Champaign County Department of

> PLANNING & ZONING

Brookens Administrative Center 1776 E. Washington Street Urbana, Illinois 61802

(217) 384-3708 zoningdept@co.champaign.il.us www.co.champaign.il.us/zoning

CASES 067-AM-22, 068-S-22, 069-V-22 & 070-S-22

SUPPLEMENTAL MEMORANDUM #2 December 28, 2022

Petitioner: Anthony Donato, d.b.a. Donato Solar – Urbana LLC

Request:

<u>CASE 067-AM-22</u> Amend the Zoning Map to change the zoning district designation from the CR Conservation Recreation Zoning District to the AG-2 Agriculture Zoning District in order to allow a data center as a Special Use in related Zoning Case 068-S-22 and a PV solar array as a second principal use as a proposed County Board Special Use Permit in related Case 070-S-22.

CASE 068-S-22

Authorize a data center as a Special Use Permit, subject to the proposed rezoning in Case 067-AM-22, and subject to the following waiver:

Authorize a waiver from Section 6.1.3 of the Zoning Ordinance that requires a noise analysis to be performed for a Data Center.

Case 069-V-22

Authorize the following variance for the data center proposed as a Special Use Permit in related case 068-S-22:

Part A: Authorize a variance for 3 parking spaces in lieu of the minimum required 7 parking spaces, per Section 7.4.1 C.3. of the Zoning Ordinance.

Part B: Authorize a variance for no loading berth in lieu of the minimum required 1 loading berth, per Section 7.4.1 C.5. of the Zoning Ordinance.

CASE 070-S-22

Subject to the rezoning in related Case 067-AM-22 and in addition to the Special Use Permit requested in related Case 068-S-22, authorize the following additional special use permits:

- A. A Special Use Permit for a second principal use; and
- B. As the second principal use, authorize a photovoltaic solar array with a total nameplate capacity of 4 megawatts (MW), including access roads and wiring, as a County Board Special Use Permit and including the following waivers of standard conditions (other waivers may be necessary):

Part A: A waiver for not providing a Decommissioning and Site Reclamation Plan that includes cost estimates prepared by an Illinois Licensed Professional Engineer prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.1 A.3.

Part B: A waiver for locating the PV Solar Array less than one-half mile from an incorporated municipality and within the contiguous urban growth area of a municipality per Section 6.1.5 B.(2)a.

Part C: A waiver for a separation distance of 97 feet between the solar inverters and the perimeter fence in lieu of the minimum required 275 feet, per Section 6.1.5 D.(6).

Part D: A waiver for not submitting a Landscape Plan with weed control plan prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.5 F.(9)a.(b).iv.

Location: A 13.62-acre tract in the Southwest Quarter of the Northwest Quarter of Section 32, Township 20 North, Range 9 East of the Third Principal Meridian in Somer Township, commonly known as the farmland located on the northwest corner of the intersection of West Oaks Road and Squire Farm Rd, Urbana.

Site Area: 13.62 acres

Time Schedule for Development: As soon as possible

Prepared by:Susan Burgstrom, Senior PlannerJohn Hall, Zoning Administrator

STATUS

Attachment B is a revised Site Plan received December 21, 2022. Highlights of the revisions include:

- The addition of an easement along the Beaver Lake Drainage Ditch.
- The inverters have been moved north to abut the Urbana Champaign Sanitary District's easement.

Attachment D is a Noise Study for the proposed project received December 21, 2022. Per Mr. Grilo's email received that day, the study assumes the old location of the inverters at 97 feet from the south property line rather than how they are reflected in the revised Site Plan received December 21, 2022. The noise study demonstrates compliance with the Zoning Ordinance.

BEAVER LAKE DRAINAGE DISTRICT EASEMENT

In an email received December 21, 2022, Tony Grilo, agent for the petitioner, stated "In my meeting with Lyle Brock and Steve Hammel who have some sort of role at Beaver Lake Drainage had told me 50' for most of the section and 75' for 150' from the road. They wheeled it out and even put flags for me. I built a site plan from that and gave them each a copy as well as a letter confirming they are good with it. I haven't gotten that back yet but I will follow up with them before Santa comes around. I attached the plan that I gave them. I assume they will be good with it because I did exactly what they want. Note, I didn't include trees on my plan in their 75' at the road. I'm happy to put them there if you guys want." Attachment C is the email from Mr. Grilo.

The Board can determine if proposed condition J is still necessary.

INVERTERS MOVED NORTH

The petitioner moved the inverters north in order to increase the distance between the PV solar array's fence and the inverters, which the Zoning Ordinance requires to be at least 275 feet. The movement north increased the distance from 97 feet to 255 feet, but a waiver is still required.

PROPOSED SPECIAL CONDITIONS – <u>ADDITIONS TO CASE 070-S-22</u>

The following special conditions are proposed for Map Amendment Case 067-AM-22:

A. The owners of the subject property hereby recognize and provide for the right of agricultural activities to continue on adjacent land consistent with the Right to Farm Resolution 3425 (see attached).

The special condition stated above is required to ensure the following: Conformance with Land Resource Management Plan Policy 4.2.3.

B. The Map Amendment is contingent upon approval of Cases 068-S-22 and 070-S-22.

The special condition stated above is required to ensure the following: That the Special Use is consistent with the Zoning Ordinance and ZBA recommendations.

The following special conditions are proposed for Special Use Permit Case 068-S-22:

A. The Zoning Administrator shall not issue a Zoning Compliance Certificate for the proposed special use until the petitioner has demonstrated that the proposed Special Use complies with the Illinois Accessibility Code.

The special condition stated above is required to ensure the following: That the proposed Special Use meets applicable State requirements for accessibility.

B. The Zoning Administrator shall not authorize a Zoning Compliance Certificate until the petitioner has demonstrated that any new or proposed exterior lighting on the subject property will comply with the lighting requirements of Section 6.1.2.

The special condition stated above is required to ensure the following: That the proposed use is in compliance with the Zoning Ordinance.

C. The Zoning Administrator shall not authorize a Zoning Compliance Certificate authorizing occupancy of the proposed buildings until the Zoning Administrator has received a certification of inspection from an Illinois Licensed Architect or other qualified inspector certifying that the new buildings comply with the following codes: (A) the current edition or most recent preceding edition of the International Building Code, and (B) the current edition or most recent preceding edition of the National Electrical Code NFPA 70. The special condition stated above is required to ensure the following: New commercial buildings shall be in conformance with Public Act 96-704.

D. A noise study shall be completed by the petitioner that meets the requirements of 6.1.5 I.3. and that has been approved by the Environment and Land Use Committee.

The above special condition is required to ensure that: The data center is constructed consistent with the Special Use Permit approval and in compliance with the Ordinance requirements.

The following special conditions are proposed for Special Use Permit Case 070-S-22:

- A. The approved site plan consists of the following documents:
 - Site Plan sheets received September 27, 2022.

The above special condition is required to ensure that: The constructed PV SOLAR FARM is consistent with the special use permit approval.

B. The Zoning Administrator shall not authorize a Zoning Use Permit Application or issue a Zoning Compliance Certificate on the subject property until the lighting specifications in Paragraph 6.1.2.A. of the Zoning Ordinance have been met.

The special condition stated above is required to ensure the following: That exterior lighting for the proposed Special Use meets the requirements established for Special Uses in the Zoning Ordinance.

C. The Zoning Administrator shall not issue a Zoning Compliance Certificate for the proposed PV SOLAR FARM until the petitioner has demonstrated that the proposed Special Use complies with the Illinois Accessibility Code, if necessary.

The special condition stated above is necessary to ensure the following: That the proposed Special Use meets applicable state requirements for accessibility.

D. The Zoning Administrator shall not authorize a Zoning Use Permit until the petitioner submits a copy of an executed Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture per the requirements established in Paragraph 6.1.5 R. of the Zoning Ordinance.

The special condition stated above is required to ensure the following: That the land affected by PV SOLAR FARM is restored to its preconstruction capabilities.

E. A signed Decommissioning and Site Reclamation Plan that has been approved by ELUC is required at the time of application for a Zoning Use Permit that complies with Section 6.1.1 A. and Section 6.1.5 Q. of the Zoning Ordinance, including a decommissioning cost estimate prepared by an Illinois Professional Engineer.

The above special conditions are required to ensure that:

The Special Use Permit complies with Ordinance requirements and as authorized by waiver.

F. A Landscape Plan with Weed Control Plan that has been approved by ELUC is required at the time of application for a Zoning Use Permit that complies with Section 6.1.5 M. and Section 6.1.5 P.(3) of the Zoning Ordinance.

The above special conditions are required to ensure that: The Special Use Permit complies with Ordinance requirements and as authorized by waiver.

- G. The following submittals are required prior to the approval of any Zoning Use Permit for a PV SOLAR FARM:
 - 1. Documentation of the solar module's unlimited 10-year warranty and the 25-year limited power warranty.
 - 2. Certification by an Illinois Professional Engineer that any relocation of drainage district tile conforms to the Champaign County Storm Water Management and Erosion Control Ordinance.
 - 3. An irrevocable letter of credit to be drawn upon a federally insured financial institution with a minimum acceptable long term corporate debt (credit) rating of the proposed financial institution shall be a rating of "A" by S&P or a rating of "A3" by Moody's or a rating of "A-" by Kroll Bond Rating Agency within 200 miles of Urbana or reasonable anticipated travel costs shall be added to the amount of the letter of credit.
 - 4. 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.
 - 5. Documentation regarding the seed to be used for the pollinator planting, per 6.1.5 F.(9).
 - 6. The telephone number for the complaint hotline required by 6.1.5 S.
 - 7. Any updates to the approved Site Plan per the requirements provided in Section 6.1.5 U.1.c.
 - 8. A noise study that meets the requirements of 6.1.5 I.3. that has been approved by the Environment and Land Use Committee.

The above special condition is required to ensure that:

The PV SOLAR FARM is constructed consistent with the Special Use Permit approval and in compliance with the Ordinance requirements.

- H. A Zoning Compliance Certificate shall be required for the PV SOLAR FARM prior to going into commercial production of energy. Approval of a Zoning Compliance Certificate shall require the following:
 - 1. An as-built site plan of the PV SOLAR FARM including structures, property lines (including identification of adjoining properties), as-built separations, public access road and turnout locations, substation(s), electrical cabling from the PV SOLAR FARM to the substations(s), and layout of all structures within the geographical boundaries of any applicable setback.
 - 2. As-built documentation of all permanent soil erosion and sedimentation improvements for all PV SOLAR FARM including any access road prepared by an Illinois Licensed Professional Engineer.
 - 3. An executed interconnection agreement with the appropriate electric utility as required by Section 6.1.5 B.(3)b.

The above special condition is required to ensure that:

The PV SOLAR ARRAY is constructed consistent with the special use permit approval and in compliance with the Ordinance requirements.

- I. The Applicant or Owner or Operator of the PV SOLAR ARRAY shall comply with the following specific requirements that apply even after the PV SOLAR ARRAY goes into commercial operation:
 - 1. Maintain the pollinator plantings and required visual screening in perpetuity.
 - 2. Cooperate with local Fire Protection District to develop the District's emergency response plan as required by 6.1.5 H.(2).
 - 3. Cooperate fully with Champaign County and in resolving any noise complaints including reimbursing Champaign County any costs for the services of a qualified noise consultant pursuant to any proven violation of the I.P.C.B. noise regulations as required by 6.1.5 I.(4).
 - 4. Maintain a current general liability policy as required by 6.1.5 O.
 - 5. Submit annual summary of operation and maintenance reports to the Environment and Land Use Committee as required by 6.1.5 P.(1)a.
 - 6. Maintain compliance with the approved Decommissioning and Site Reclamation Plan including financial assurances.
 - 7. Submit to the Zoning Administrator copies of all complaints to the telephone hotline on a monthly basis and take all necessary actions to resolve all legitimate complaints as required by 6.1.5 S.

The above special condition is required to ensure that:

Future requirements are clearly identified for all successors of title, lessees, any operator and/or owner of the PV SOLAR ARRAY.

- J.The perimeter security fence shall not encroach into the easement along the
Beaver Lake Drainage Ditch and the developer shall provide documentation of
that easement with the Zoning Use Permit Application and shall map the
easement on the development site plan and shall document the actual location of
the fence in an as-built site plan.
 - <u>The special condition stated above is required to ensure the following:</u> <u>To ensure unencumbered access for maintenance of the Beaver Lake</u> <u>Drainage Ditch.</u>
- K. The number of loaded trucks on Oaks Road should be minimized during the spring thaw period.

The special condition stated above is required to ensure the following: <u>To minimize susceptibility to road damage from heavy loads.</u>

There are no proposed special conditions for Variance Case 069-V-22.

ATTACHMENTS

- A Legal Advertisement
- B Revised Site Plan received December 21, 2022
- C Email from Tony Grilo received December 21, 2022
- D Noise Study by Shiner Acoustics received December 21, 2022

LEGAL PUBLICATION: WEDNESDAY, OCTOBER 12, 2022 CASES: 067-AM-22, 068-S-22, 069-V-22 & 070-S-22

NOTICE OF A PUBLIC HEARING IN REGARD TO A REZONING, TWO SPECIAL USE PERMITS WITH WAIVERS AND A VARIANCE ON PROPERTY IN UNINCORPORATED CHAMPAIGN COUNTY UNDER THE PROVISIONS OF THE CHAMPAIGN COUNTY ZONING ORDINANCE

Anthony Donato, d.b.a. Donato Solar – Urbana LLC, PO Box 1546, Deerfield, IL 60015, has filed petitions for a Zoning Map Amendment, two Special Use Permits with waivers, and a Variance under the provisions of the Champaign County Zoning Ordinance on property in unincorporated Champaign County. The petitions are on file in the office of the Champaign County Department of Planning and Zoning, 1776 E. Washington Street, Urbana, IL.

A public hearing will be held **Thursday**, **October 27**, **2022**, **at 6:30 p.m.** prevailing time in the Shields-Carter Meeting Room, Brookens Administrative Center, 1776 East Washington Street, Urbana, at which time and place the Champaign County Zoning Board of Appeals will consider petitions for the following:

CASE 067-AM-22

Amend the Zoning Map to change the zoning district designation from the CR Conservation Recreation Zoning District to the AG-2 Agriculture Zoning District in order to allow a data center as a Special Use in related Zoning Case 068-S-22 and a PV solar array as a second principal use as a proposed County Board Special Use Permit in related Case 070-S-22.

CASE 068-S-22

Authorize a data center as a Special Use Permit, subject to the proposed rezoning in Case 067-AM-22, and subject to the following waiver:

Authorize a waiver from Section 6.1.3 of the Zoning Ordinance that requires a noise analysis to be performed for a Data Center.

Case 069-V-22

Authorize the following variance for the data center proposed as a Special Use Permit in related case 068-S-22:

Part A: Authorize a variance for 3 parking spaces in lieu of the minimum required 7 parking spaces, per Section 7.4.1 C.3. of the Zoning Ordinance.

Part B: Authorize a variance for no loading berth in lieu of the minimum required 1 loading berth, per Section 7.4.1 C.5. of the Zoning Ordinance.

CASE 070-S-22

Subject to the rezoning in related Case 067-AM-22 and in addition to the Special Use Permit requested in related Case 068-S-22, authorize the following additional special use permits:

- A. A Special Use Permit for a second principal use; and
- B. As the second principal use, authorize a photovoltaic solar array with a total nameplate capacity of 4 megawatts (MW), including access roads and wiring, as a County Board Special Use Permit and including the following waivers of standard conditions (other waivers may be necessary):

Part A: A waiver for not providing a Decommissioning and Site Reclamation Plan that includes cost estimates prepared by an Illinois Licensed Professional Engineer prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.1 A.3.

Part B: A waiver for locating the PV Solar Array less than one-half mile from an incorporated municipality and within the contiguous urban growth area of a municipality per Section 6.1.5 B.(2)a.

Part C: A waiver for a separation distance of 97 feet between the solar inverters and the perimeter fence in lieu of the minimum required 275 feet, per Section 6.1.5 D.(6).

Part D: A waiver for not submitting a Landscape Plan with weed control plan prior to consideration of the Special Use Permit by the Zoning Board of Appeals, per Section 6.1.5 F.(9)a.(b).iv.

SUBJECT PROPERTY:

A 13.62-acre tract in the Southwest Quarter of the Northwest Quarter of Section 32, Township 20 North, Range 9 East of the Third Principal Meridian in Somer Township, commonly known as the farmland located on the northwest corner of the intersection of West Oaks Road and Squire Farm Rd, Urbana.

All persons interested are invited to attend said hearing and be heard. If you would like to submit comments or questions before the meeting, please call the P&Z Department at 217-384-3708 or email zoningdept@co.champaign.il.us no later than 4:30 pm the day of the meeting. The hearing may be continued and reconvened at a later time.

Ryan Elwell, Chair Champaign County Zoning Board of Appeals

TO BE PUBLISHED: WEDNESDAY, OCTOBER 12, 2022 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

Our News Gazette account number is 99225860.



SITE PLAN SCALE: 1" = 40' Cases 067-AM-22/068-S-22/069-V-22/070-S-22 ZBA 12/29/22, Supp Memo 2, Attachment B Page 1 of 1

> ULUTIONI AULIMINARY HES DOCUMENTS OLITANIS INFORMATION BELONGING TO lambang, OR ITS AFFILITED CLEMITS, IT SHALL ONLY BE USED FOR THE INTENDED PURPOSE. IT HAS ANOTONED, REPRODUCED DO OTTENING USED. NEITHER SHALL THE ANOTONIATION BE INFORMATION OF OTHER AND TO OTHER SCHEME UNDER OWNITTE WITTEN CONSERVO FOR MANY TO OTHER SCHEME UNDER OWNITTE WITTEN CONSERVO FOR MANY TO ANY TO OTHER SCHEME THE WITTEN CONSERVO FOR MANY TO ANY TO ANY TO OTHER SCHEME ANY TO ANY THE WITTEN CONSERVO FOR MANY TO ANY TO A

RECEIVED DEC 21, 2022 CHAMPAIG N COUNTY PLANNING & ZONING

SOLAR FARM

W OAKS ROAD N URBANA, IL 61802 TITLE

SITE PLAN

сто. С100

Susan Burgstrom

From:	Tony Grilo <tonygrilo@gmail.com></tonygrilo@gmail.com>
Sent:	Tuesday, December 20, 2022 4:32 PM
То:	Susan Burgstrom
Subject:	Re: notes from opening hearing for Oaks Road development
Attachments:	Oaks Road Solar Farm Sound Study.pdf; 12-20.pdf
Follow Up Flag: Flag Status:	Follow up Flagged

CAUTION: External email, be careful when opening.

I thought I replied here but apparently not.

In my meeting with Lyle Brock and Steve Hammel who have some sort of role at Beaver Lake Drainage had told me 50' for most of the section and 75' for 150' from the road. They wheeled it out and even put flags for me. I built a site plan from that and gave them each a copy as well as a letter confirming they are good with it. I haven't gotten that back yet but I will follow up with them before Santa comes around. I attached the plan that I gave them. I assume they will be good with it because I did exactly what they want. Note, I didn't include trees on my plan in their 75' at the road. I'm happy to put them there if you guys want.

Also the noise analysis came in today! I think he used my original inverter location so I asked him to modify based on the new location. Then we can have two site plans, one requires a waiver and one doesn't IF he gets me the noise analysis results soon enough.

Decom plan is done but the engineer isn't finished reviewing it so I don't want to submit it yet.

My brain seems a bit fried today but I think that may be it. Let me know if not.

Tony

On Wed, Dec 14, 2022 at 10:57 AM Susan Burgstrom <<u>sburgstrom@co.champaign.il.us</u>> wrote:

Hi Tony,

I'll take a look at the revised Landscape Plan.

We still need a revised Site Plan showing the easement for the Drainage Ditch and any adjustments to fencing/arrays needed based on that. I heard from the Drainage District attorney, who said it needs to be 75 feet from the top crest of the ditch.

Thanks! Susan RECEIVED

DEC 21 2022 CHAMPAIGN CO P & Z DEPARTMENT

1

Shiner Acoustics, LLC

Cases 067-AM-22/068-S-22/069-V-22/070-S-22 Acoustical Engineers ZBA 12/29/22, Supp Memo 2, Attachment D Page 1 of 5 225 W Washington St. - Suite 1625, Chicago, Illinois 60606 Phone 312 849-3340 Fax 312 849-3344 www.shineracoustics.com

BTB Energies 26413 W. South St. Ingleside, IL 60041 December 19, 2022

Attn: Mr. Tony Grilo

Re: Oaks Road Solar Farm Noise Study Urbana, IL

Dear Mr. Grilo:

The purpose of this report is to evaluate the noise impact of a proposed solar farm located at approximately 3398 W Oaks Road in Urbana, IL based on sound level measurements conducted on site and analysis of the data.

The solar farm will occupy roughly 440,000 sqft on the site which is located approximately 200 feet south of a residential property (the house is approximately 700 feet from the noise generating equipment). There will be a data center located in the middle of the southern portion of the lot as well as a dry cooler to the north of the data center and two banks of inverters, one to the west and one to the east of the storage building. The expected noise from the site will be from the dry cooler and the inverter banks.

To evaluate the noise impact of the solar farm, we conducted a sound survey on the site to establish existing sound levels. We then created an acoustic model to predict the solar farm's sound levels at the nearby residential properties based on sound emanating from the equipment.

Criteria

The city of Urbana does not have a noise ordinance with numeric limits, but defers to state regulations. Our analysis and recommendations will be based on meeting the Illinois Pollution Control Board (IPCB) Noise Regulations for sound emitting from Class C land to Class A land during evening hours (10pm to 7am), which are the most stringent.

As part of our evaluation, we used data from the sound study to compare against the IPCB noise regulations to set a design goal for octave band sound levels. The design goal is set as the IPCB noise regulations or ambient sound levels, whichever is higher. The octave band levels of the noise regulations, ambient sound levels, and design goal are shown in Table 2 below.

Sound Survey

Long term acoustical measurements were conducted at the northeast corner of the property at approximately 3509 Squire Farm Road. The measurements ran from the afternoon of Monday 12/12/22 to the morning of Thursday 12/15/22. An aerial photograph showing the approximate location of the sound level meter is shown in Figure 1.

DEC 2,1 2022

CHAMPAIGN CO P & Z DEPARTMENT

December 19, 2022

BTB Energy

The following instrumentation was used:

- Norsonic 140 sound analyzer
- Norsonic Nor 1209 preamplifier
- Norsonic Nor 1225 ½" condenser microphone
- Norsonic 1251 sound calibrator
- Microphone extension cable
- Microphone windscreen
- Tripod

The exterior microphone and preamplifier were connected to the analyzer. The microphone was protected with a windscreen and attached to the tripod, which was secured to a utility pole. The analyzer and battery were contained in a weathertight case. The sound level meter was calibrated before and after the measurements.



Figure 1 Aerial Photo Showing Microphone Location, W Oaks Road, The Solar Farm Site, and nearby Residential Property

The analyzer measured A-weighted and one-third octave band sound pressure levels. Data were sampled continuously. The L_{eq} (time-average) spectrum and other statistics were stored for each hour and one-minute intervals. We used the data to calculate the average sound level (L_{eq}) for the entire measurement as well as for daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. The average sound level for the whole measurement period was 65 dBA. The day/night sound level results are summarized in Table 1 below.

The primary source contributing to the measured sound levels at the site was traffic from W Oaks Road and Squire Farm Road. A graph of the sound pressure levels over the duration of the study is shown in Figure 2.

BTB Energy

December 19, 2022

Results of December 12-15, 2022 Acoustical Study Day/Night Average Sound Levels, dB re 20μPa, A-weighted								
Date	Day	Daytime L _{eq} , dBA	Nighttime L _{eq} , dBA					
12/12/22*	Mon	52						
12/12/22 – 12/13/22	Mon – Tue		46					
12/13/22	Tue	62						
12/13/22 – 12/14/22	Tue – Wed	_	67**					
12/14/22	Wed	67**						
12/14/22 - 12/15/22	Wed – Thur		68**					
12/15/22*	Thur	56						

Table 1
Results of December 12-15, 2022 Acoustical Study
Day/Night Average Sound Levels, dB re 20µPa, A-weighted

*Measurements did not include the full extent of "daytime" hours.

** Elevated sound levels due to rain and high winds



Sound Level Design Goal, dB re 20µPa										
	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dBA
IPCB Nighttime Class C to Class A Land	69	67	62	54	47	41	36	32	32	51
Site Ambient	56	55	53	47	44	<mark>4</mark> 2	32	17	16	46
Design Goal	<u>69</u>	67	62	<mark>54</mark>	47	42	36	32	32	51

 Table 2

 IPCB Noise Regulations, Measured Ambient Sound Pressure Levels, and

 Sound Level Design Coal, dB to 200Pa

The nighttime measurement period of 12/12/22 - 12/13/22 was used for the site ambient levels in Table 2 because they were the lowest measured nighttime sound levels.

Modeling

We used CadnaA from DataKustik GmbH for our acoustic model. CadnaA is industry-accepted software used to calculate sound levels of multiple sources and propagation paths at multiple receiver points. The software considers the factors that influence sound propagation, such as distance, shielding by buildings, ground effect and atmospheric absorption, and source directivity.

The manufacturer of the proposed equipment was not able to provide octave band sound level data for their dry cooler. They were only able to provide an overall sound pressure level of 74 dBA when measured at 1 meter from the equipment while it was running at full speed. To evaluate octave band sound levels in our model for the dry cooler, we extrapolated the sound spectra from data that we had for a comparable piece of equipment.

Figure 3 presents sound level contours superimposed on an aerial photograph of the site. The graphics show the predicted sound levels of the equipment of the solar farm. Sound levels at the residential property line, at 5 feet above ground level are shown. The predicted sound levels at the residential properties are also summarized in Table 3 below.



Shiner Acoustics,LLC

December 19, 2022

BTB Energy

From Solar Farm Noise Sources, dB re 20µPa										
	31.5	63	125	250	500	1000	2000	4000	8000	dBA
	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	ub/(
IPCB Nighttime Class C to Class A Land	69	67	62	54	47	41	36	32	32	51
Design Goal	69	67	62	45	47	42	36	32	32	51
Calculated Adjacent Residential Property Line	34	46	51	37	37	38	34	28	7	42

 Table 3

 Design Goal and Calculated Sound Levels at Adjacent Residential Property

 From Solar Farm Noise Sources, dB re 200Pa

Comments and Recommendations

Based on our model and calculations, the proposed solar farm would be expected to meet IPCB noise regulations at the nearby residential property.

Note that if the dry cooler location is changed and the equipment is located closer to the residential property, the solar farm may no longer meet the noise ordinance.

If you have questions concerning this report, please do not hesitate to contact us.

Respectfully submitted,

Shiner Acoustics, LLC

Goinu

Ryan M Garner