacent DWELLINGS and/ or PRINCIPAL BUILDINGS or uses shall be dimensioned on the approved site plan and that dimension shall establish the effective minimum separation that shall be required for any Zoning Use Permit. Greater separation and somewhat different locations may be provided in the approved site plan for the Zoning Use Permit provided that that the greater separation does not increase the noise impacts and /or glare that were approved in the **PV SOLAR FARM** County

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Board SPECIAL USE Permit. PV SOLAR FARM structures includes substations, third party transmission lines, maintenance and management facilities, or other significant structures.

- (d) All other required studies, reports, certifications, and approvals demonstrating compliance with the provisions of this Ordinance.
- 2. The Applicant shall notify the COUNTY of any changes to the information provided above that occurs while the County Board SPECIAL USE permit application is pending.
- 3. The Applicant shall include a copy of the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture with the Zoning Use Permit Application to authorize construction.

**9. Add the following paragraph 9.3.1 J. for Zoning Use Permit fee:**

J. PV SOLAR FARM with not more than 7.5 megawatt nameplate rating.....  
\$1,800 per megawatt (includes COMMUNITY PV SOLAR FARM)

PV SOLAR FARM with nameplate rating of 8-more than 7.5 megawatts.....  
\$13,500 plus \$1,260 for each megawatt more than 7.5 megawatts

**10. Revise subsection 9.3.3 as follows:**

**9.3.3 Zoning Case Filing Fees**

A. General Provisions

- 1. No zoning case filing shall be accepted until the filing fee has been paid.
- 2. No zoning case filing fee shall be waived unless the Zoning Administrator determines that the petition is the only means reasonably available to bring a property into compliance with the provisions of this ordinance and the non-compliance is due solely to staff error.
- 3. No zoning case filing fee shall be refunded after required legal notice has been made by mail or publication unless the Zoning Administrator determines such filing to have been based solely upon staff error.
- 4. No amendment to any petition which requires new legal notice shall be considered until an amended petition fee has been received unless the Zoning Administrator determines such amendment to be required due solely to staff error.

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5. The fee for SPECIAL USE permits shall be determined based on the larger of the following (except for County Board WIND FARM or PV SOLAR FARM SPECIAL USE Permits):
  - (a) the area of farmland taken out of production as a result of the SPECIAL USE; or
  - (b) when farmland will not be taken out of production as a result of the SPECIAL USE, the land area taken up by the existing STRUCTURES and all proposed CONSTRUCTION proposed in the SPECIAL USE application.
  
6. When some combination of VARIANCE, SPECIAL USE and Map Amendment cases is required simultaneously for the same property, the total filing fee shall include the following (except for County Board WIND FARM or PV SOLAR FARM Special Use Permits):
  - (a) The standard fee for the most expensive individual zoning case; and
  - (b) one-half of the standard fee for any other required VARIANCE, SPECIAL USE, or Map Amendment provided that
  - (c) no additional fees shall be included for multiple zoning cases of the same type that can be advertised in the same legal advertisement.

**B. Fees**

1. VARIANCES
  - (a) ADMINISTRATIVE VARIANCES \$100
  - (b) Minor or Major VARIANCES \$200
  
2. SPECIAL USE permits and Map Amendments (except for County Board WIND FARM or PV SOLAR FARM Special Use Permit)
  - (a) Two acres or less and Base Fee for larger areas .....\$400
  - (b) More than two acres but no more than 12 acres ..... add \$40 per acre to Base Fee for each acre over two acres
  - (c) More than 12 acres add \$10 per acre for each acre over 12 acres and add to fees in a. and b. above
  
3. Appeals and Interpretations.....\$200

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- 4. Change of Nonconforming Use .....\$100
  - 5. Amendment to Petitions (requiring new legal notice) .....\$100
  - 6. County Board WIND FARM Special Use Permit..... \$20,000 or \$440 per WIND FARM TURBINE TOWER, whichever is greater
  - 7. BIG WIND TURBINE TOWER SPECIAL USE Permit per BIG WIND TURBINE TOWER.....\$3,300
  - 8. County Board PV SOLAR FARM Special Use Permit
    - PV SOLAR FARM with not more than 7.5 megawatt nameplate rating.....\$1,320 per megawatt (includes COMMUNITY PV SOLAR FARM)
    - PV SOLAR FARM with nameplate rating of 8-more than 7.5 megawatts to 112.5 megawatts.....\$9,240 plus \$102 for each megawatt more than 7.5 megawatts and up to 112.5 megawatts
    - PV SOLAR FARM with more than 112.5 megawatt nameplate rating..... \$173-180 per megawatt over 112.5 megawatts

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**1. Add the following to Section 3.0 Definitions (somewhat similar to the definition of WIND FARM):**

**NOXIOUS WEEDS:** any of several plants designated pursuant to the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.) and that are identified in 8 Illinois Administrative Code 220.

**PHOTOVOLTAIC (PV):** A type of solar energy system that produces electricity by the use of photovoltaic cells that generate electricity when struck by light.

**PV SOLAR FARM:** A unified development intended to convert sunlight into electricity by photovoltaic (PV) devices for the primary purpose of wholesale sales of generated electricity. A PV SOLAR FARM is under a common ownership and operating control even though parts of the PV SOLAR FARM may be located on land leased from different owners. A PV SOLAR FARM includes all necessary components including access driveways, solar devices, electrical inverter(s), electrical transformer(s), cabling, a common switching station, maintenance and management facilities, and waterwells. PV SOLAR FARM should be understood to include COMMUNITY PV SOLAR FARM unless specified otherwise in the relevant section or paragraph.

**PV SOLAR FARM, COMMUNITY:** A PV SOLAR FARM of not more than 2,000 kilowatt nameplate capacity that meets the requirements of Public Act 99-0906 for a “community renewable generation project”.

**2. Add new subparagraph 4.2.1 C.4. as follows:**

4. A PV SOLAR FARM may be authorized as a County Board SPECIAL USE permit in the AG-1, Agriculture Zoning District or the AG-2 Agriculture Zoning District as a second PRINCIPAL USE on a LOT with another PRINCIPAL USE.

**3. Add new subparagraph 4.3.4 H.4.i. as follows (similar to existing 4.3.4 H.4.h. for wind farms):**

- i. PV SOLAR FARM except as PIPELINE IMPACT RADIUS regulations are required in Subsection 6.1.5.

**4. Amend Section 5.2 as follows (similar to existing WIND FARM designation):**

Add “PV SOLAR FARM” as a COUNTY BOARD Special Use Permit in the AG-1 District and AG-2 District by a “B”.

**5. Add the following as footnote 15 under the Special Provisions for the AG-1 District in Section 5.3 (similar to existing footnote 14 for LOTS in a WIND FARM):**

15. LOTS in a PV SOLAR FARM County Board SPECIAL USE Permit and intended for PV SOLAR FARM, related substations, and PV SOLAR FARM maintenance and management

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facilities are exempt from the requirements of Section 5.3 except as such regulations are required by Subsection 6.1.5.

**6. Add new paragraph 5.4.3 F. as follows:**

- F. The Rural Residential Overlay Zoning District is prohibited from being established within a PV SOLAR FARM County Board SPECIAL USE Permit.

**7. Amend Section 6.1.1 to read as follows:**

- A. Site Reclamation Plan for NON-ADAPTABLE STRUCTURES
1. In the course of BOARD review of a SPECIAL USE request, the BOARD may find that a proposed STRUCTURE is a NON-ADAPTABLE STRUCTURE. Any WIND FARM and any PV SOLAR FARM shall be a NON-ADAPTABLE STRUCTURE. The Applicant for the SPECIAL USE request for a NON-ADAPTABLE STRUCTURE shall submit a site reclamation plan to the BOARD for the subject site.
  2. The site reclamation plan shall be binding upon all successors of title to the land. Prior to the issuance of a SPECIAL USE Permit for such NON-ADAPTABLE STRUCTURES, the landowner or applicant shall also record a covenant incorporating the provisions of the site reclamation plan on the deed subject to the LOT, requiring that the reclamation work be performed and that a letter of credit be provided for financial assurance.
  3. Separate cost estimates for Section 6.1.1 A.4.a., 6.1.1 A.4.b., and 6.1.1 A.4.c. shall be provided by an Illinois Licensed Professional Engineer.
    - (a) Cost estimates provided shall be subject to approval of the BOARD.
    - (b) Except as provided in Section 6.1.4 P. and Section 6.1.5 Q., the salvage value of the components of the NON-ADAPTABLE STRUCTURE shall not be credited to the cost estimates.
  4. The site reclamation plan shall provide for:
    - (a) removal of above-ground portion of any STRUCTURE on the subject site; site grading; and, interim soil erosion control;
    - (b) below-ground restoration, including final grading and surface treatment;
    - (c) any environmental remediation required by State or Federal law;
    - (d) provision and maintenance of a letter of credit, as set forth in Section 6.1.1 A.5.

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5. No Zoning Use Permit for such SPECIAL USE will be issued until the applicant provides the COUNTY with an irrevocable letter of credit to be drawn upon a federally insured financial institution within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit. The irrevocable letter of credit shall be in the amount of one hundred fifty percent (150%) of an independent engineer's cost estimate to complete the work described in Section 6.1.1 A.4.a., Section 6.1.1 A.4.b., and Section 6.1.1 A.4.c., except a different amount may be required as a standard condition in Section 6.1.4 P. and Section 6.1.5 Q. This letter of credit, or a successor letter of credit pursuant to Section 6.1.1 A.6. or 6.1.1 A.12. shall remain in effect and shall be made available to the COUNTY for an indefinite term or for a different term that may be required as a standard condition in paragraph 6.1.4 P and 6.1.5 Q.
  
6. One hundred eighty (180) days prior to the expiration date of an irrevocable letter of credit submitted pursuant to this Section, the Zoning Administrator shall notify the landowner or applicant in writing and request information about the landowner or applicant's intent to renew the letter of credit, or remove the NON-ADAPTABLE STRUCTURE. The landowner or applicant shall have thirty (30) days to respond in writing to this request. If the landowner or applicant's intention is to remove the NON-ADAPTABLE STRUCTURE, the landowner or applicant will have a total of ninety (90) days from the date of response to remove it in accordance with Section 6.1.1A.4.a. At the end of ninety (90) days, the Zoning Administrator shall have a period of sixty (60) days to either:
  - (a) confirm that the bank has renewed the letter of credit; or
  - (b) inspect the subject property for compliance with Section 6.1.1 A.4.a.;
  - (c) draw on the letter of credit and commence the bid process to have a contractor remove the NON-ADAPTABLE STRUCTURE pursuant to Section 6.1.1 A.4.a.
  
7. The Zoning Administrator may find a NON-ADAPTABLE STRUCTURE abandoned in place. Factors to be considered in making this finding include, but are not limited to:
  - (a) the nature and frequency of use as set forth in the application for SPECIAL USE;
  - (b) the current nature and frequency of use;



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- (c) whether the NON-ADAPTABLE STRUCTURE has become a public nuisance, or otherwise poses a risk of harm to public health or safety;
  - (d) whether the NON-ADAPTABLE STRUCTURE has been maintained in a manner which allows it to be used for its intended purpose, with no greater effects on surrounding properties and the public as a whole than was originally intended.
  - (e) A court of law, an arbitrator, mediator, or any state or Federal agency charged with enforcing State or Federal law has made a finding that either said NON-ADAPTABLE STRUCTURE or the structures supporting said NON-ADAPTABLE STRUCTURE and/or any related site grading and soil erosion controls or lack of same, constitutes a public nuisance or otherwise violates State or Federal law, or any State or Federal agency charged with enforcing State or Federal law has made a final determination either imposing an administrative sanction on any person associated with the NON-ADAPTABLE STRUCTURE relating to its use or denying the NON-ADAPTABLE STRUCTURE a permit necessary for its lawful operation.
8. Once the Zoning Administrator has made a finding that a NON-ADAPTABLE STRUCTURE is abandoned in place, the Zoning Administrator shall issue notice to the land owner at the owner's last known address that the COUNTY will draw on the performance guarantee within thirty (30) days unless the owner appeals the Zoning Administrator's finding, pursuant to Section 9.1.8 or enters into a written agreement with the COUNTY to remove such NON-ADAPTABLE STRUCTURE in accordance with Section 6.1.1 A.4. within ninety (90) days and removes the NON-ADAPTABLE STRUCTURE accordingly.
9. The Zoning Administrator may draw on the funds to have said NON-ADAPTABLE STRUCTURE removed as per Section 6.1.1 A.4. of the reclamation agreement when any of the following occur:
- (a) no response is received from the land owner within thirty (30) days from initial notification by the Zoning Administrator;
  - (b) the land owner does not enter, or breaches any term of a written agreement with the COUNTY to remove said NON-ADAPTABLE structure as provided in Section 6.1.1 A.8.;
  - (c) any breach or performance failure of any provision of the reclamation agreement;

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- (d) the owner of record has filed a bankruptcy petition, or compromised the COUNTY's interest in the letter of credit in any way to specifically allowed by the reclamation agreement;
  - (e) a court of law has made a finding that a NON-ADAPTABLE STRUCTURE constitutes a public nuisance;
  - (f) the owner of record has failed to replace an expiring letter of credit within the deadlines set forth in Section 6.1.1A.6.; or
  - (g) any other conditions to which the COUNTY and the land owner mutually agree, as set forth in the reclamation agreement.
10. Once the letter of credit has been drawn upon, and the site has been restored to its original condition, as certified by the Zoning Administrator, the covenant entered pursuant to Section 6.1.1. A.2. shall expire, and the COUNTY shall act to remove said covenant from the record of the property at the Recorder of Deeds within forty-five (45) days.
11. The proceeds of the letter of credit may only be used by the COUNTY to:
- (a) remove the NON-ADAPTABLE STRUCTURE and return the site to its condition prior to the placement of the NON-ADAPTABLE STRUCTURE, in accordance with the most recent reclamation agreement submitted and accepted in relation to the NON-ADAPTIVE STRUCTURE;
  - (b) pay all administrative and ancillary costs associated with drawing upon the financial assurance and performing the reclamation work, which shall include, but not be limited to, attorney's fees; construction management and other professional service fees; and the costs of preparing request for proposal and bidding documents required to comply with state law or Champaign County purchasing policies; and
  - (c) remove any covenants placed on the title in conjunction with Section 6.1.1. A.2.
- The balance of any proceeds remaining after the site has been reclaimed shall be returned to the issuer of the letter of credit.
12. Upon transfer of any property subject to a letter of credit pursuant to this Section, the new owner or applicant of record shall submit a new irrevocable letter of credit of same or greater value to the Zoning Administrator, prior to legal transfer of title, and shall submit a new site reclamation plan, pursuant to Section 6.1.1 A.4.a., and, for WIND FARMS, Section 6.1.4 P., and for PV SOLAR FARMS, 6.1.5 Q. Once the new owner or applicant of record has

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done so, the letter of credit posted by the previous owner or applicant shall be released, and the previous owner shall be released from any further obligations under the site reclamation plan.

13. The Applicant shall provide evidence of any new, additional, or substitute financial assurance to the Zoning Administrator throughout the operating lifetime of the NON-ADAPTABLE STRUCTURE.
14. Should the site reclamation plan, or any part of it, be deemed invalid by a court of competent jurisdiction, the associated SPECIAL USE permit shall be deemed void.

**8. Add new subsection 6.1.5 as follows (NOTE: the following new subsection is based on the existing subsection 6.1.4 for “WIND FARM”):**

**6.1.5 PHOTOVOLTAIC (PV) SOLAR FARM County Board SPECIAL USE permit**

A PHOTOVOLTAIC (PV) SOLAR FARM County Board SPECIAL USE permit may only be authorized in the AG-1 Zoning District or the AG-2 Agriculture Zoning District subject to the following standard conditions.

- A. In what follows, PV SOLAR FARM should be understood to include COMMUNITY PV SOLAR FARM unless specified otherwise in the relevant section or paragraph.
- B. General Standard Conditions
  1. The area of the PV SOLAR FARM County Board SPECIAL USE permit must include the following minimum areas:
    - (a) All land that will be exposed to a noise level greater than that authorized to Class A land under paragraph 6.1.5 I.
    - (b) All necessary access lanes or driveways and any required new PRIVATE ACCESSWAYS. For purposes of determining the minimum area of the special use permit, access lanes or driveways shall be provided a minimum 40 feet wide area.
    - (c) All necessary PV SOLAR FARM STRUCTURES and ACCESSORY STRUCTURES including electrical distribution lines, inverters, transformers, common switching stations, and substations not under the ownership of a PUBLICLY REGULATED UTILITY and all waterwells that will provide water for the PV SOLAR FARM. For purposes of determining the minimum area of the special use permit, underground cable installations shall be provided a minimum 40 feet wide area.

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- (d) All aboveground STRUCTURES and facilities shall be of a type and shall be located in a manner that is consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.
2. The PV SOLAR FARM County Board SPECIAL USE permit shall not be located in the following areas:
- a. Less than one-and-one-half miles from an incorporated municipality that has a zoning ordinance unless the following is provided:
- (1) The PV SOLAR FARM SPECIAL USE permit application shall include documentation that the application has provided a complete copy of the SPECIAL USE permit application to any municipality within one-and-one-half miles of the proposed PV SOLAR FARM.
- (2) A municipal Resolution of Non-opposition to the PV SOLAR FARM by any relevant municipality must be submitted to the ZONING ADMINISTRATOR prior to the consideration of the PV SOLAR FARM SPECIAL USE permit by the Champaign County Board.
- b. Less than one-half mile from the CR Conservation Recreation Zoning District.
- c. Any easement for a GAS PIPELINE or HAZARDOUS LIQUID PIPELINE; or any easement for an underground water main; or any easement for a drainage district, unless a crossing agreement has been entered into with the relevant party.
3. Interconnection to the power grid
- a. The PV SOLAR FARM SPECIAL USE permit application shall include documentation that the applicant or PV SOLAR FARM is in the queue to acquire an interconnection agreement to the power grid.
- b. Documentation of an executed interconnection agreement with the appropriate electric utility shall be provided prior to issuance of a Zoning Compliance Certificate to authorize operation of the PV SOLAR FARM.
- C. Minimum Lot Standards
1. There are no minimum LOT AREA, AVERAGE LOT WIDTH, SETBACK, YARD, or maximum LOT COVERAGE requirements for a PV SOLAR FARM or for LOTS for PV SOLAR FARM substations and/ or PV SOLAR FARM maintenance and management facilities.

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2. There is no maximum LOT AREA requirement on BEST PRIME FARMLAND.

D. Minimum Standard Conditions for Separations for PV SOLAR FARM from adjacent USES and STRUCTURES

The location of each PV SOLAR FARM shall provide the following required separations as measured from the exterior of the above ground portion of the PV SOLAR FARM STRUCTURES and equipment except for fencing:

1. A SETBACK of 55 feet from a MINOR STREET and a SETBACK of 75 feet from a COLLECTOR STREET and a SETBACK of 85 feet from a MAJOR STREET.
2. At least 100 feet from any existing DWELLING or existing PRINCIPAL BUILDING and not less than 50 feet from the property line of any adjacent LOT that is three acres or less in area and provided that the noise level caused by the PV SOLAR FARM complies with the applicable Illinois Pollution Control Board regulations.
3. A separation of at least 500 feet from any of the following unless the SPECIAL USE permit application includes results provided from an analysis using the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, Federal Aviation Administration (FAA) Review of Solar Energy Projects on Federally Obligated Airports, or the most recent version adopted by the FAA, and the SGHAT results show no detrimental affect with less than a 500 feet separation from any of the following:
  - (a) any AIRPORT premises or any AIRPORT approach zone within five miles of the end of the AIRPORT runway; or
  - (b) any RESTRICTED LANDING AREA that is NONCONFORMING or which has been authorized by SPECIAL USE permit and that existed on or for which there had been a complete SPECIAL USE permit application received by April 22, 2010, or any approach zone for any such RESTRICTED LANDING AREA; or
  - (c) any RESIDENTIAL AIRPORT that existed on or for which there had been a complete SPECIAL USE permit application received by April 22, 2010, or any approach zone for any such RESIDENTIAL AIRPORT.
4. A separation of at least 500 feet between substations and transmission lines to adjacent dwellings and residential DISTRICTS.

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- E. Standard Conditions for Design and Installation of any PV SOLAR FARM.
1. Any building that is part of a PV SOLAR FARM shall include as a requirement for a Zoning Compliance Certificate a certification by an Illinois Professional Engineer or Illinois Licensed Structural Engineer or other qualified professional that the constructed building conforms to Public Act 96-074 regarding building code compliance and conforms to the Illinois Accessibility Code.
  2. Electrical Components
    - (a) All electrical components of the PV SOLAR FARM shall conform to the National Electrical Code as amended.
    - (b) Burying power and communication wiring underground shall be minimized consistent with best management practice regarding PV solar farm construction and minimizing impacts on agricultural drainage tile.
  3. Maximum height. The height limitation established in Section 5.3 shall not apply to a PV SOLAR FARM. The maximum height of all above ground STRUCTURES shall be identified in the application and as approved in the SPECIAL USE permit.
  4. Warnings
    - (a) A reasonably visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations.
- F. Standard Conditions to Mitigate Damage to Farmland
1. All underground wiring or cabling for the PV SOLAR FARM shall be at a minimum depth of 5 feet below grade or deeper if required to maintain a minimum one foot of clearance between the wire or cable and any agricultural drainage tile or a lesser depth if so authorized by the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.
  2. Protection of agricultural drainage tile
    - (a) The applicant shall endeavor to locate all existing agricultural drainage tile prior to establishing any construction staging areas, construction of any necessary PV SOLAR FARM access lanes or driveways, construction of any PV SOLAR FARM STRUCTURES, any common switching stations, substations, and installation of underground wiring or cabling. The applicant shall contact affected landowners and tenants and the Champaign County Soil and Water

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- Conservation District and any relevant drainage district for their knowledge of tile line locations prior to the proposed construction. Drainage districts shall be notified at least two weeks prior to disruption of tile.
- (b) All identified drainage district tile lines shall be staked or flagged prior to construction to alert construction crews of the possible need for tile line repairs unless this requirement is waived in writing by the drainage district.
  - (c) Any agricultural drainage tile located underneath construction staging areas, access lanes, driveways, any common switching stations, and substations shall be replaced as required in Section 6.3 of the Champaign County Champaign County Storm Water Management and Erosion Control Ordinance.
  - (d) Any agricultural drainage tile that must be relocated shall be relocated as required in the Champaign County Champaign County Storm Water Management and Erosion Control Ordinance.
  - (e) Conformance of any relocation of drainage district tile with the in the Champaign County Champaign County Storm Water Management and Erosion Control Ordinance shall be certified by an Illinois Professional Engineer. Written approval by the drainage district shall be received prior to any backfilling of the relocated drain tile and a copy of the approval shall be submitted to the Zoning Administrator. As-built drawings shall be provided to both the relevant drainage district and the Zoning Administrator of any relocated drainage district tile.
  - (f) All tile lines that are damaged, cut, or removed shall be staked or flagged in such manner that they will remain visible until the permanent repairs are completed.
  - (g) All exposed tile lines shall be screened or otherwise protected to prevent the entry into the tile of foreign materials, loose soil, small mammals, etc.
  - (h) Permanent tile repairs shall be made within 14 days of the tile damage provided that weather and soil conditions are suitable or a temporary tile repair shall be made. Immediate temporary repair shall also be required if water is flowing through any damaged tile line. Temporary repairs are not needed if the tile lines are dry and water is not flowing in the tile provided the permanent repairs can be made within 14 days of the damage. All permanent and temporary tile repairs shall be made as detailed in the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as

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required by paragraph 6.1.5 R. and shall not be waived or modified except as authorized in the SPECIAL USE Permit.

- (i) All damaged tile shall be repaired so as to operate as well after construction as before the construction began.
- (j) Following completion of the PV SOLAR FARM construction the applicant shall be responsible for correcting all tile line repairs that fail, provided that the failed repair was made by the Applicant.

3. All soil conservation practices (such as terraces, grassed waterways, etc.) that are damaged by PV SOLAR FARM construction shall be restored by the applicant to the pre- PV SOLAR FARM construction condition in a manner consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.

4. Topsoil replacement

For any open trenching required pursuant to PV SOLAR FARM construction, the topsoil shall be stripped and replaced as follows:

- (a) The top 12 inches of topsoil shall first be stripped from the area to be trenched and from an adjacent area to be used for subsoil storage. The topsoil shall be stored in a windrow parallel to the trench in such a manner that it will not become intermixed with subsoil materials.
- (b) All subsoil material that is removed from the trench shall be placed in the second adjacent stripped windrow parallel to the trench but separate from the topsoil windrow.
- (c) In backfilling the trench, the stockpiled subsoil material shall be placed back into the trench before replacing the topsoil.
- (d) The topsoil must be replaced such that after settling occurs, the topsoil's original depth and contour (with an allowance for settling) will be restored.
- (e) All topsoil shall be placed in a manner consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.

5. Mitigation of soil compaction and rutting

- (a) The Applicant shall not be responsible for mitigation of soil compaction and rutting if exempted by the PV SOLAR FARM lease.



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- (b) Unless specifically provided for otherwise in the PV SOLAR FARM lease, the Applicant shall mitigate soil compaction and rutting for all areas of farmland that were traversed with vehicles and construction equipment or where topsoil is replaced in open trenches.
- (c) All mitigation of soil compaction and rutting shall be consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.

6. Land leveling

- (a) The Applicant shall not be responsible for leveling of disturbed land if exempted by the PV SOLAR FARM lease.
- (b) Unless specifically provided for otherwise in the PV SOLAR FARM lease, the Applicant shall level all disturbed land as follows:
  - (1) Following the completion of any open trenching, the applicant shall restore all land to its original pre-construction elevation and contour.
  - (2) Should uneven settling occur or surface drainage problems develop as a result of the trenching within the first year after completion, the applicant shall again restore the land to its original pre-construction elevation and contour.
- (c) All land leveling shall be consistent with the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R.

7. Permanent Erosion and Sedimentation Control Plan

- (a) Prior to the approval of any Zoning Use Permit, the Applicant shall provide a permanent soil erosion and sedimentation plan for the PV SOLAR FARM including any access road that conforms to the relevant Natural Resources Conservation Service guidelines and that is prepared by an Illinois Licensed Professional Engineer.
- (b) As-built documentation of all permanent soil erosion and sedimentation improvements for the PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer shall be submitted and accepted by the Zoning Administrator prior to approval of any Zoning Compliance Certificate.

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## 8. Retention of all topsoil

No topsoil may be removed, stripped, or sold from the proposed SPECIAL USE Permit site pursuant to or as part of the construction of the PV SOLAR FARM.

## G. Standard Conditions for Use of Public Streets

Any PV SOLAR FARM Applicant proposing to use any County Highway or a township or municipal STREET for the purpose of transporting PV SOLAR FARM or Substation parts and/or equipment for construction, operation, or maintenance of the PV SOLAR FARM or Substations(s), shall identify all such public STREETS and pay the costs of any necessary permits and the costs to repair any damage to the STREETS caused by the PV SOLAR FARM construction, as follows:

1. Prior to the close of the public hearing before the BOARD, the Applicant shall enter into a Roadway Upgrade and Maintenance agreement approved by the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, except for any COMMUNITY PV SOLAR FARM for which the relevant highway authority has agreed in writing to waive the requirements of subparagraphs 6.1.5 F.1., 2., and 3., and the signed and executed Roadway Upgrade and Maintenance agreements must provide for the following minimum conditions:
  - (a) The applicant shall agree to conduct a pre- PV SOLAR FARM construction baseline survey to determine existing STREET conditions for assessing potential future damage including the following:
    - (1) A videotape of the affected length of each subject STREET supplemented by photographs if necessary.
    - (2) Pay for costs of the County to hire a consultant to make a study of any structure on the proposed route that the County Engineer feels may not carry the loads likely during the PV SOLAR FARM construction.
    - (3) Pay for any strengthening of STREET structures that may be necessary to accommodate the proposed traffic loads caused by the PV SOLAR FARM construction.
  - (b) The Applicant shall agree to pay for costs of the County Engineer to hire a consultant to make a study of any structure on the proposed route that the County Engineer feels may not carry the loads likely during the PV SOLAR FARM construction and pay for any strengthening of structures that may be necessary to accommodate the proposed traffic loads caused by the PV SOLAR FARM construction.

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- (c) The Applicant shall agree upon an estimate of costs for any other necessary roadway improvements prior to construction.
- (d) The Applicant shall obtain any necessary approvals for the STREET improvements from the relevant STREET maintenance authority.
- (e) The Applicant shall obtain any necessary Access Permits including any required plans.
- (f) The Applicant shall erect permanent markers indicating the presence of underground cables.
- (g) The Applicant shall install marker tape in any cable trench.
- (h) The Applicant shall become a member of the Illinois state wide One-Call Notice System (otherwise known as the Joint Utility Locating Information for Excavators or "JULIE") and provide JULIE with all of the information necessary to update its record with respect to the PV SOLAR FARM.
- (i) The Applicant shall use directional boring equipment to make all crossings of County Highways for the cable collection system.
- (j) The Applicant shall notify the STREET maintenance authority in advance of all oversize moves and crane crossings.
- (k) The Applicant shall provide the County Engineer with a copy of each overweight and oversize permit issued by the Illinois Department of Transportation for PV SOLAR FARM construction.
- (l) The Applicant shall transport the PV SOLAR FARM loads so as to minimize adverse impact on the local traffic including farm traffic.
- (m) The Applicant shall schedule PV SOLAR FARM construction traffic in a way to minimize adverse impacts on emergency response vehicles, rural mail delivery, school bus traffic, and local agricultural traffic.
- (n) The Applicant shall provide as much advance notice as is commercially reasonable to obtain approval of the STREET maintenance authority when it is necessary for a STREET to be closed due to a crane crossing or for any other reason. Notwithstanding the generality of the aforementioned, the Applicant will provide 48 hours notice to the extent reasonably practicable.

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- (o) The Applicant shall provide signs indicating all highway and STREET closures and work zones in accordance with the Illinois Department of Transportation Manual on Uniform Traffic Control Devices.
  - (p) The Applicant shall establish a single escrow account and a single Irrevocable Letter of Credit for the cost of all STREET upgrades and repairs pursuant to the PV SOLAR FARM construction.
  - (q) The Applicant shall notify all relevant parties of any temporary STREET closures.
  - (r) The Applicant shall obtain easements and other land rights needed to fulfill the Applicant's obligations under this Agreement.
  - (s) The Applicant shall agree that the County shall design all STREET upgrades in accordance with the IDOT Bureau of Local Roads and Streets Manual, 2005 edition.
  - (t) The Applicant shall provide written Notice to Proceed to the relevant STREET maintenance authority by December 31 of each year that identifies the STREETS to be upgraded during the following year.
  - (u) The Applicant shall provide dust control and grading work to the reasonable satisfaction of the County Engineer on STREETS that become aggregate surface STREETS.
  - (v) The Applicant shall conduct a post- PV SOLAR FARM construction baseline survey similar to the pre- PV SOLAR FARM construction baseline survey to identify the extent of repairs necessary to return the STREET to the pre- PV SOLAR FARM construction condition.
  - (w) The Applicant shall pay for the cost of all repairs to all STREETS that are damaged by the Applicant during the construction of the PV SOLAR FARM and restore such STREETS to the condition they were in at the time of the pre- PV SOLAR FARM construction inventory.
  - (x) All PV SOLAR FARM construction traffic shall exclusively use routes designated in the approved Transportation Impact Analysis.
  - (y) The Applicant shall provide liability insurance in an acceptable amount to cover the required STREET construction activities.
  - (z) The Applicant shall pay for the present worth costs of life consumed by the construction traffic as determined by the pavement management surveys and reports on the roads which do not show significant enough deterioration to warrant immediate restoration.

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- (aa) Provisions for expiration date on the agreement.
  - (bb) Other conditions that may be required.
2. A condition of the County Board Special Use Permit approval shall be that the Zoning Administrator shall not authorize a Zoning Use Permit for the PV SOLAR FARM until the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, has approved a Transportation Impact Analysis provided by the Applicant and prepared by an independent engineer that is mutually acceptable to the Applicant and the County Engineer and State's Attorney; or Township Highway Commissioner; or municipality where relevant, that includes the following:
- (a) Identify all such public STREETS or portions thereof that are intended to be used by the Applicant during construction of the PV SOLAR FARM as well as the number of loads, per axle weight of each load; and type of equipment that will be used to transport each load.
  - (b) A schedule of the across road culverts and bridges affected by the project and the recommendations as to actions, if any, required with respect to such culverts and bridges and estimated of the cost to replace such culverts and bridges;
  - (c) A schedule of the anticipated STREET repair costs to be made in advance of the PV SOLAR FARM construction and following construction of the PV SOLAR FARM.
  - (d) The Applicant shall reimburse the County Engineer; or Township Highway Commissioner; or municipality where relevant, for all reasonable engineering fees including the costs of a third party consultant, incurred in connection with the review and approval of the Transportation Impact Analysis.
3. At such time as decommissioning takes place the Applicant or its successors in interest shall enter into a Roadway use and Repair Agreement with the appropriate highway authority.

**H. Standard Conditions for Coordination with Local Fire Protection District**

- 1. The Applicant shall submit to the local fire protection district a copy of the site plan.
- 2. Upon request by the local fire protection district, the Owner or Operator shall cooperate with the local fire protection district to develop the fire protection district's emergency response plan.

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3. Nothing in this section shall alleviate the need to comply with all other applicable fire laws and regulations.

I. Standard Conditions for Allowable Noise Level

1. Noise levels from any PV SOLAR FARM shall be in compliance with the applicable Illinois Pollution Control Board (IPCB) regulations (*35 Illinois Administrative Code* Subtitle H: Noise Parts 900, 901, 910).
2. The Applicant shall submit manufacturer's sound power level characteristics and other relevant data regarding noise characteristics of proposed PV SOLAR FARM equipment necessary for a competent noise analysis.
3. The Applicant, through the use of a qualified professional, as part of the siting approval application process, shall appropriately demonstrate compliance with the above noise requirements.
4. After construction of the PV SOLAR FARM the Zoning Administrator shall take appropriate enforcement action as necessary to investigate noise complaints in order to determine the validity of the complaints and take any additional enforcement action as proves warranted to stop any violation that is occurring, including but not limited to the following:
  - (a) The Zoning Administrator shall make the Environment and Land Use Committee aware of complaints about noise that have been received by the Complaint Hotline.
  - (b) If the Environment and Land Use Committee determines that the noise is excessive, the Environment and Land Use Committee shall require the Owner or Operator to take reasonable steps to mitigate the excessive noise.

J. Standard Conditions for Endangered Species Consultation

The Applicant shall apply for consultation with the Endangered Species Program of the Illinois Department of Natural Resources. The Application shall include a copy of the Agency Action Report from the Endangered Species Program of the Illinois Department of Natural Resources or, if applicable, a copy of the Detailed Action Plan Report submitted to the Endangered Species Program of the Illinois Department of Natural Resources and a copy of the response from the Illinois Department of Natural Resources.

K. Standard Conditions for Historic and Archaeological Resources Review

The Applicant shall apply for consultation with the State Historic Preservation Officer of the Illinois Department of Natural Resources. The Application shall

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include a copy of the Agency Action Report from the State Historic Preservation Officer of the Illinois Department of Natural Resources.

## L. Standard Conditions for Acceptable Wildlife Impacts

1. The PV SOLAR FARM shall be located, designed, constructed, and operated so as to avoid and if necessary mitigate the impacts to wildlife to a sustainable level of mortality.

## M. Screening and fencing

## 1. Perimeter fencing

- (a) PV SOLAR FARM equipment and structures shall be fully enclosed and secured by a fence with a minimum height of 7 feet.
- (b) Knox boxes and keys shall be provided at locked entrances for emergency personnel access.
- (c) The perimeter fencing shall be a minimum of 10 feet from a SIDE or REAR LOT LINE but not less than 25 feet from the property line of any adjacent LOT that is three acres or less in area and a minimum of 40 feet from a MINOR STREET and a minimum of 55 feet from a COLLECTOR STREET and a minimum of 60 feet from a MAJOR STREET but in no case shall the perimeter fencing be less than 10 feet from the RIGHT OF WAY of any STREET.
- (d) Vegetation between the fencing and the LOT LINE shall be maintained such that NOXIOUS WEEDS are controlled or eradicated consistent with the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.). Management of the vegetation shall be explained in the application.

## 2. Screening

- (a) A visual screen shall be provided around the perimeter of the PV SOLAR FARM as follows:
  - (1) The visual screen shall be provided for any part of the PV SOLAR FARM that is visible to and located within 1,000 feet of a DWELLING or residential DISTRICT. However, the visual screen shall not be required if the PV SOLAR FARM is not visible to a DWELLING or residential DISTRICT by virtue of the existing topography.
  - (2) The visual screen shall be waived if the owner(s) of a relevant DWELLING(S) have agreed in writing to waive the

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screening requirement and a copy of the written waiver is submitted to the BOARD or GOVERNING BODY.

- (3) The visual screen shall be a vegetated buffer as follows:
- (a) A vegetated visual screen buffer shall include a continuous line of evergreen foliage and/ or any existing wooded area and/ or tallgrass prairie plantings that will conceal the PV SOLAR FARM from view from adjacent abutting property.
  - (b) Any vegetation that is part of the approved visual screen buffer shall be maintained in perpetuity.
  - (c) The continuous line of evergreen foliage shall be planted at a minimum height of 5 feet tall and shall be planted in multiple rows as required to provide a 50% screen within 2 years of planting. If the evergreen foliage below a height of 7 feet disappears over time, the screening shall be replaced.
  - (d) A tallgrass prairie planting may be used as a visual screen buffer for any PV module installation that is no more than 8 feet tall and the planting shall be at least 10 feet wide and shall be planted and maintained per the recommendations of the Natural Resources Conservation Service.
  - (e) Any vegetated screen buffer shall be detailed in a landscape plan drawing that shall be included with the PV SOLAR FARM SPECIAL USE permit application.

N. Standard Condition to Minimize Glare

1. The design and construction of the PV SOLAR FARM shall minimize glare that may affect adjacent properties and the application shall include an explanation of how glare will be minimized.
2. After construction of the PV SOLAR FARM the Zoning Administrator shall take appropriate enforcement action as necessary to investigate complaints of glare in order to determine the validity of the complaints and take any additional enforcement action as proves warranted to stop any significant glare that is occurring, including but not limited to the following:
  - (a) The Zoning Administrator shall make the Environment and Land Use Committee aware of complaints about glare that have been received by the Complaint Hotline.



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- (b) If the Environment and Land Use Committee determines that the glare is excessive, the Environment and Land Use Committee shall require the Owner or Operator to take reasonable steps to mitigate the excessive glare such as the installation of additional screening.

O. Standard Condition for Liability Insurance

- 1. The Owner or Operator of the PV SOLAR FARM shall maintain a current general liability policy covering bodily injury and property damage with minimum limits of a least \$5 million per occurrence and \$5 million in the aggregate.
- 2. The general liability policy shall identify landowners in the SPECIAL USE permit as additional insured.

P. Operational Standard Conditions

1. Maintenance

- (a) The Owner or Operator of the PV SOLAR FARM must submit, on an annual basis, a summary of the operation and maintenance reports to the Environment and Land Use Committee and any other operation and maintenance reports as the Environment and Land Use Committee reasonably requests.
- (b) Any physical modification to the PV SOLAR FARM that increases the number of solar conversion devices or structures and/ or the land area occupied by the PV SOLAR FARM shall require a new County Board SPECIAL USE Permit. Like-kind replacements shall not require re-certification nor will replacement of transformers, cabling, etc. provided replacement is done in a fashion similar to the original installation.
- (c) The Application shall explain methods and materials used to clean the PV SOLAR FARM equipment including an estimation of the daily and annual gallons of water used and the source of the water and the management of wastewater. The BOARD may request copies of well records from the Illinois State Water Survey and may require an estimate by a qualified hydrogeologist of the likely impact on adjacent waterwells.

2. Materials Handling, Storage and Disposal

- (a) All solid wastes related to the construction, operation and maintenance of the PV SOLAR FARM shall be removed from the site promptly and disposed of in accordance with all federal, state and local laws.

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(b) All hazardous materials related to the construction, operation and maintenance of the PV SOLAR FARM shall be handled, stored, transported and disposed of in accordance with all applicable local, state and federal laws.

3. Vegetation management

(a) The PV SOLAR FARM SPECIAL USE permit application shall include a weed control plan for the total area of the SPECIAL USE permit including areas both inside of and outside of the perimeter fencing.

(b) The weed control plan shall ensure the control and/ or eradication of NOXIOUS WEEDS consistent with the Illinois Noxious Weed Law (505 ILCS 100/1 et seq.)

(c) The weed control plan shall be explained in the application.

Q. Standard Condition for Decommissioning Plan and Site Reclamation Plan

1. The Applicant shall submit a signed site reclamation plan conforming to the requirements of paragraph 6.1.1 A.

2. In addition to the purposes listed in subparagraph 6.1.1 A.4. the reclamation plan shall also include provisions for anticipated repairs to any public STREET used for the purpose of reclamation of the PV SOLAR FARM and all costs related to removal of access driveways.

3. The site reclamation plan required in paragraph 6.1.1 A. shall also include the following:

(a) A stipulation that the applicant shall notify the GOVERNING BODY by certified mail of the commencement of voluntary or involuntary bankruptcy proceeding, naming the applicant as debtor, within ten days of commencement of the proceeding.

(b) A stipulation that the applicant shall agree that the sale, assignment in fact or law, or such other transfer of applicant's financial interest in the PV SOLAR FARM shall in no way affect or change applicant's obligation to continue to comply with the terms of this plan. Any successor or assignee shall assume the terms, covenants, and obligations of this plan and agrees to assume all reclamation liability and responsibility for the PV SOLAR FARM.

(c) Authorization for the GOVERNING BODY and its authorized representatives for right of entry onto the PV SOLAR FARM

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premises for the purpose of inspecting the methods of reclamation or for performing actual reclamation if necessary.

- (d) A stipulation that at such time as decommissioning takes place the applicant or its successors in interest are required to enter into a Roadway Use and Repair Agreement with the relevant highway authority.
- (e) A stipulation that the Applicant shall provide evidence of any new, additional, or substitute financing or security agreement to the Zoning Administrator throughout the operating lifetime of the project.
- (f) A stipulation that the Applicant shall be obliged to perform the work in the site reclamation plan before abandoning the PV SOLAR FARM or prior to ceasing production of electricity from the PV SOLAR FARM, after it has begun, other than in the ordinary course of business. This obligation shall be independent of the obligation to pay financial assurance, and shall not be limited by the amount of financial assurance. The obligation to perform the reclamation work shall constitute a covenant running with the land
- (g) The site reclamation plan shall provide for payment of any associated costs that Champaign County may incur in the event that decommissioning is actually required. Associated costs include all administrative and ancillary costs associated with drawing upon the financial assurance and performing the reclamation work and shall include but not be limited to attorney's fees; construction management and other professional service fees; and the costs of preparing request for proposals and bidding documents required to comply with state law or Champaign County purchasing policies.
- (h) The depth of removal of foundation concrete below ground shall be a minimum of 54 inches. The depth of removal of foundation concrete shall be certified in writing by an Illinois Licensed Professional Engineer and the certification shall be submitted to the Zoning Administrator.
- (i) Underground electrical cables at a depth of 5 feet or greater may be left in place.
- (j) The hole resulting from the removal of foundation concrete during decommissioning shall be backfilled as follows:
  - (1) The excavation resulting from the removal of foundation concrete shall only be backfilled with subsoil and topsoil in similar depths and similar types as existed at the time of the original PV SOLAR FARM construction except that a lesser

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quality topsoil or a combination of a lesser quality topsoil and a subsoil that is similar to the native subsoil may be used at depths corresponding to the native subsoil but not less than 12 inches below grade.

- (2) The native soils excavated at the time of the original PV SOLAR FARM construction may be used to backfill the concrete foundation excavations at the time of decommissioning provided that the soils are adequately stored throughout the operating lifetime of the PV SOLAR FARM. The methods for storing the excavated native soils during the operating lifetime of the PV SOLAR FARM shall be included in the site reclamation plan.
- (3) If the excavated native soils are not stored for use for backfilling the concrete foundation excavations, a qualified soil scientist or Illinois Licensed Professional Engineer shall certify that the actual soils used to backfill the concrete foundation excavations are of equal or greater quality than the native soils or that, in the case of subsoil, the backfill soil meets the requirements of this paragraph. The certification shall be submitted to the Zoning Administrator.
- (4) An Illinois Licensed Professional Engineer shall certify in writing that the concrete foundation excavations have been backfilled with soil to such a depth and with a minimum of compaction that is consistent with the restoration of productive agricultural use such that the depth of soil is expected to be no less than 54 inches within one year after backfilling.
- (k) A stipulation that should the site reclamation plan be deemed invalid by a court of competent jurisdiction the PV SOLAR FARM SPECIAL USE permit shall be deemed void.
- (l) A stipulation that the Applicant's obligation to complete the site reclamation plan and to pay all associated costs shall be independent of the Applicant's obligation to provide financial assurance.
- (m) A stipulation that the liability of the Applicant's failure to complete the site reclamation plan or any breach of the site reclamation plan requirement shall not be capped by the amount of the financial assurance.
- (n) If the Applicant desires to remove equipment or property credited to the estimated salvage value without the concurrent replacement of the property with property of equal or greater salvage value or if the

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Applicant installs equipment or property increasing the cost of decommissioning after the PV SOLAR FARM begins to produce electricity, at any point, the Applicant shall first obtain the consent of the Zoning Administrator. If the Applicant's lien holders remove equipment or property credited to the salvage value the Applicant shall promptly notify the Zoning Administrator. In either of these events the total financial assurance shall be adjusted to reflect any change in total salvage value and total decommissioning costs resulting from any such removal or installation.

4. To comply with paragraph 6.1.1 A.5., the Applicant shall provide financial assurance in the form of an irrevocable letter of credit and an escrow account as follows:
- (a) At the time of Special Use Permit approval the amount of financial assurance to be provided for the site reclamation plan shall be 125% of the decommissioning cost as determined in the independent engineer's cost estimate to complete the decommissioning work described in Sections 6.1.1 A.4.a. and 6.1.1 A.4.b. and 6.1.1 A.4.c. and shall otherwise comply with Section 6.1.1 A.5.
  - (b) Net salvage value may be deducted from decommissioning costs as follows:
    - (1) One of the following standards shall be met:
      - a. The Applicant shall maintain the PV SOLAR FARM free and clear of liens and encumbrances, including financing liens and shall provide proof of the same prior to issuance of the SPECIAL USE Permit; or
      - b. The Applicant shall deduct from the salvage value credit the amount of any lien or encumbrance on the PV SOLAR FARM; or
      - c. Any and all financing and/or financial security agreements entered into by the Applicant shall expressly provide that the agreements are subject to the covenant required by Section 6.1.1. A.2 that the reclamation work be done.
    - (2) The Applicant shall provide proof of compliance with paragraph 6.1.5 Q.4.(b)(1) prior to issuance of any Zoning Use Permit and upon every renewal of the financial assurance and at any other time upon the request of the Zoning Administrator.

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- (3) The Applicant shall provide in the site reclamation plan for legal transfer of the STRUCTURE to the demolisher to pay the costs of reclamation work, should the reclamation work be performed.
  - (4) The net estimated salvage value that is deducted from the estimated decommissioning costs shall be the salvage value that results after all related costs for demolition and any required preparation for transportation for reuse or recycling or for simple disposal and other similar costs including but not limited to the decommissioning of the PV SOLAR FARM STRUCTURES, equipment, and access roads.
  - (5) Estimated salvage value shall be based on the average salvage price of the past five years as published in a reputable source for salvage values and shall reflect sound engineering judgment as to anticipated changes in salvage prices prior to the next update of estimated net salvage value.
  - (6) The deduction from the estimated decommissioning costs for net estimated salvage value shall be capped at 70% of the total net estimated salvage value even though the total actual salvage value shall be available in the event that decommissioning is actually required.
  - (7) The total financial assurance after deduction of the net estimated salvage value shall not be less than \$1,000 per acre.
  - (8) The credit for net estimated salvage value attributable to any PV SOLAR FARM may not exceed the estimated cost of removal of the above-ground portion of that PV SOLAR FARM on the subject site.
- (c) The GOVERNING BODY has the right to require multiple letters of credit based on the regulations governing federal insurance for deposits.
  - (d) The Applicant shall adjust the amount of the financial assurance to ensure that it reflects current and accurate information as follows:
    - (1) At least once every three years for the first 12 years of the financial assurance and at least once every two years thereafter the Applicant shall use an independent Illinois Licensed Professional Engineer to provide updated estimates of decommissioning costs and salvage value, by including any changes due to inflation and/or change in salvage price. The Applicant shall, upon receipt, provide a copy of the adjusted Professional Engineer's report to the Zoning Administrator.

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- (2) At all times the total combined value of the irrevocable letter of credit and the escrow account shall equal or exceed the amount of the independent engineer's cost estimate as increased by known and documented rates of inflation based on the Consumer Price Index since the PV SOLAR FARM was approved.
- (e) The applicant or PV SOLAR FARM owner shall gradually pay down the value of the irrevocable letter of credit by placing cash deposits in an escrow account in equal annual installments over the first 13 years of the PV SOLAR FARM operation as follows:
- (1) The applicant or PV SOLAR FARM owner and the GOVERNING BODY shall agree on a mutually acceptable financial institution at which an escrow account shall be established.
  - (2) The GOVERNING BODY shall be the beneficiary of the escrow account for the purpose of the reclamation of the PV SOLAR FARM in the event that the PV SOLAR FARM owner is incapable of decommissioning the PV SOLAR FARM.
  - (3) The applicant or PV SOLAR FARM owner shall grant perfected security in the escrow account by use of a control agreement establishing the County as an owner of record, pursuant to the Secured Transactions Article of the Uniform Commercial Code, 810 ILCS 9/101 et seq.
  - (4) The applicant or PV SOLAR FARM owner shall make annual deposits to the escrow account over a 12 year period and shall simultaneously provide a replacement irrevocable letter of credit that is reduced accordingly.
  - (5) At all times the total combined value of the irrevocable letter of credit and the escrow account shall be increased annually as necessary to reflect actual rates of inflation over the life span of the PV SOLAR FARM and the amount shall be equal to or exceed 125% of the amount of the independent engineer's cost estimate as increased by known and documented rates of inflation since the PV SOLAR FARM was approved;
  - (6) Any interest accrued on the escrow account that is over and above the total value required by subparagraph 6.1.5 Q.4.(b)(4) shall go to the PV SOLAR FARM owner.
  - (7) In order to provide funding for decommissioning at the time of decommissioning, the PV SOLAR FARM applicant or PV

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SOLAR FARM owner may exchange a new irrevocable letter of credit in an amount equal to the amount in the escrow account in exchange for the GOVERNING BODY agreeing to a release of the full amount of the escrow account.

- (f) Should the salvage value of components be adjusted downward or the decommissioning costs adjusted upward pursuant to paragraph 6.1.5 Q.4.(d), the amount to be placed in the escrow account pursuant to this paragraph 6.1.5. Q.4. shall be increased to reflect the adjustment, as if the adjusted estimate were the initial estimate.
  - (g) Any financial assurance required per the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 R. shall count towards the total financial assurance required for compliance with paragraph 6.1.1 A.5.
  - (h) Unless the Governing Body approves otherwise, the Champaign County State's Attorney's Office shall review and approve every Letter of Credit and every agreement regarding the Escrow Account prior to formal acceptance by the Zoning Administrator.
5. In addition to the conditions listed in subparagraph 6.1.1 A.9. the Zoning Administrator may also draw on the funds for the following reasons:
- (a) In the event that any PV SOLAR FARM or component thereof ceases to be functional for more than six consecutive months after it starts producing electricity and the Owner is not diligently repairing such PV SOLAR FARM or component.
  - (b) In the event that the Owner declares the PV SOLAR FARM any PV SOLAR FARM component to be functionally obsolete for tax purposes.
  - (c) There is a delay in the construction of any PV SOLAR FARM of more than 6 months after construction on that PV SOLAR FARM begins.
  - (d) Any PV SOLAR FARM or component thereof that appears in a state of disrepair or imminent collapse and/or creates an imminent threat to the health or safety of the public or any person.
  - (e) Any PV SOLAR FARM or component thereof is otherwise derelict for a period of 6 months.
  - (f) The PV SOLAR FARM is in violation of the terms of the PV SOLAR FARM SPECIAL USE permit for a period exceeding ninety (90) days.



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- (g) The Applicant has failed to maintain financial assurance in the form and amount required by the special use permit or compromised the COUNTY's interest in the site reclamation plan.
  - (h) The COUNTY discovers any material misstatement of fact or misleading omission of fact made by the Applicant in the course of the special use permit zoning case.
  - (i) The Applicant has either failed to receive a copy of the certification of design compliance required by paragraph 6.1.5 D. or failed to submit it to the County within 12 consecutive months of receiving a Zoning Use Permit regardless of the efforts of the Applicant to obtain such certification.
6. The Zoning Administrator may, but is not required to, deem the PV SOLAR FARM abandoned, or the standards set forth in Section 6.1.5 P.5. met, with respect to some, but not all, of the PV SOLAR FARM. In that event, the Zoning Administrator may draw upon the financial assurance to perform the reclamation work as to that portion of the PV SOLAR FARM only. Upon completion of that reclamation work, the salvage value and reclamation costs shall be recalculated as to the remaining PV SOLAR FARM.
7. The Site Reclamation Plan shall be included as a condition of approval by the BOARD and the signed and executed irrevocable letter of credit and evidence of the escrow account must be submitted to the Zoning Administrator prior to any Zoning Use Permit approval.
- R. Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
- 1. The Applicant shall enter into an Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
  - 2. The Applicant shall bear full responsibility for coordinating any special conditions required in the SPECIAL USE Permit in order to ensure compliance with the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture.
  - 3. All requirements of the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture shall become requirements of the County Board SPECIAL USE Permit.
  - 4. Champaign County shall have the right to enforce all requirements of the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture

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S. Complaint Hotline

1. Prior to the commencement of construction on the PV SOLAR FARM and during the entire term of the County Board SPECIAL USE permit and any extension, the Applicant and Owner shall establish a telephone number hotline for the general public to call with any complaints or questions.
2. The telephone number hotline shall be publicized and posted at the operations and maintenance center and the construction marshalling yard.
3. The telephone number hotline shall be manned during usual business hours and shall be an answering recording service during other hours.
4. Each complaint call to the telephone number hotline shall be logged and identify the name and address of the caller and the reason for the call.
5. All calls shall be recorded and the recording shall be saved for transcription for a minimum of two years.
6. A copy of the telephone number hotline shall be provided to the Zoning Administrator on a monthly basis.
7. The Applicant and Owner shall take necessary actions to resolve all legitimate complaints.

T. Standard Condition for Expiration of PV SOLAR FARM County Board SPECIAL USE Permit

A PV SOLAR FARM County Board SPECIAL USE Permit designation shall expire in 10 years if no Zoning Use Permit is granted.

U. Application Requirements

1. In addition to all other information required on the SPECIAL USE Permit application and required by Section 9.1.11 A.2. the application shall contain or be accompanied by the following information:
  - (a) A PV SOLAR FARM Project Summary, including, to the extent available:
    - (1) A general description of the project, including its approximate DC and AC generating capacity; the maximum number and type of solar devices; the potential equipment manufacturer(s).
    - (2) The specific proposed location of the PV SOLAR FARM including all tax parcels on which the PV SOLAR FARM will be constructed.

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- (3) The specific proposed location of all tax parcels required to be included in the PV SOLAR FARM County Board SPECIAL USE Permit.
  - (4) A description of the Applicant; Owner and Operator, including their respective business structures.
- (b) The name(s), address(es), and phone number(s) of the Applicant(s), Owner and Operator, and all property owner(s) for the PV SOLAR FARM County Board SPECIAL USE permit.
- (c) A site plan for the SOLAR FARM indicating the following:
- (1) The approximate planned location of all PV SOLAR FARM STRUCTURES, property lines (including identification of adjoining properties), required separations, public access roads and turnout locations, access driveways, solar devices, electrical inverter(s), electrical transformer(s), cabling, switching station, electrical cabling from the PV SOLAR FARM to the Substations(s), ancillary equipment, screening and fencing, third party transmission lines, meteorological station, maintenance and management facilities, and layout of all structures within the geographical boundaries of any applicable setback.
  - (2) The site plan shall clearly indicate the area of the proposed PV SOLAR FARM County Board SPECIAL USE Permit as required by subparagraph 6.1.5 A.1.
  - (3) The location of all below-ground wiring.
  - (4) The location, height, and appearance of all above-ground wiring and wiring structures.
  - (5) The separation of all PV SOLAR FARM structures from adjacent DWELLINGS and/ or PRINCIPAL BUILDINGS or uses shall be dimensioned on the approved site plan and that dimension shall establish the effective minimum separation that shall be required for any Zoning Use Permit. Greater separation and somewhat different locations may be provided in the approved site plan for the Zoning Use Permit provided that that the greater separation does not increase the noise impacts and /or glare that were approved in the PV SOLAR FARM County Board SPECIAL USE Permit. PV SOLAR FARM structures includes substations, third party transmission lines, maintenance and management facilities, or other significant structures.

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- (d) All other required studies, reports, certifications, and approvals demonstrating compliance with the provisions of this Ordinance.
- 2. The Applicant shall notify the COUNTY of any changes to the information provided above that occurs while the County Board SPECIAL USE permit application is pending.
- 3. The Applicant shall include a copy of the signed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture with the Zoning Use Permit Application to authorize construction.

**9. Add the following paragraph 9.3.1 J. for Zoning Use Permit fee:**

- J. PV SOLAR FARM with not more than 7.5 megawatt nameplate rating.....  
\$1,800 per megawatt (includes COMMUNITY PV SOLAR FARM)
  
- PV SOLAR FARM with nameplate rating of more than 7.5 megawatts.....  
\$13,500 plus \$1,260 for each megawatt more than 7.5 megawatts

**10. Revise subsection 9.3.3 as follows:**

**9.3.3 Zoning Case Filing Fees**

- A. General Provisions
  - 1. No zoning case filing shall be accepted until the filing fee has been paid.
  - 2. No zoning case filing fee shall be waived unless the Zoning Administrator determines that the petition is the only means reasonably available to bring a property into compliance with the provisions of this ordinance and the non-compliance is due solely to staff error.
  - 3. No zoning case filing fee shall be refunded after required legal notice has been made by mail or publication unless the Zoning Administrator determines such filing to have been based solely upon staff error.
  - 4. No amendment to any petition which requires new legal notice shall be considered until an amended petition fee has been received unless the Zoning Administrator determines such amendment to be required due solely to staff error.
  - 5. The fee for SPECIAL USE permits shall be determined based on the larger of the following (except for County Board WIND FARM or PV SOLAR FARM SPECIAL USE Permits):

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- (a) the area of farmland taken out of production as a result of the SPECIAL USE; or
  - (b) when farmland will not be taken out of production as a result of the SPECIAL USE, the land area taken up by the existing STRUCTURES and all proposed CONSTRUCTION proposed in the SPECIAL USE application.
6. When some combination of VARIANCE, SPECIAL USE and Map Amendment cases is required simultaneously for the same property, the total filing fee shall include the following (except for County Board WIND FARM or PV SOLAR FARM Special Use Permits):
- (a) The standard fee for the most expensive individual zoning case; and
  - (b) one-half of the standard fee for any other required VARIANCE, SPECIAL USE, or Map Amendment provided that
  - (c) no additional fees shall be included for multiple zoning cases of the same type that can be advertised in the same legal advertisement.

**B. Fees**

**1. VARIANCES**

- (a) ADMINISTRATIVE VARIANCES \$100
- (b) Minor or Major VARIANCES \$200

**2. SPECIAL USE permits and Map Amendments (except for County Board WIND FARM or PV SOLAR FARM Special Use Permit)**

- (a) Two acres or less and Base Fee for larger areas .....\$400
- (b) More than two acres but no more than 12 acres ..... add \$40 per acre to Base Fee for each acre over two acres
- (c) More than 12 acres add \$10 per acre for each acre over 12 acres and add to fees in a. and b. above

3. Appeals and Interpretations.....\$200

4. Change of Nonconforming Use .....\$100

5. Amendment to Petitions (requiring new legal notice) .....\$100

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6. County Board WIND FARM Special Use Permit..... \$20,000 or \$440 per WIND FARM TURBINE TOWER, whichever is greater

7. BIG WIND TURBINE TOWER SPECIAL USE Permit per BIG WIND TURBINE TOWER.....\$3,300

8. County Board PV SOLAR FARM Special Use Permit

PV SOLAR FARM with not more than 7.5 megawatt nameplate rating.....\$1,320 per megawatt (includes COMMUNITY PV SOLAR FARM)

PV SOLAR FARM with nameplate rating of more than 7.5 megawatts to 112.5 megawatts.....\$9,240 plus \$102 for each megawatt more than 7.5 megawatts and up to 112.5 megawatts

PV SOLAR FARM with more than 112.5 megawatt nameplate rating..... \$180 per megawatt over 112.5 megawatts

Revise 6.1.5 **PQ. 4. , 5. 7.** as follows (6.1.5**PQ. 6.** included for continuity):

4. To comply with paragraph 6.1.1A.5., the Applicant shall provide financial assurance in the form of an irrevocable letter of credit and an escrow account as follows:

(a) At the time of Special Use Permit approval, the amount of financial assurance to be provided for the site reclamation plan shall be ~~150~~125% of the decommissioning cost as determined in the independent engineer's cost estimate to complete the decommissioning work described in Sections 6.1.1A.4.a. and 6.1.1A.4.b. and 6.1.1A.4.c. and shall otherwise be compliant with Section 6.1.1.A.5. except that if the SOLAR PV modules have an unlimited warranty of at least 10 years and also have a limited power warranty to provide not less not than 80% nominal power output up to 25 years and proof of that warranty is provided at the time of Zoning Use Permit approval, financial assurance may be provided for the site reclamation plan as follows:

(1) No Zoning Use Permit to authorize construction of the SOLAR FARM shall be authorized by the Zoning Administrator until the SOLAR FARM owner shall provide the County with Financial Assurance to cover 12.5% of the decommissioning cost as determined in the independent engineer's cost estimate to complete the decommissioning work described in Sections 6.1.1A.4.a. and 6.1.1A.4.b. and 6.1.1A.4.c. and otherwise compliant with Section 6.1.1.A.5.

(2) On or before the sixth anniversary of the Commercial Operation Date, the SOLAR FARM Owner shall provide the County with Financial Assurance to cover 62.5% of the decommissioning cost as determined in the independent engineer's cost estimate to complete the decommissioning work described in Sections 6.1.1A.4.a. and 6.1.1A.4.b. and 6.1.1A.4.c. and otherwise compliant with Section 6.1.1.A.5.

(3) On or before the eleventh anniversary of the Commercial Operation Date, the SOLAR FARM Owner shall provide the County with Financial Assurance to cover 125% of the decommissioning cost as determined in the independent engineer's

cost estimate to complete the decommissioning work described in Sections 6.1.1A.4.a. and 6.1.1A.4.b. and 6.1.1A.4.c. and otherwise compliant with Section 6.1.1A.5.

- (b) Net salvage value may be deducted from decommissioning costs as follows:
- (1) One of the following standards shall be met:
    - i. The Applicant shall maintain the SOLAR FARM free and clear of liens and encumbrances, including financing liens and shall provide proof of the same prior to issuance of the SPECIAL USE Permit; or
    - ii. The Applicant shall deduct from the salvage value credit the amount of any lien or encumbrance on the SOLAR FARM; or
    - iii. Any and all financing and/or financial security agreements entered into by the Applicant shall expressly provide that the agreements are subject to the covenant required by Section 6.1.1.A.2 that the reclamation work be done.
  - (2) The Applicant shall provide proof of compliance with paragraph 6.1.5PQ.4.(b)(1) prior to issuance of any Zoning Use Permit and upon every renewal of the financial assurance and at any other time upon the request of the Zoning Administrator.
  - (3) The Applicant shall provide in the site reclamation plan for legal transfer of the STRUCTURE to the demolisher to pay the costs of reclamation work, should the reclamation work be performed.
  - (4) The net estimated salvage value that is deducted from the estimated decommissioning costs shall be the salvage value that results after all related costs for demolition and any required preparation for transportation for reuse or recycling or for simple disposal and other similar costs including but not limited to the decommissioning of the SOLAR FARM STRUCTURES, equipment, and access roads.
  - (5) Estimated salvage value shall be based on the average salvage price of the past five years as published in a reputable source for salvage values and shall reflect sound



- engineering judgment as to anticipated changes in salvage prices prior to the next update of estimated net salvage value.
- (6) The deduction from the estimated decommissioning costs for net estimated salvage value shall be capped at 70% of the total net estimated salvage value even though the total actual salvage value shall be available in the event that decommissioning is actually required.
  - (7) The total financial assurance after deduction of the net estimated salvage value shall not be less than \$1,000 per acre.
  - (8) The credit for net estimated salvage value attributable to any SOLAR FARM may not exceed the estimated cost of removal of the above-ground portion of that SOLAR FARM on the subject site.
- (c) The GOVERNING BODY has the right to require multiple letters of credit based on the regulations governing federal insurance for deposits.
- (d) The Applicant shall adjust the amount of the financial assurance to ensure that it reflects current and accurate information as follows:
- (1) At least once every three years for the first 12 years of the financial assurance and at least once every two years thereafter or, if the SOLAR PV modules have an unlimited warranty of at least 10 years and also have a limited power warranty to provide not less than 80% nominal power output up to 25 years and proof of that warranty is provided at the time of Zoning Use Permit approval, then at least once every five years for the first 25 years of the financial assurance and at least once every two years thereafter, the Applicant shall use an independent Illinois Licensed Professional Engineer to provide updated estimates of decommissioning costs and salvage value, by including any changes due to inflation and/or change in salvage price. The Applicant shall, upon receipt, provide a copy of the adjusted Professional Engineer's report to the Zoning Administrator.
  - (2) At all times, the total combined value of the irrevocable letter of credit and the escrow account shall equal or exceed the amount of the independent engineer's cost estimate as increased by known and documented rates of inflation

based on the Consumer Price Index since the SOLAR FARM was approved.

- (e) The applicant or PV SOLAR FARM owner shall gradually pay down the value of the irrevocable letter of credit by placing cash deposits in an escrow account in equal annual installments over the first 13 years of the PV SOLAR FARM operation except that if the SOLAR PV modules have an unlimited warranty of at least 10 years and also have a limited power warranty to provide not less than 80% nominal power output up to 25 years and proof of that warranty is provided at the time of Zoning Use Permit approval, the applicant or SOLAR FARM owner may gradually pay down the value of the irrevocable letter of credit by placing cash deposits in an escrow account in equal annual installments over the 20<sup>th</sup> through the 25<sup>th</sup> years of the SOLAR FARM operation, as follows:
- (1) The applicant or PV SOLAR FARM owner and the GOVERNING BODY shall agree on a mutually acceptable financial institution at which an escrow account shall be established.
  - (2) The GOVERNING BODY shall be the beneficiary of the escrow account for the purpose of the reclamation of the PV SOLAR FARM in the event that the PV SOLAR FARM owner is incapable of decommissioning the SOLAR FARM.
  - (3) The applicant or SOLAR FARM owner shall grant perfected security in the escrow account by use of a control agreement establishing the County as an owner of record, pursuant to the Secured Transactions Article of the Uniform Commercial Code, 810 ILCS 9/101 et seq.
  - (4) The applicant or SOLAR FARM owner shall make equal annual deposits to the escrow account over ~~a 12-time~~ period as required in Section 6.1.5Q.4.(e) and shall simultaneously provide a replacement irrevocable letter of credit that is reduced accordingly.
  - (5) At all times the total combined value of the irrevocable letter of credit and the escrow account shall be increased annually as necessary to reflect actual rates of inflation over the life span of the SOLAR FARM and the amount shall be equal to or exceed ~~150~~125% of the amount of the independent engineer's cost estimate as increased by known and documented rates of inflation since the SOLAR FARM was approved.

- (6) Any interest accrued on the escrow account that is over and above the total value required by subparagraph 6.1.5PQ.4.(b)(4) shall go to the SOLAR FARM owner.
  - (7) In order to provide funding for decommissioning at the time of decommissioning, the SOLAR FARM applicant or SOLAR FARM owner may exchange a new irrevocable letter of credit in an amount equal to the amount in the escrow account in exchange for the GOVERNING BODY agreeing to a release of the full amount of the escrow account.
  - (f) Should the salvage value of components be adjusted downward or the decommissioning costs adjusted upward pursuant to paragraph 6.1.5PQ.4.(d), the amount to be placed in the escrow account pursuant to this paragraph 6.1.5.P.4. shall be increased to reflect the adjustment, as if the adjusted estimate were the initial estimate.
  - (g) Any financial assurance required per the Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture as required by paragraph 6.1.5 Q. shall count towards the total financial assurance required for compliance with paragraph 6.1.1A.5.
  - (h) Unless the Governing Body approves otherwise, the Champaign County State's Attorney's Office shall review and approve every Letter of Credit and every agreement regarding the Escrow Account prior to acceptance by the Zoning Administrator.
5. In addition to the conditions listed in subparagraph 6.1.1A.9. the Zoning Administrator may also draw on the funds for the following reasons:
- (a) In the event that any SOLAR FARM or component thereof ceases to be functional for more than six consecutive months after it starts producing electricity and the Owner is not diligently repairing such SOLAR FARM or component.
  - (b) In the event that the Owner declares the SOLAR FARM or any SOLAR FARM component to be functionally obsolete for tax purposes.
  - (c) There is a delay in the construction of any SOLAR FARM of more than 6 months after construction on that SOLAR FARM begins.

- (d) Any SOLAR FARM or component thereof that appears in a state of disrepair or imminent collapse and/or creates an imminent threat to the health or safety of the public or any person.
  - (e) Any SOLAR FARM or component thereof is otherwise derelict for a period of 6 months.
  - (f) The SOLAR FARM is in violation of the terms of the SOLAR FARM SPECIAL USE permit for a period exceeding ninety (90) days.
  - (g) The Applicant has failed to maintain financial assurance in the form and amount required by the special use permit or compromised the COUNTY's interest in the site reclamation plan.
  - (h) The COUNTY discovers any material misstatement of fact or misleading omission of fact made by the Applicant in the course of the special use permit zoning case.
  - (i) The Applicant has either failed to receive a copy of the certification of design compliance required by paragraph 6.1.5D. or failed to submit it to the County within 12 consecutive months of receiving a Zoning Use Permit regardless of the efforts of the Applicant to obtain such certification.
6. The Zoning Administrator may, but is not required to, deem the SOLAR FARM abandoned, or the standards set forth in Section 6.1.5.P.5. met, with respect to some, but not all, of the SOLAR FARM. In that event, the Zoning Administrator may draw upon the financial assurance to perform the reclamation work as to that portion of the SOLAR FARM only. Upon completion of that reclamation work, the salvage value and reclamation costs shall be recalculated as to the remaining SOLAR FARM.
7. The Site Reclamation Plan shall be included as a condition of approval by the BOARD and the signed and executed irrevocable letter of credit and evidence of the escrow account must be submitted to the Zoning Administrator prior to any Zoning Use Permit approval.

**Case 895-AT-18 REVISED Comparison of Site Reclamation and Decommissioning Requirements Including Financial Assurance**  
**DRAFT March 22, 2018**

| Site Reclamation and Decommissioning Parameter                   | REVISED Proposed Champaign County Solar Farm Requirement  | State of Illinois Dept. of Agriculture Agricultural Impact Mitigation Agreement (AIMA) For Commercial Wind Energy Facility  | BayWa Proposal  |
|--|---|---|---|
| When is decommissioning plan required                            | As part of the Special Use Permit application and included in Special Use Permit approval<br><br>(Sec. 6.1.1A.1.)   | A Deconstruction Plan shall be filed with the county during the permit process and a second Deconstruction Plan shall be filed with the county on or before the end of the 10 <sup>th</sup> year of commercial operation<br><br>(Sec. 21.C)   | Binding agreement to enter into a decommissioning plan required at time of Special Use Permit approval but decommissioning plan not required until 15 <sup>th</sup> year of operation<br>(letter dated 3/13/18) |
| Value of required financial assurance to pay for decommissioning | <del>450</del> 125% of estimated decommissioning cost; <u>however, the full amount is required at different times depending upon the quality of the PV modules (see below)</u><br><br>(Sec. 6.1.5P.4.(a))   | 100% of estimated deconstruction cost required eventually- see below  | Not specified but presumably 100%   |
| When is financial assurance required                             | Prior to issuance of Zoning Use Permit approval <u>EXCEPT if the SOLAR PV panels have an unlimited warranty of at least 10 years and also have a limited power warranty to provide not less not than 80% nominal power output up to 25 years financial assurance may be provided as follows:</u><br><ul style="list-style-type: none"> <li>▪ <u>12.5% of est. decommissioning cost required at the time of Zoning Use Permit approval</u></li> <li>▪ <u>62.5% of est. decommissioning cost required on or before sixth anniversary of operation</u></li> <li>▪ <u>125% of est. decommissioning cost required by the eleventh anniversary of operation</u></li> </ul><br>(Sec. 6.1.1A.5. and revised 6.1.5P.4.(a)) | Financial assurance required in phases over first 11 years of operation:<br><ul style="list-style-type: none"> <li>▪ 10% of estimated deconstruction cost required on or before first anniversary of operation</li> <li>▪ 50% of estimated deconstruction cost required on or before sixth anniversary of operation</li> <li>▪ 100% of estimated deconstruction cost required by the eleventh anniversary of operation</li> </ul><br>(Sec. 21.D.) | 15 <sup>th</sup> year of operation<br><br>(letter dated 3/13/18)  |

**Case 895-AT-18 REVISED Comparison of Site Reclamation and Decommissioning Requirements Including Financial Assurance  
DRAFT March 22, 2018**

| Site Reclamation and Decommissioning Parameter | REVISED Proposed Champaign County Solar Farm Requirement   | State of Illinois Dept. of Agriculture Agricultural Impact Mitigation Agreement (AIMA) For Commercial Wind Energy Facility | BayWa Proposal  |
|--|--|--|---|
| Type of financial assurance required           | <p>Letter of Credit at first and then converted to Escrow Account over first 13 years <u>EXCEPT if the SOLAR PV panels have an unlimited warranty of at least 10 years and also have a limited power warranty to provide not less not than 80% nominal power output up to 25 years then the Letter of Credit may be converted to an Escrow Account over the 20<sup>th</sup> through the 25<sup>th</sup> years of the SOLAR FARM operation,</u></p> <p>(Sec. 6.1.5P.4.(d) &amp; (e))</p>                                  | Not specified  | Letter of Credit preferable<br><br>(letter of 2/8/18) |
| Required update of financial assurance         | <p>Every 3 years for first 12 years and every <u>two years thereafter or, if the SOLAR PV modules have an unlimited warranty of at least 10 years and also have a limited power warranty to provide not less not than 80% nominal power output up to 25 years and proof of that warranty is provided at the time of Zoning Use Permit approval, then at least once every five years for the first 25 years of the financial assurance and at least once every two years thereafter</u></p> <p>(Sec. 6.1.5P.4.(d)(2))</p> | No required update but may occur on tenth anniversary of operation and every five years thereafter<br>(Sec. 21.E.)         | Every three years after year 15                       |
| NOTES  |  |  |   |