

**LAKE COUNTY ZONING NOTICE CUP-001074-2025**  
**Newport Township**

The Lake County Zoning Board of Appeals has scheduled a public hearing at 1:00 PM on Tuesday June 24, 2025, at the Lake Villa District Library 140 N. Munn Road Lindenhurst IL on the petition of Thomas Benson 2022 Trust, record owner, who seeks a Conditional Use Permit to allow an accessory small-scale solar energy system.

Please note that quantitative values may be subject to minor alterations due to surveyed conditions. The subject property is located at 43233 N CRAWFORD RD ANTIOCH, IL 60002 and is approximately 10.00 acres.

PIN:0306400003

This application is available for public examination online at <https://www.lakecountyil.gov/calendar.aspx?EID=12403> or at the office of the Lake County Zoning Board of Appeals, 500 W. Winchester Rd, Libertyville, Illinois, Attn: Thomas Chefalo, Project Manager 847-377-2120.

**Gregory Koeppen**  
**Chair**

**LAKE COUNTY ZONING BOARD OF APPEALS**  
**CONDITIONAL USE PERMIT APPLICATION**

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Applicant(s): Tom Benson  
(please print) Owner(s)

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Subject Present Zoning: Rural Estates  
Property: Present Use: Single family dwelling  
Proposed Use: Solar addition to single family dwelling  
PIN(s): 0306400003  
Address: 43233 N Crawford Rd, Antioch, IL 60002

Legal description:  
(   see deed)

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Request: I/we request a conditional use permit be approved to allow:

The installation of 21.32 kw DC Solar System, to be ground-mounted.  
500+ Sqft is needed for the project.

Explain why this conditional use permit is justified:

- Roof will not fit all the Solar Panels, Roof cannot bear load of Solar Panels without re-roof.
  - Owner prefers to keep panels grouped together for aesthetics to the property.
  - Solar Panel system of 1118 sqft will allow the customer to cover their current electrical usage
  - Solar panels will be able to produce and save the Owner money on rising Electricity Costs
-

### **Approval Criteria\***

The Lake County Zoning Board of Appeals is required to make findings of fact on your request. You should "make your case" by specifically explaining how your proposed request relates to each of the following criteria:

- A. The use in its proposed location will be consistent with the stated purpose and intent of the Lake County Code ("Purpose and Intent", Section 151.005);

1118 sqft Project will not deviate from the designation of the Intended and Proposed use of this permit, which is to provide Renewable Solar Energy for the Homeowner.

- B. The proposed use in its proposed location complies with all applicable standards of the Lake County Code, including any applicable standards of Section 151.111; and

- Installation of 1118 sqft system complies with all applicable codes set forth by the county.
- Placement of System allows plenty of space for other projects, if necessary.
- Placement of System does not violate setback requirements of property line

- C. The proposed use in its proposed location will not have a substantial adverse impact on any of the following, either as they exist at the time of the application or as they may be developed in the future due to implementation of the Comprehensive Plan;

1. adjacent property,

- 1118 sqft Project does not infringe on neighboring properties
- Project does not violate setback requirements of property lines

2. the character of the neighborhood,

- Placement of the solar panels will be located in a spot where it won't impact other residential user
- Project will not impede on community character, other than becoming a beacon and example for using Renewable energy, thus saving the planet over time.
- Project is willing to comply to any and all regulations set forth by County codes in order to avoid inhibiting future development

3. natural resources,

- Homeowner's system will not infringe on natural resources.
- Project will make best attempt to not disturb utility or septic lines while trenching through dirt
- Homeowner would not like to trim or remove trees for the sake of getting better energy production on an unsuitable roof, which will also not fit all solar panels.

4. infrastructure,

- Homeowner currently owns livestock and has electric fences
- 1118 sqft project will not disturb nature preserves, and system will provide energy for the electric grid, thus the project will build and add on to the existing infrastructure.
- Project will be retained to use for Homeowner's personal needs, thus will not infringe on others' projects or personal developments.

5. public site, or

- 1118 sqft Project will be permanently placed on Homeowner's property, thus will not infringe on any commercial developments and is willing to comply with any setback requirements set forth in order to comply with applicable codes.

6. any other matters affecting the public health, safety, or general welfare.

- 1118 sqft Project will mark landlines and septic lines prior to digging trenching path.
- Project will diligently work to avoid utility and septic lines as best as possible.
- Department of Health Approval will be needed during permitting process, other parties will be notified accordingly

*\*Conditional use permits for commercial solar energy systems shall be approved if found to be in compliance with the requirements of Lake County Code Sections 151.112 (WW) and 151.112 (CCC). Please refer to the Addendum for more details.*



## COURT REPORTER AGREEMENT

### CHECK ONE OF THE FOLLOWING:



I authorize the County to act on my behalf to retain a Certified Shorthand Reporter to transcribe the public hearing and provide a transcript to the Zoning Board of Appeals. I further agree to pay the Reporter reasonable fees for his/her services. If I do not pay the Reporter and the County is invoiced and pays the Reporter, I agree to reimburse the County. If the County sues to obtain reimbursement, I agree to pay the County its reasonable attorney's fees in bringing suit and obtaining a judgment.



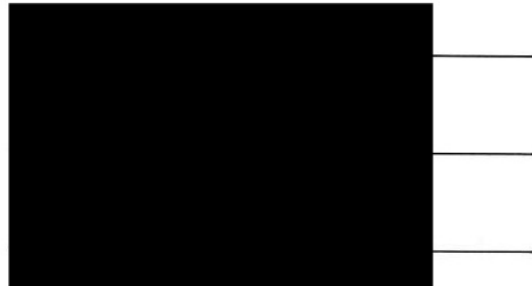
I will furnish a Certified Shorthand Reporter to transcribe the public hearing and provide a transcript to the Zoning Board of Appeals. I realize that the failure to do so may result in the continuation of the public hearing in which case I agree to reimburse the County for all additional expenses caused by such continuation.

*Brian Platt*

\_\_\_\_\_  
Signature



Billing Contact Information:



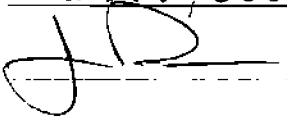
**THIS SIGNED AGREEMENT MUST ACCOMPANY YOUR APPLICATION**

WARRANTY  
DEED IN TRUST

Type: DWT  
Recorded: 5/13/2022 1:55:55 PM  
Fee Amt: \$60.00 Page 1 of 3  
Receipt#: 202200039891  
IL Rental Housing Fund: \$9.00  
Lake County IL Recorder  
Mary Ellen Vanderventer Recorder

File# 7904279

Exempt under 35 ILCS 200 /  
31-45 Paragraph e of the Real  
Estate Transfer tax

Date: March 1, 2022  
By: 

THIS INDENTURE WITNESSETH that the grantors THOMAS BENSON and SONJA BENSON, husband and wife, of the Village of Antioch, County of Lake and State of Illinois, for and in consideration of \$10.00 in hand paid, convey and warrant an undivided ½ interest to THOMAS BENSON and SONJA BENSON, as co-trustees under the provisions of a trust agreement dated March 1, 2022, and known as the THOMAS BENSON 2022 TRUST, as amended and restated from time to time, the beneficial interest of said trust being held by THOMAS BENSON and a undivided ½ interest to SONJA BENSON and THOMAS BENSON, as co-trustees under the provisions of a trust agreement dated March 1, 2022, and known as the SONJA BENSON 2022 TRUST, as amended and restated from time to time, the beneficial interest of said trust being held by SONJA BENSON, the interests being held in tenancy by the entirety (the “Grantees”), of 43233 North Crawford Road, Antioch, Illinois 60002, the following described real estate in the County of Lake and State of Illinois, to wit:

THE NORTH 330.0 FEET OF THE NORTH 660.0 FEET OF THE WEST 1320.00 FEET OF LOT 1 OF THE EAST ½ OF FRACTIONAL SECTION 6, TOWNSHIP 46 NORTH, RANGE 11. EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS

Permanent Real Estate Index Number(s): 03-06-400-003-000

Address of Real Estate: 43233 North Crawford Road, Antioch, Illinois 60002

TO HAVE AND TO HOLD the said premises with the appurtenances upon the trust(s) and for the uses and purposes in said trust agreement(s), as amended from time to time.

The said Grantees hereby expressly intend that the interests are to be held as tenants by the entirety, the beneficial interests being held by husband and wife, despite the property being held in revocable trusts. (735 ILCS 5/12-112 & 765 ILCS 1005/1c).

In Witness Whereof, the grantor(s) aforesaid has hereunto set their hand(s) this 15<sup>th</sup> day of March, 2022.

[Redacted Signature]

THOMAS BENSON

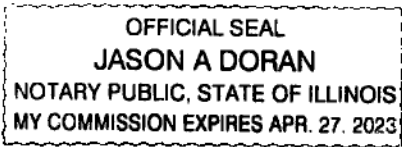
[Redacted Signature]

SONJA BENSON

State of Illinois )  
County of Cook ) ss.  
DuPage )

I, the undersigned, a Notary Public in and for said County, in the State aforesaid, do hereby certify that THOMAS BENSON and SONJA BENSON, are personally known to me to be the same person(s) whose name(s) is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act, for the uses and purposes therein set forth, including the release and waiver of the right of the homestead.

Given under my hand and notarial seal, on March 1, 2022.



[Redacted Signature]

(Notary Public)

Prepared By and Mail To:

Jason A. Doran  
Momkus LLP  
1001 Warrenville Road, Suite 500  
Lisle, IL 60532

Name and Address of Taxpayer/  
Address of Property:  
Thomas and Sonja Benson  
43233 North Crawford Road  
Antioch, Illinois 60002

## APPLICANT INFORMATION

<b>Owner (include all fee owners listed on deed):</b>		<b>Authorized Agent:</b> I/we hereby authorize this person to represent me/us in all matters related to this application:	
Name:	Thomas and Sonja Benson	Name:	Brian Platt
Address:	43233 N Crawford Rd Antioch	Address:	950 Coporate Woods Pkwy Vernon Hills
State/Zip:	Illinois, 60002	State/Zip:	Illinois, 60061
Daytime Phone:	[REDACTED]	Daytime Phone:	224-628-6832
Email:	[REDACTED]	Email:	permitting@tron.solar

<b>Applicant (if other than owner):</b>	<b>Contract Purchaser (if any):</b>
Name: Tron Solar LLC / Brian Platt	Name:
Address: 950 Coporate Woods Pkwy Vernon Hills	Address:
State/Zip: Illinois, 60061	State/Zip:
Daytime Phone: 224-628-6832	Daytime Phone:
Email: permitting@tron.solar	Email:

I/We hereby acknowledge that the [REDACTED] above is true and correct to the best of our knowledge.

Owner's Signature \_\_\_\_\_ Owner's Signature \_\_\_\_\_

N/A

Signature(s) of contract purchasers (If applicable)

I, Lester Gray a Notary Public aforesaid, do hereby certify that Brian Platt personally known to me is (are) the person(s) who executed the foregoing instrument bearing the date of 05/06/2025 and appeared before me this day in person and acknowledged that he/she/they signed, sealed and delivered the same instrument for the uses and purposes therein set forth.

Given under my hand and Notarial Seal this 6th day of May, 2025.

(Seal)

My Commission expires

September 22nd  
2025





# McHENRY-LAKE COUNTY SOIL & WATER CONSERVATION DISTRICT



1648 S. Eastwood Dr. Woodstock, Illinois 60098 (815) 338-0444 ext. 3 [www.mchenryswcd.org](http://www.mchenryswcd.org)

April 28, 2025

Brian Platt  
950 Corporate woods Parkway  
Vernon Hills, IL 60061  
Email: [permitting@tron.solar](mailto:permitting@tron.solar)

Re: Parcel # 03-06-400-003  
Common Location: 43233 N. Crawford Rd., Antioch, IL  
NRI# L25-029-4690  
Zoning Change: Solar PV, Permanent

Dear Mr. Platt:

The McHenry-Lake County Soil and Water Conservation District has carefully reviewed your application for the Natural Resource Information Report on the Tom Benson property as applied for in Report #25-029-4690. The SWCD finds that impact to natural resources from the proposed use is minimal for the purposes of the NRI report. A full Natural Resource Information Report will not be necessary.

This letter fulfills your requirement to notify the SWCD of land use changes as per the Illinois Compiled State Statutes, Chapter 70, Par. 405/1 et seq. Illinois Revised Statutes, Ch. 5, Par 106 et seq. Consultation in this matter is considered by the District to be terminated. The District does reserve the right to re-open consultation should new information be brought to our attention. If you have any questions concerning this letter, feel free to call our office.

Sincerely,

Spring M. Duffey  
Executive Director

# PHOTOVOLTAIC GROUND MOUNT SYSTEM

52 MODULES-GROUND MOUNTED - 21.580 KW DC, 15.080 KW AC

43233 N CRAWFORD RD, ANTIOCH, IL 60002



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
950 CORPORATE WOODS PARKWAY,  
VERNON HILLS, IL 60061  
LICENSE #: TGC110144

## PROJECT DATA

PROJECT ADDRESS: 43233 N CRAWFORD RD, ANTIOCH, IL 60002

OWNER: TOM BENSON

DESIGNER: ESR

SCOPE: 21.580 KW DC GROUND MOUNT SOLAR PV SYSTEM WITH  
52 TRINA SOLAR: TSM-NE09RC.05 415W PV MODULES WITH  
52 ENPHASE IQ8PLUS-72-2-US MICROINVERTERS  
01 TESLA POWERWALL 3 BATTERY

AUTHORITIES HAVING JURISDICTION:  
BUILDING: LAKE COUNTY  
ZONING: LAKE COUNTY  
UTILITY: COMED

## SHEET INDEX

PV-1	COVER SHEET
PV-2	SITE PLAN
PV-3	GROUND PLAN AND MODULES
PV-4	ELECTRICAL PLAN
PV-5	MOUNTING DETAIL
PV-5.1	ATTACHMENT DETAIL
PV-5.2	ATTACHMENT DETAIL
PV-5.3	ATTACHMENT DETAIL
PV-6	ELECTRICAL LINE DIAGRAM
PV-6.1	ELEVATION DETAIL
PV-7	WIRING CALCULATIONS
PV-8	LABEL
PV-9	PLACARD
PV-10	SITE PHOTOS
PV-11	EQUIPMENT SPECIFICATIONS

## SIGNATURE

## GENERAL NOTES

- ALL COMPONENTS ARE UL LISTED AND NEC CERTIFIED, WHERE WARRANTED.
- THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2017.
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.
- ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY.
- WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT.
- HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.
- A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 690.47 AND 250.50 THROUGH 60 AND 250-166 SHALL BE PROVIDED. PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
- PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE.
- PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING GROUND VENTS.
- ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE GROUND SURFACE.
- ALL SINAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SINAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
- AS SPECIFIED BY THE AHJ, EQUIPMENT USED IN UNGROUNDED SYSTEMS LABELED ACCORDING TO NEC 690.35(F).
- INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE LISTED FOR THIS USE [NEC 690.35(G)].
- THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)]
- ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL GROUND MOUNTED TRANSITION BOXES AND SWITCHES.
- ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
- SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41.
- PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12
- DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)]
- ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
- WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3).
- GROUNDTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL1703
- ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.

## VICINITY MAP



## HOUSE PHOTO



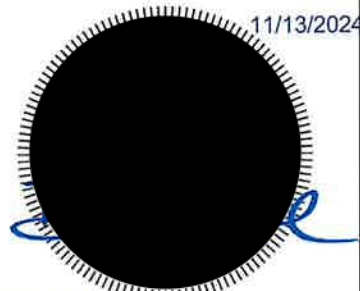
## CODE REFERENCES

PROJECT TO COMPLY WITH THE FOLLOWING:

2017 NATIONAL ELECTRICAL CODE (NEC)  
2018 INTERNATIONAL FIRE CODE (IFC)  
2018 INTERNATIONAL STATE BUILDING CODE (IBC)  
2018 INTERNATIONAL RESIDENTIAL CODE (IRC)

## REVISIONS

DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D



STRUCTURAL ELEMENTS ONLY  
EXP: 11/30/2026

## PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

## DRAWN BY

ESR

## SHEET NAME

COVER SHEET

## SHEET SIZE

ANSI B  
11" X 17"

## SHEET NUMBER

PV-1

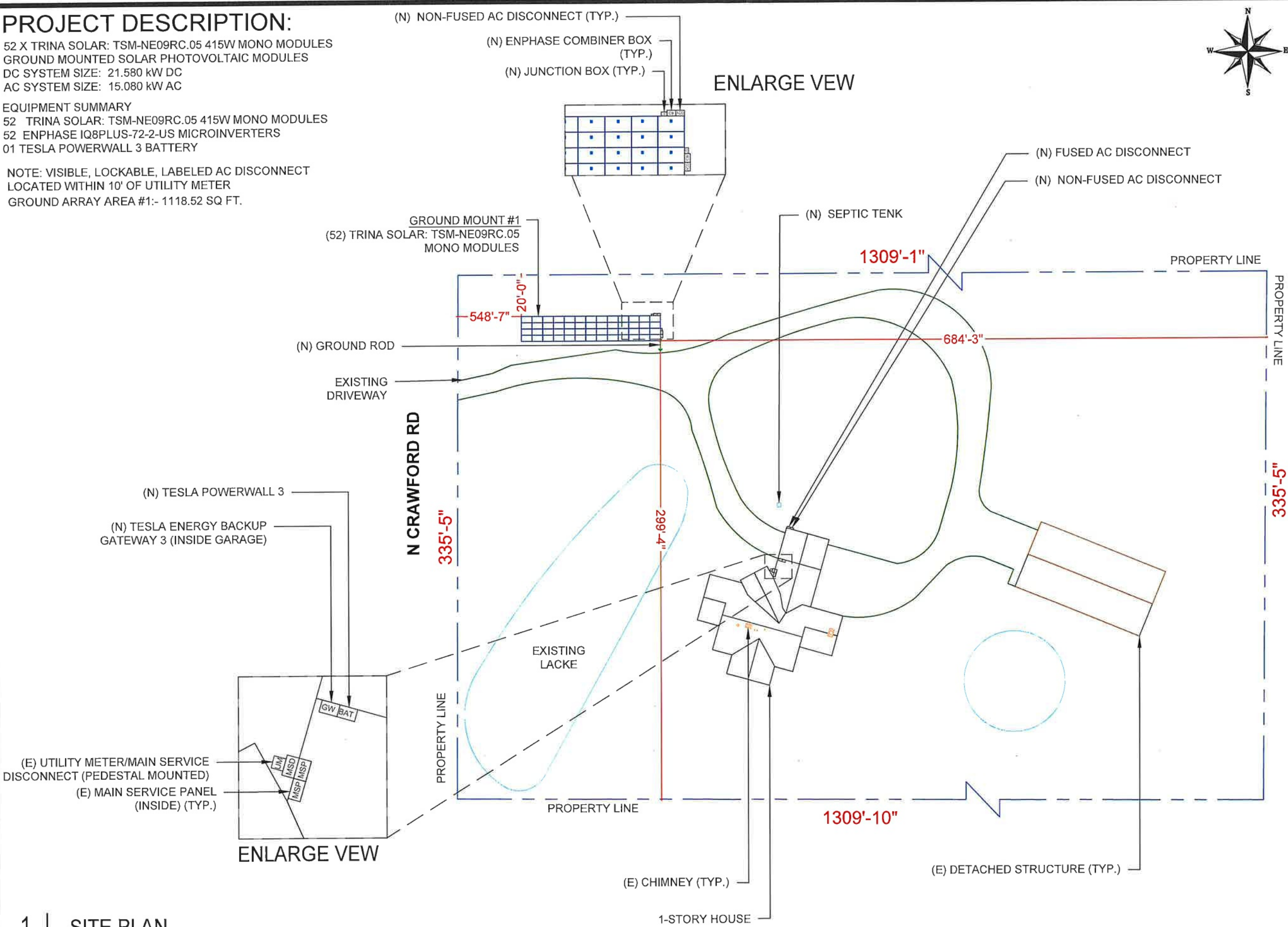


PROJECT DESCRIPTION:

52 X TRINA SOLAR: TSM-NE09RC.05 415W MONO MODULES  
GROUND MOUNTED SOLAR PHOTOVOLTAIC MODULES  
DC SYSTEM SIZE: 21.580 kW DC  
AC SYSTEM SIZE: 15.080 kW AC

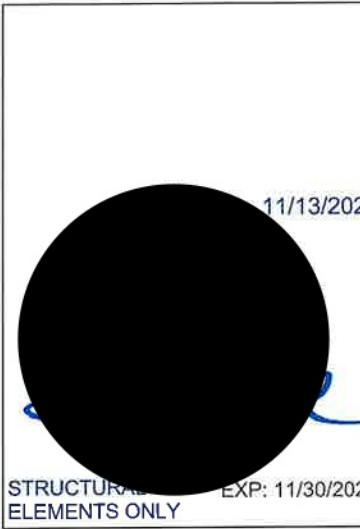
EQUIPMENT SUMMARY  
52 TRINA SOLAR: TSM-NE09RC.05 415W MONO MODULES  
52 ENPHASE IQ8PLUS-72-2-US MICROINVERTERS  
01 TESLA POWERWALL 3 BATTERY

NOTE: VISIBLE, LOCKABLE, LABELED AC DISCONNECT  
LOCATED WITHIN 10' OF UTILITY METER  
GROUND ARRAY AREA #1:- 1118.52 SQ FT.



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
950 CORPORATE WOODS PARKWAY,  
VERNON HILLS, IL 60061  
LICENSE #. TGC110144

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PROJECT NAME & ADDRESS  
**TOM BENSON  
RESIDENCE**  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
**ESR**

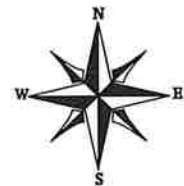
SHEET NAME  
**SITE PLAN**

SHEET SIZE  
**ANSI B  
11" X 17"**

SHEET NUMBER  
**PV-2**

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 52 MODULES  
MODULE TYPE = TRINA SOLAR: TSM-NE09RC.05 415W  
MONO MODULES  
MODULE WEIGHT = 47.0 LBS / 21.3KG.  
MODULE DIMENSIONS = 69.37" x 44.65" = 21.51 SF

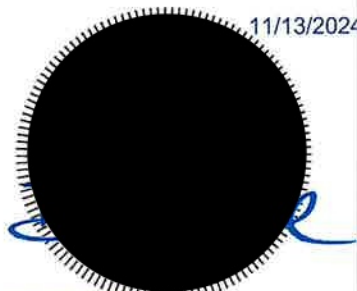


BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	52	TRINA SOLAR: TSM-NE09RC.05 415W MONO MODULES
ENPHASE IQ8PLUS-72-2-US MICROINVERTERS	52	ENPHASE IQ8PLUS-72-2-US MICROINVERTERS INVERTER



TRON SOLAR LLC.  
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PROJECT NAME & ADDRESS

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43233 N CRAWFORD RD,  
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ESR

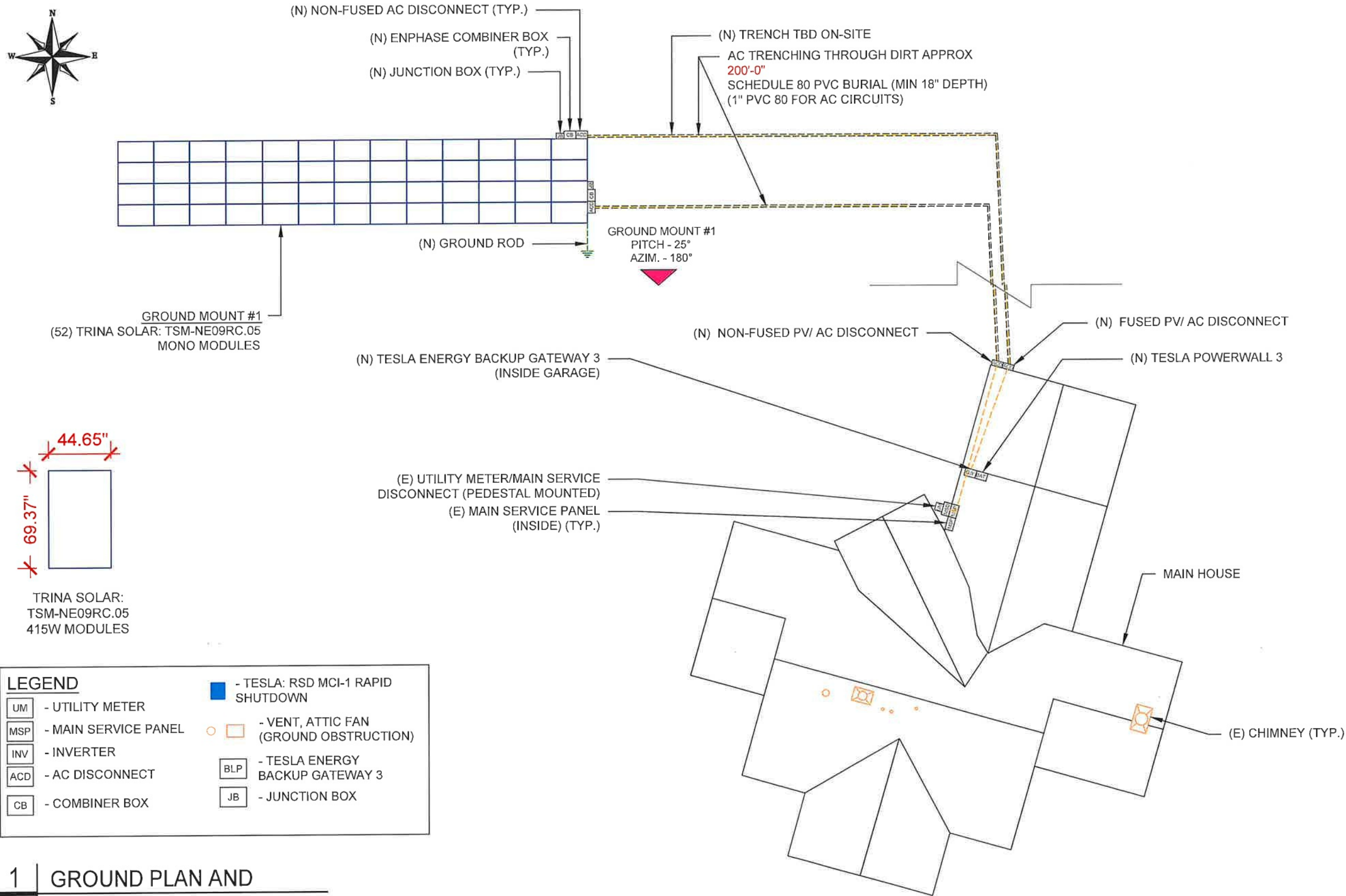
SHEET NAME  
GROUND PLAN AND  
MODULES

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-3

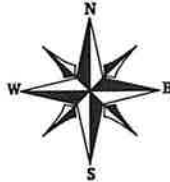


LEGEND	
UM	- UTILITY METER
MSP	- MAIN SERVICE PANEL
INV	- INVERTER
ACD	- AC DISCONNECT
CB	- COMBINER BOX
BLP	- TESLA ENERGY BACKUP GATEWAY 3
JB	- JUNCTION BOX
TESLA: RSD MCI-1 RAPID SHUTDOWN	
VENT, ATTIC FAN (GROUND OBSTRUCTION)	



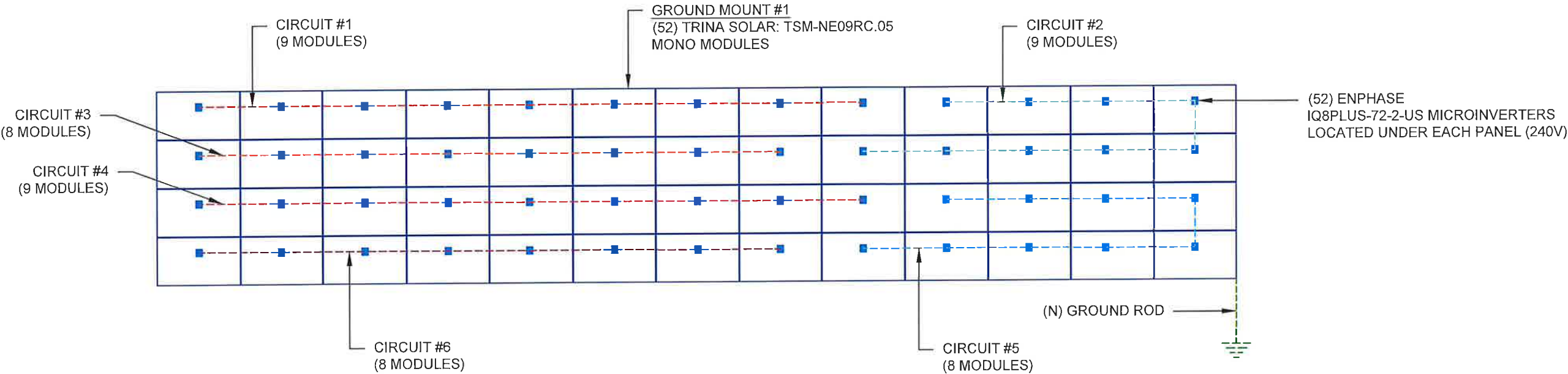
CIRCUIT LEGENDS	
	CIRCUIT #1
	CIRCUIT #2
	CIRCUIT #3
	CIRCUIT #4
	CIRCUIT #5
	CIRCUIT #6

NOTE : CONDUIT INSTALLED AT MINIMUM  
DISTANCE OF 7/8 INCHES ABOVE GROUND



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
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VERNON HILLS, IL 60061  
LICENSE #. TGC110144

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PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
ESR

SHEET NAME  
ELECTRICAL PLAN

SHEET SIZE  
ANSI B  
11" X 17"

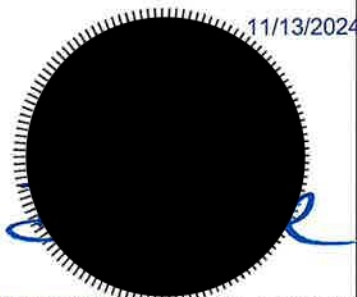
SHEET NUMBER  
PV-4



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
950 CORPORATE WOODS PARKWAY,  
VERNON HILLS, IL 60061  
LICENSE #. TGC110144

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SHEET NAME

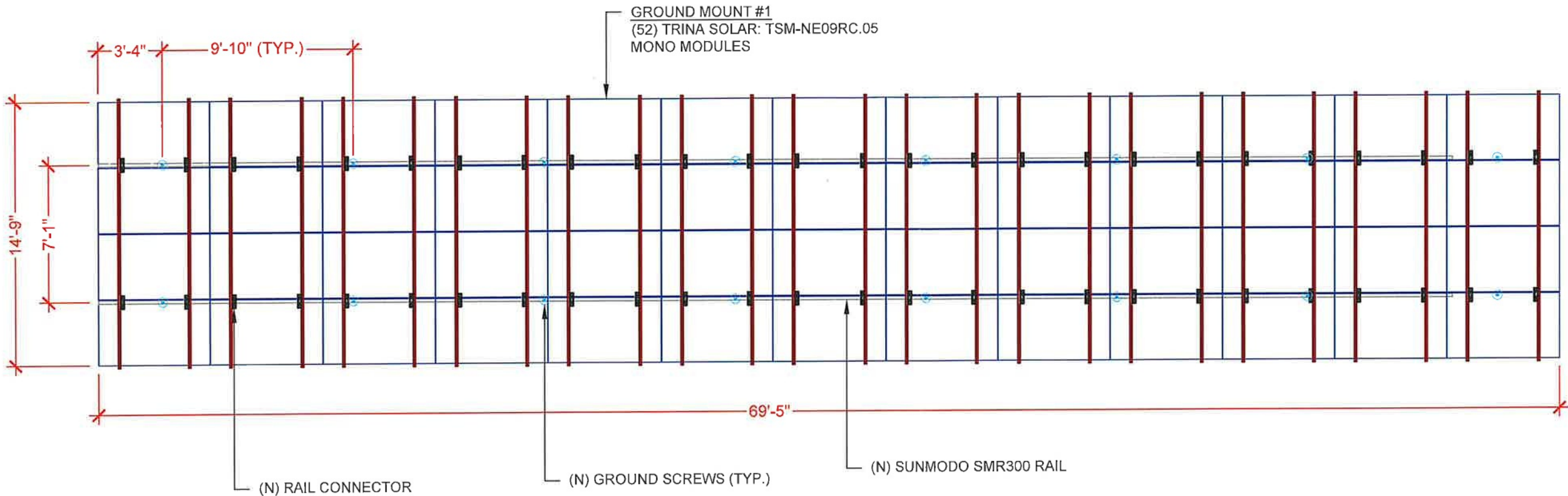
MOUNTING DETAIL

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

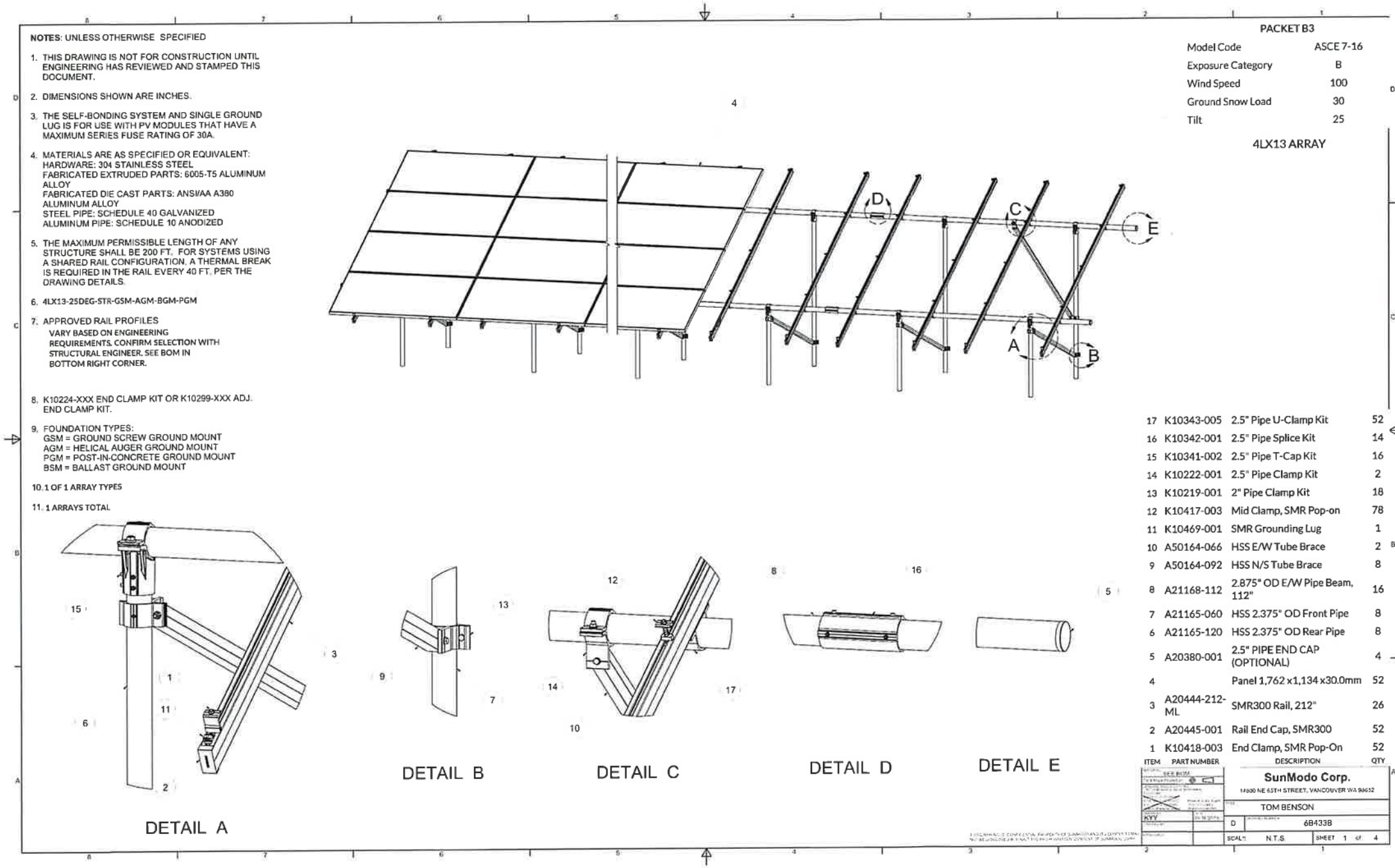
PV-5



Bill of Materials

Part	Spares	Total Qty
K10423-063 Ground Screw, 63"		16
A21165-060 HSS 2.375" OD Front Pipe		8
A21165-120 HSS 2.375" OD Rear Pipe		8
A21168-112 2.875" OD E/W Pipe Beam, 112"		16
A50164-066 HSS E/W Tube Brace		2
A50164-092 HSS N/S Tube Brace		8
A20444-212-ML SMR300 Rail, 212"		26
K10343-005 2.5" Pipe U-Clamp Kit		52
K10341-002 2.5" Pipe T-Cap Kit		16
K10219-001 2" Pipe Clamp Kit		18
K10222-001 2.5" Pipe Clamp Kit		2
K10342-001 2.5" Pipe Splice Kit		14
K10417-003 Mid Clamp, SMR Pop-on		78
K10418-003 End Clamp, SMR Pop-On		52
K10469-001 SMR Grounding Lug		1
A20445-001 Rail End Cap, SMR300		52

Sub Array #1 Layout



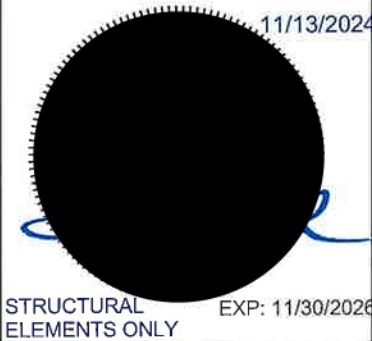
4 of 8

Last edited by Devansh Ashwinbhai Mandalaya on 09/16/24 5:05 AM PST



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
950 CORPORATE WOODS PARKWAY,  
VERNON HILLS, IL 60061  
LICENSE #. TGC110144

REVISIONS		
DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D



PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE

43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
ESR

SHEET NAME  
ATTACHMENT  
DATASHEET

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-5.1



**NOTES:**  
1. DIMENSIONS LABELED AS MAX ARE MAXIMUM ALLOWABLE  
AND MAY RESULT IN END POSTS BEING OUTSIDE ARRAY EDGES.  
MAXIMUM DIMENSIONS MAY BE REDUCED IF DESIRED.

**RAIL SPACING**  
LANDSCAPE: PER MODULE MANUFACTURER

The drawing shows a top-down view of a solar panel array. It consists of two main sections, each 904 inches wide, separated by a central gap. Each section contains three rows of panels. The panels are supported by a rail system. The rail spacing is indicated by a dimension line labeled '40 MAX' between two vertical lines. The total width of the array is indicated by a dimension line labeled '118'. The total length of the array is indicated by a dimension line labeled '120 IN. MAX. ALLOW. SPAN'. The minimum number of front posts is 8, and the minimum number of back posts is 8. The drawing is titled 'RAIL SPACING' and 'LANDSCAPE: PER MODULE MANUFACTURER'. A note at the top left states: 'NOTES: 1. DIMENSIONS LABELED AS MAX ARE MAXIMUM ALLOWABLE AND MAY RESULT IN END POSTS BEING OUTSIDE ARRAY EDGES. MAXIMUM DIMENSIONS MAY BE REDUCED IF DESIRED.' A title block at the bottom right contains the following information: 'SunModo Corp.', 'TOM BENSON', 'D', '6B433B', 'NTS', '2', '1', '4', '1'.

40 MAX

118

120 IN. MAX. ALLOW. SPAN

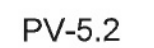
MIN # OF FRONT POSTS = 8

MIN # OF BACK POSTS = 8

904

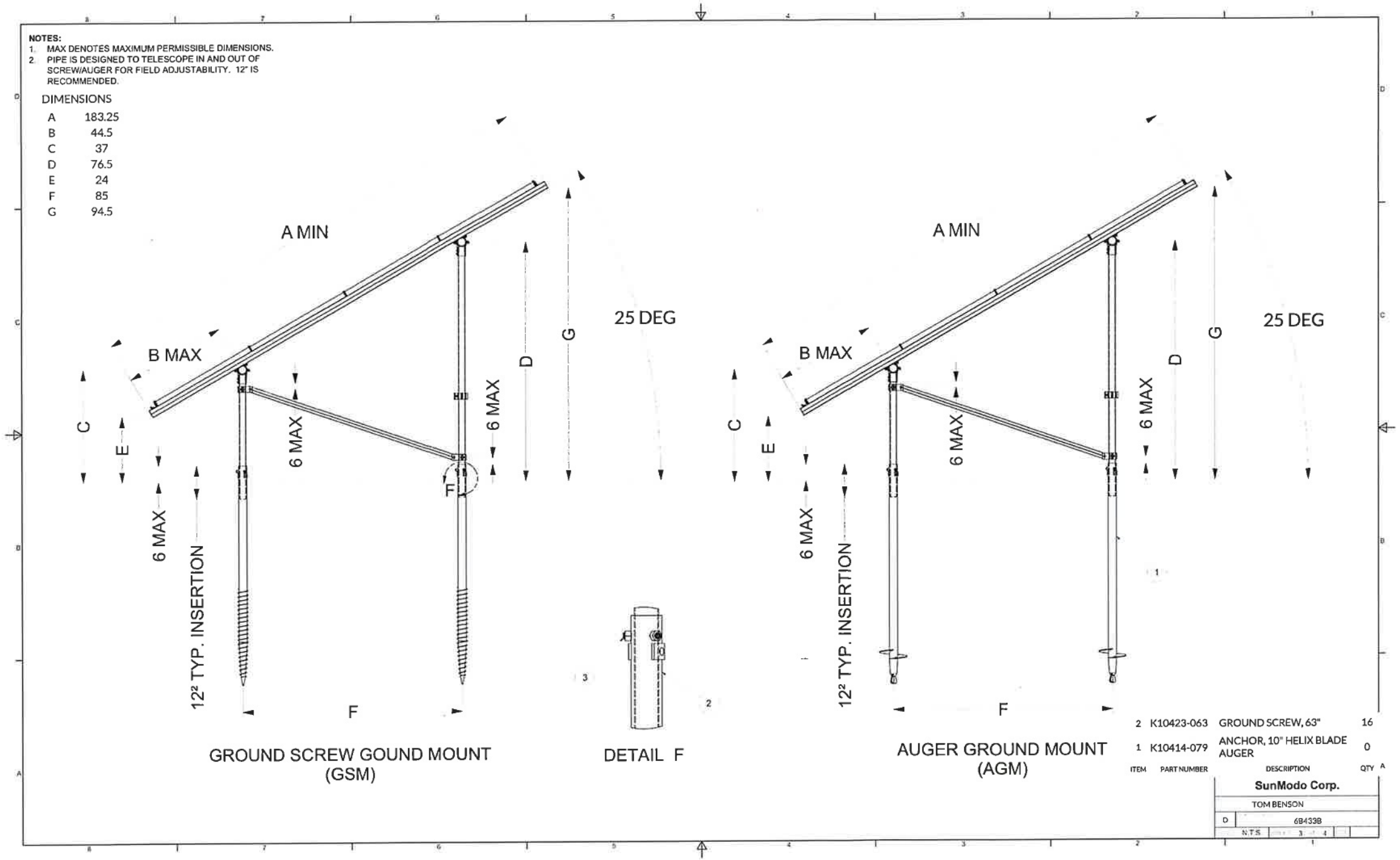
**SunModo Corp.**  
TOM BENSON  
D 6B433B  
NTS 2 1 4 1


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Sub Array #1 Foundation Part 1

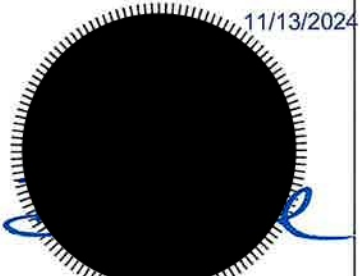




TRON  
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11/13/2024

STRUCTURAL ELEMENTS ONLY

EXP: 11/30/2026

PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME

ATTACHMENT DATASHEET

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

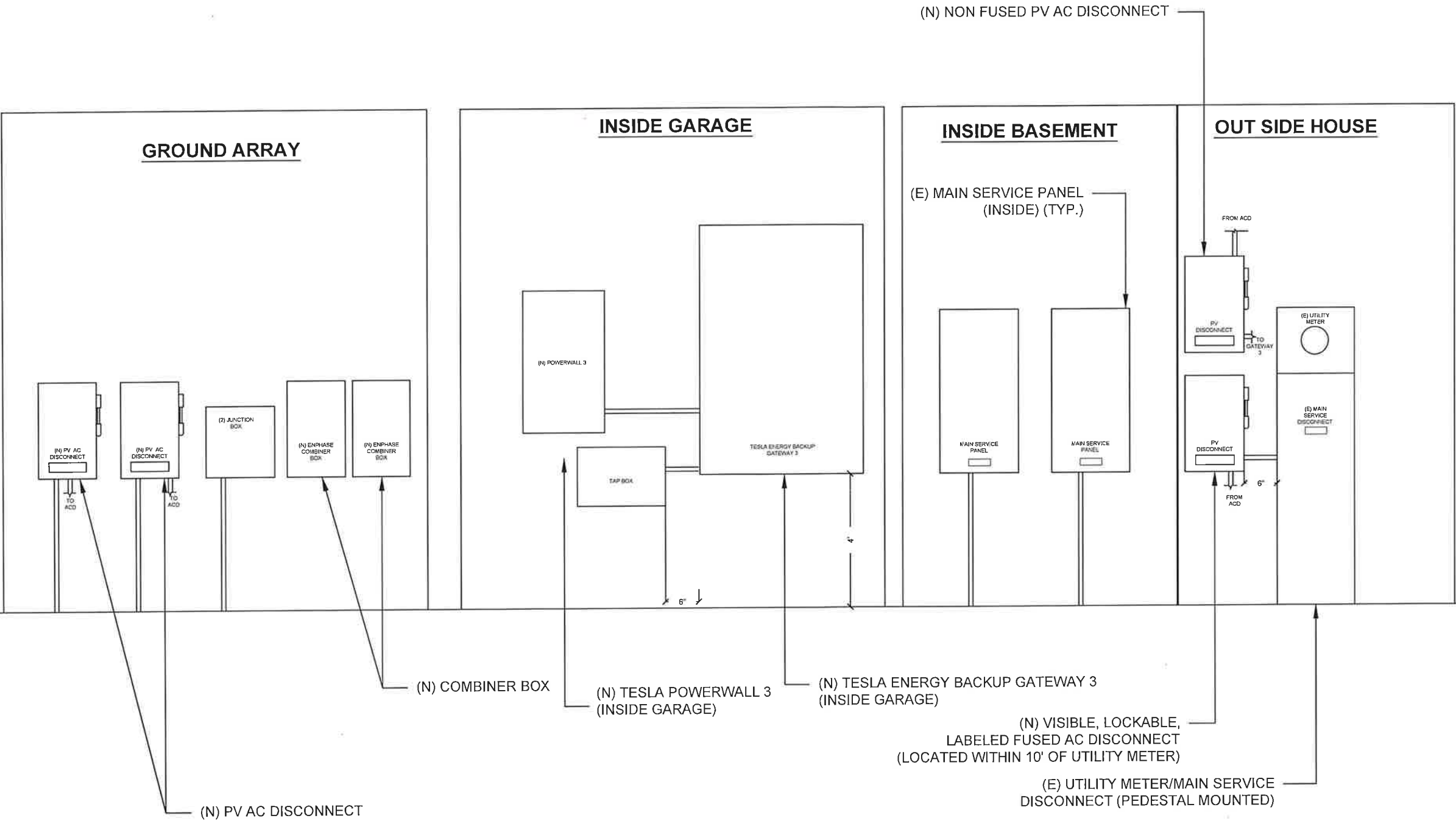
PV-5.3





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PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME

ELEVATION DETAIL

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-6 .1

1

ELEVATION DIAGRAM

PV-6

.1

SCALE: NTS



INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	ENPHASE IQ8PLUS-72-2-US MICROINVERTERS
MIN/MAX DC VOLT RATING	30V MIN/ 58V MAX
MAX INPUT POWER	235W-440W
NOMINAL AC VOLTAGE RATING	240V/ 211-264V
MAX AC CURRENT	1.21A
MAX MODULES PER CIRCUIT	13 (SINGLE PHASE)
MAX OUTPUT POWER	290 VA

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	TRINA SOLAR: TSM-NE09RC.05 415W MODULE
VMP	42.5V
IMP	9.77A
VOC	50.5V
ISC	10.40A
TEMP. COEFF. VOC	-0.24%/°C
MODULE DIMENSION	69.37"L x 44.65"W x 1.18"D (In Inch)

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-4°
AMBIENT TEMP (HIGH TEMP 2%)	35°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.24%/°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
.80	4-6
.70	7-9
.50	10-20

AC CALCULATIONS																						
CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OC PD SIZE (A)	NEUTRAL SIZE	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
CIRCUIT 1	#1 JUNCTION BOX	240	10.89	13.6125	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	35	2	30	0.96	1	28.8	PASS	2		0.67	N/A	#N/A
CIRCUIT 2	#1 JUNCTION BOX	240	10.89	13.6125	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	35	2	30	0.96	1	28.8	PASS	2		0.67	N/A	#N/A
CIRCUIT 3	#1 JUNCTION BOX	240	9.68	12.1	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	35	2	30	0.96	1	28.8	PASS	2		0.57	N/A	#N/A
CIRCUIT 4	#2 JUNCTION BOX	240	10.89	13.6125	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	35	2	30	0.96	1	28.8	PASS	2		0.67	N/A	#N/A
CIRCUIT 5	#2 JUNCTION BOX	240	10.89	13.6125	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	35	2	30	0.96	1	28.8	PASS	2		0.67	N/A	#N/A
CIRCUIT 6	#2 JUNCTION BOX	240	9.68	12.1	20	N/A	BARE COPPER #6 AWG	CU #12 AWG	25	PASS	35	2	30	0.96	1	28.8	PASS	2		0.57	N/A	#N/A
#1 JUNCTION BOX	#1 COMBINER BOX	240	10.89	13.6125	20	N/A	CU #10 AWG	CU #10 AWG	35	PASS	35	6	40	0.96	0.8	30.72	PASS	20	1.24	0.225	3/4" EMT	27.71106942
#2 JUNCTION BOX	#2 COMBINER BOX	240	10.89	13.6125	20	N/A	CU #10 AWG	CU #10 AWG	35	PASS	35	6	40	0.96	0.8	30.72	PASS	20	1.24	0.225	3/4" EMT	27.71106942
#1 COMBINER BOX	#1 AC DISCONNECT	240	31.46	39.325	40	CU #8 AWG	CU #10 AWG	CU #8 AWG	50	PASS	35	2	55	0.96	1	52.8	PASS	5	0.778	0.102	3/4" EMT	24.55909944
#2 COMBINER BOX	#3 AC DISCONNECT	240	31.46	39.325	40	CU #8 AWG	CU #10 AWG	CU #8 AWG	50	PASS	35	2	55	0.96	1	52.8	PASS	5	0.778	0.102	3/4" EMT	24.55909944
#1 AC DISCONNECT	#2 AC DISCONNECT	240	31.46	39.325	40	CU #2/0 AWG	CU #6 AWG	CU #2/0 AWG	175	PASS	35	2	195	0.96	1	187.2	PASS	200	0.0967	0.507	2" PVC	21.80492252
#3 AC DISCONNECT	#4 AC DISCONNECT	240	31.46	39.325	40	CU #2/0 AWG	CU #6 AWG	CU #2/0 AWG	175	PASS	35	2	195	0.96	1	187.2	PASS	200	0.0967	0.507	2" PVC	21.80492252
#2 AC DISCONNECT	GATEWAY 3	240	31.46	39.325	40	CU #8 AWG	CU #10 AWG	CU #8 AWG	50	PASS	35	2	55	0.96	1	52.8	PASS	5	0.778	0.102	3/4" EMT	24.55909944
TESLA POWERWALL	#5 AC DISCONNECT	240	48	60	60	CU #6 AWG	CU #10 AWG	CU #6 AWG	65	PASS	35	2	75	0.96	1	72	PASS	10	0.491	0.196	3/4" EMT	32.49530957
#5 AC DISCONNECT	GATEWAY 3	240	48	60	60	CU #6 AWG	CU #10 AWG	CU #6 AWG	65	PASS	35	2	75	0.96	1	72	PASS	10	0.491	0.196	3/4" EMT	32.49530957
GATEWAY 3	MAIN SERVICE PANEL	240	200	200	200	CU #3/0 AWG	CU #6 AWG	CU #3/0 AWG	200	PASS	35	2	225	0.96	1	216	PASS	5	0.0766	0.064	2" EMT	25.45887962
GATEWAY 3	BACKUP LOAD PANEL	240	200	200	200	CU #3/0 AWG	CU #6 AWG	CU #3/0 AWG	200	PASS	35	2	225	0.96	1	216	PASS	5	0.0766	0.064	2" EMT	25.45887962
#4 AC DISCONNECT	POI	240	31.46	39.325	40	CU #6 AWG	CU #6 AWG	CU #6 AWG	65	PASS	35	2	75	0.96	1	72	PASS	5	0.491	0.064	3/4" EMT	38.04878049

Circuit 1 Voltage Drop	1.772
Circuit 2 Voltage Drop	1.772
Circuit 3 Voltage Drop	1.672
Circuit 4 Voltage Drop	1.568
Circuit 5 Voltage Drop	1.568
Circuit 6 Voltage Drop	1.468

ELECTRICAL NOTES

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON GROUNDTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.
- CONDUIT INSTALLED AT MINIMUM DISTANCE OF 7/8 INCHES ABOVE GROUND .....NEC 310.15(B)(3)(C)



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LICENSE #. TGC110144

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REVISION	11/12/2024	D

PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME

WIRING CALCULATIONS

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-7



CAUTION:  
AUTHORIZED SOLAR  
PERSONNEL ONLY!

LABEL- 1:  
LABEL LOCATION:  
AC DISCONNECT

WARNING: PHOTOVOLTAIC  
POWER SOURCE

EVERY 10' ON CONDUIT & ENCLOSURES  
LABEL- 2:  
LABEL LOCATION:  
EMT/CONDUIT RACEWAY  
SOLADECK / JUNCTION BOX  
CODE REF: NEC 690.31 (D)(2)

WARNING  
ELECTRICAL SHOCK HAZARD  
TERMINALS ON THE LINE AND LOAD SIDES MAY  
BE ENERGIZED IN THE OPEN POSITION

LABEL- 3:  
LABEL LOCATION:  
AC DISCONNECT  
COMBINER  
MAIN SERVICE PANEL  
SUBPANEL  
MAIN SERVICE DISCONNECT  
CODE REF: NEC 706.15(C)(4) AND NEC 690.13(B)

WARNING DUAL POWER SOURCE  
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL- 4:  
LABEL LOCATION:  
UTILITY METER  
MAIN SERVICE PANEL  
SUBPANEL  
CODE REF: NEC 705.12(C) & NEC 690.59

WARNING  
TURN OFF PHOTOVOLTAIC AC  
DISCONNECT PRIOR TO  
WORKING INSIDE PANEL

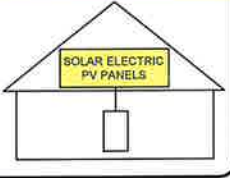
LABEL- 5:  
LABEL LOCATION:  
MAIN SERVICE PANEL  
SUBPANEL  
MAIN SERVICE DISCONNECT  
COMBINER  
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

WARNING  
POWER SOURCE OUTPUT  
CONNECTION. DO NOT  
RELOCATE THIS  
OVERCURRENT DEVICE

LABEL- 7:  
LABEL LOCATION:  
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)  
SUBPANEL (ONLY IF SOLAR IS BACK-FED)  
CODE REF: NEC 705.12(B)(3)(2)

SOLAR PV SYSTEM EQUIPPED  
WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN  
SWITCH TO THE  
"OFF" POSITION TO  
SHUT DOWN PV SYSTEM  
AND REDUCE  
SHOCK HAZARD  
IN THE ARRAY



LABEL- 8:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: IFC 605.11.3.1(1) & 690.56(C)

RAPID SHUTDOWN SWITCH  
FOR SOLAR PV SYSTEM

LABEL- 9:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC  
AC DISCONNECT

LABEL- 10:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC  
AC DISCONNECT

NOMINAL OPERATING AC VOLATGE 240 V

RATED AC OUTPUT CURRENT 48.0 A

LABEL- 11:  
LABEL LOCATION:  
MAIN SERVICE PANEL  
SUBPANEL  
AC DISCONNECT  
CODE REF: NEC 690.54

MAIN PHOTOVOLTAIC  
SYSTEM DISCONNECT

LABEL- 12:  
LABEL LOCATION:  
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE  
DISCONNECT IS PRESENT)  
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC  
DC DISCONNECT

LABEL- 13:  
LABEL LOCATION:  
INVERTER  
CODE REF: CEC 690.13(B)

WARNING  
TRI POWER SUPPLY  
SOURCES: UTILITY GRID,  
PV SOLAR ELECTRIC  
SYSTEM AND BATTERY  
STORAGE SYSTEM

LABEL- 14:  
LABEL LOCATION:  
UTILITY METER  
MAIN SERVICE PANEL  
CODE REF: CEC 705.12(B)(3-4) & CEC 690.59

PHOTOVOLTAIC  
AC DISCONNECT #1 AND #2

NOMINAL OPERATING AC VOLATGE 240 V

RATED AC OUTPUT CURRENT 31.46 A

LABEL- 11:  
LABEL LOCATION:  
MAIN SERVICE PANEL  
SUBPANEL  
AC DISCONNECT  
CODE REF: NEC 690.54

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PROJECT NAME & ADDRESS

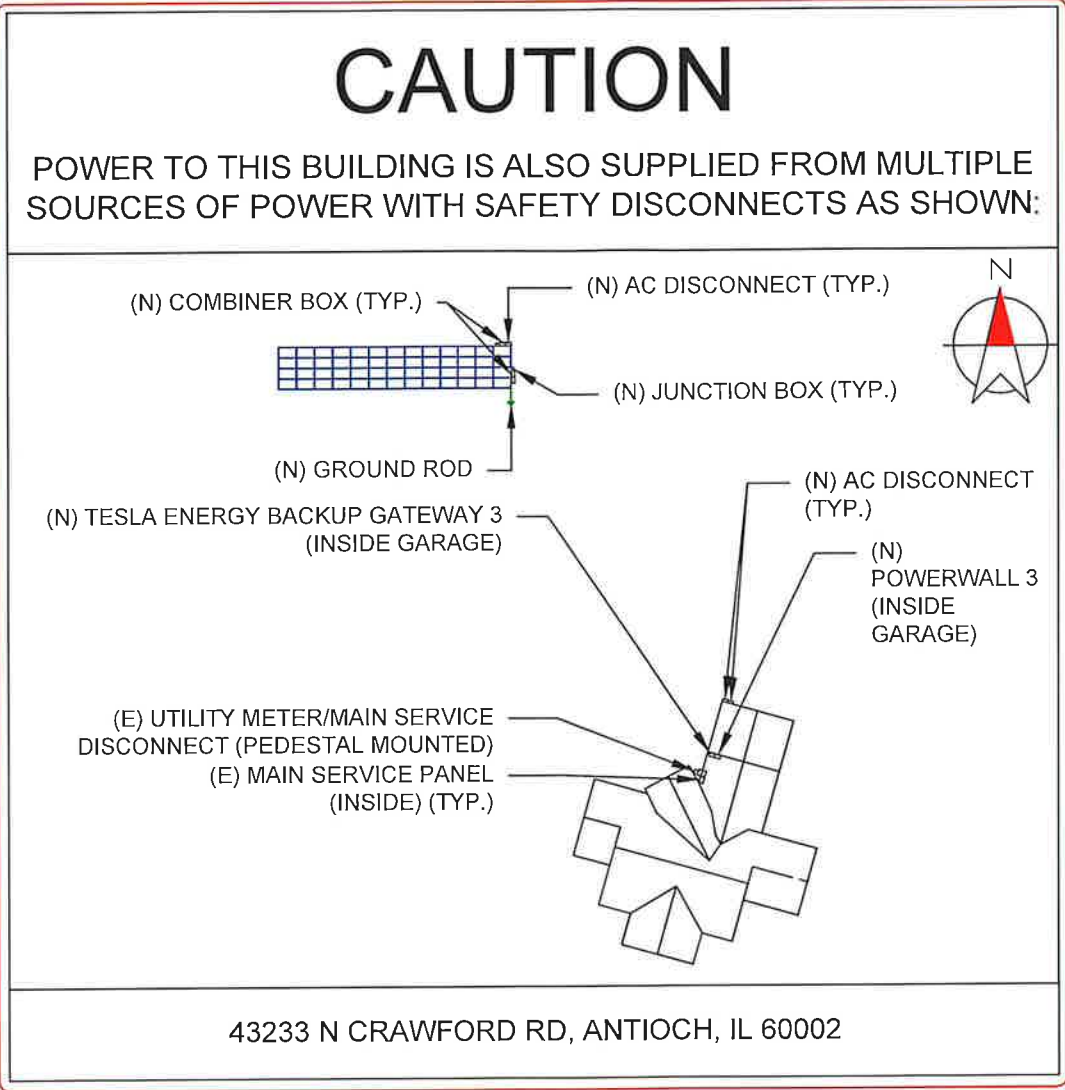
TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
ESR

SHEET NAME  
LABELS

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-8



DIRECTORY  
PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN:  
NEC 690.56(A)(B), NEC 705.10)

LABELING NOTES:

1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
2. LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145(f)(7), ANSI Z535.4-2011
3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21(B)(1)]
5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY AFFIXED [IFC 605.11.1.3]

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PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME

PLACARD

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-9



MSP LOCATION



UTILITY METER LOCATION



HOUSE LOCATION



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
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DESCRIPTION	DATE	REV
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REVISION	11/12/2024	D

PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
ESR

SHEET NAME  
SITE PHOTO

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-10



Vertex S+

BACKSHEET MONOCRYSTALLINE MODULE

430W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21.5%

MAXIMUM EFFICIENCY

Mono Multi Solutions

PRODUCT: TSM-NE09RC.05  
PRODUCT RANGE: 400-430W



#### Small in size, bigger on power

- Up to 430W, 21.5% module efficiency with high density interconnect technology
- Reduce installation cost with higher power bin and efficiency
- Boost performance in warm weather with low temperature coefficient and operating temperature



#### High Reliability

- Innovative non-destructive cutting for improved mechanical resistance and strength
- Excellent fire rating, weather resistance, salt spray, sand dust, ammonia performance which is fully applicable in coastal, high temperature, humidity area and harsh environment



#### Ultra-low Degradation, longer warranty, higher output

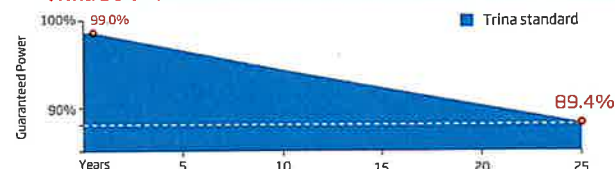
- First-year degradation 1% and annual degradation at 0.4%
- Up to 25 years product warranty and 25 years power warranty



#### Universal solution for residential and C&I rooftops

- Easy for integration, designed for compatibility with existing mainstream inverters and diverse mounting systems
- Perfect size and low weight for handling and installation
- Most valuable solution on low load capacity rooftops (weight similar to backsheet version)
- Mechanical performance up to 6000 Pa positive load and 4000 Pa negative load

#### Trina Solar's Vertex Bifacial Backsheet Performance Warranty



#### Comprehensive Products and System Certificates



Trinasolar

Trinasolar

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

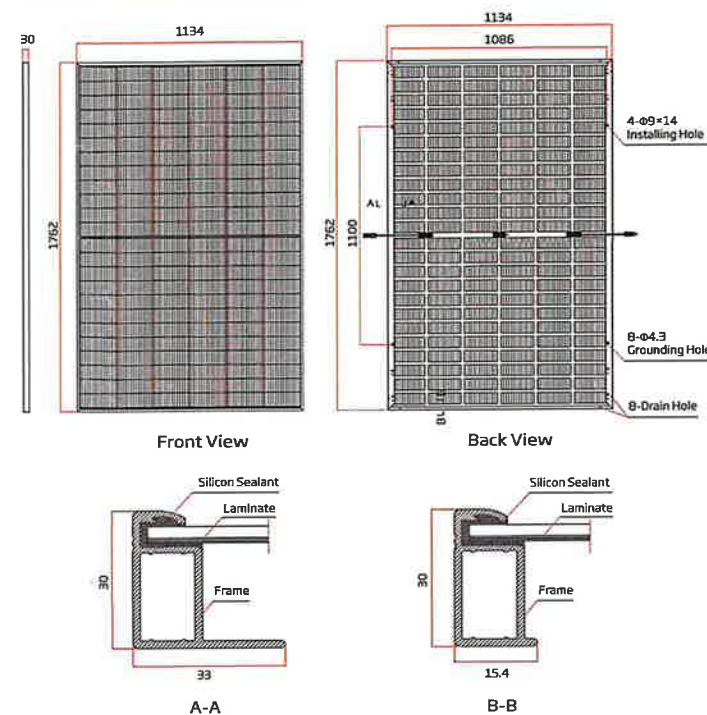
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Version number: TSM\_NA\_EN\_2023\_A

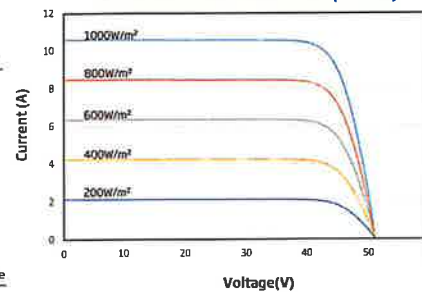
www.trinasolar.com

Vertex S+ BACKSHEET MONOCRYSTALLINE MODULE

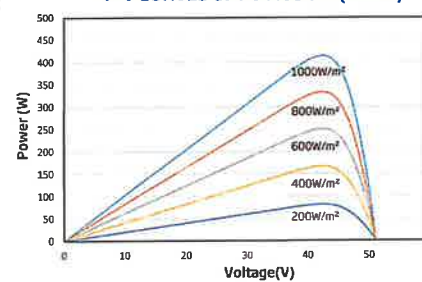
#### DIMENSIONS OF PV MODULE(mm)



#### I-V CURVES OF PV MODULE(415W)



#### P-V CURVES OF PV MODULE(415W)



#### ELECTRICAL DATA (STC)

Peak Power Watts- $P_{max}$ (Wp)*	400	405	410	415	420	425	430
Power Tolerance- $P_{MAX}$ (W)				0~+5			
Maximum Power Voltage- $V_{mp}$ (V)	41.3	41.7	42.1	42.5	42.8	43.2	43.6
Maximum Power Current- $I_{mp}$ (A)	9.68	9.71	9.73	9.77	9.80	9.84	9.87
Open Circuit Voltage- $V_{oc}$ (V)	49.2	49.6	50.1	50.5	50.9	51.4	51.8
Short Circuit Current- $I_{sc}$ (A)	10.30	10.33	10.37	10.40	10.43	10.47	10.50
Module Efficiency $\eta_m$ (%)	20.0	20.3	20.5	20.8	21.0	21.3	21.5

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

#### Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Total Equivalent power- $P_{max}$ (Wp)	426	431	437	442	447	453	458
Maximum Power Voltage- $V_{mp}$ (V)	41.3	41.7	42.1	42.5	42.8	43.2	43.6
Maximum Power Current- $I_{mp}$ (A)	10.31	10.34	10.36	10.41	10.44	10.48	10.51
Open Circuit Voltage- $V_{oc}$ (V)	49.2	49.6	50.1	50.5	50.9	51.4	51.8
Short Circuit Current- $I_{sc}$ (A)	10.97	11.00	11.04	11.08	11.11	11.15	11.18
Irradiance ratio (rear/front)				10%			

Power Bifacially: 65±10%.

#### ELECTRICAL DATA (NOCT)

Maximum Power- $P_{max}$ (Wp)	312	308	312	316	319	324	328
Maximum Power Voltage- $V_{mp}$ (V)	38.6	39.0	39.3	39.7	40.0	40.4	40.7
Maximum Power Current- $I_{mp}$ (A)	7.88	7.91	7.93	7.96	7.98	8.01	8.04
Open Circuit Voltage- $V_{oc}$ (V)	46.6	47.0	47.5	47.8	48.2	48.7	49.1
Short Circuit Current- $I_{sc}$ (A)	8.30	8.32	8.36	8.38	8.41	8.44	8.46

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

#### MECHANICAL DATA

Solar Cells	Topcon Bifacial
No. of cells	144cells
Module Dimensions	1762×1134×30 mm (69.37×44.65×1.18 inches)
Weight	21.3kg (47.0 lb)
Front Glass	3.2 mm (0.12 inches), High Transmission, Tempered Glass
Encapsulant material	POE/EVA
BackSheet	Black Grid Transparent Backsheet
Frame	30mm (1.18 inches) Anodized Aluminium Alloy, Black
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Landscape: N 1100 mm/ P 1100 mm (43.31/43.31 inches)
Connector	MC4 EVO2
Fire Type	Type 1 or Type 2

#### TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{max}$	-0.30%/°C
Temperature Coefficient of $V_{oc}$	-0.24%/°C
Temperature Coefficient of $I_{sc}$	0.04%/°C

#### MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	25 A

#### WARRANTY

25 year Product Workmanship Warranty  
25 year Power Warranty  
1% first year degradation  
0.4% Annual Power Attenuation

(Please refer to product warranty for details)

#### PACKAGING CONFIGURATION

Modules per box: 36 pieces  
Modules per 40' container: 792 pieces  
Pallet dimensions (L x W x H): 1800 x 1195 x 1259 mm  
Pallet weight: 829 kg (1827 lb)

TRON solar

TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
950 CORPORATE WOODS PARKWAY,  
VERNON HILLS, IL 60061  
LICENSE #: TGC110144

#### REVISIONS

DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D

#### PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

#### DRAWN BY

ESR

SHEET NAME  
MODULE  
DATASHEET

#### SHEET SIZE

ANSI B  
11" X 17"

#### SHEET NUMBER

PV-11



## IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built using advanced 55-nm technology with high-speed digital logic and has superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-and-play MC4 connectors.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conform with various regulations, when installed according to the manufacturer's instructions.

\*Meets UL 1741 only when installed with IQ System Controller 2 or 3.  
\*\*IQ8 and IQ8+ support split-phase, 240 V installations only.

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DATA SHEET

## IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		UNITS	IQ8-60-2-US	IQ8PLUS-72-2-US
Commonly used module pairings <sup>1</sup>	W		235–350	235–440
Module compatibility	—	To meet compatibility, PV modules must be within maximum input DC voltage and maximum module $I_{sc}$ listed below. Module compatibility can be checked at <a href="https://enphase.com/installers/microinverters/calculator">https://enphase.com/installers/microinverters/calculator</a> .		
MPPT voltage range	V		27–37	27–45
Operating range	V		16–48	16–58
Minimum/Maximum start voltage	V		22/48	22/58
Maximum input DC voltage	V		50	60
Maximum continuous input DC current	A		10	12
Maximum input DC short-circuit current	A			25
Maximum module ( $I_{sc}$ )	A			20
Overvoltage class DC port	—			II
DC port backfeed current	mA			0
PV array configuration	—	Ungrounded array; no additional DC side protection required; AC side protection requires maximum 20 A per branch circuit.		
OUTPUT DATA (AC)		UNITS	IQ8-60-2-US	IQ8PLUS-72-2-US
Peak output power	VA		245	300
Maximum continuous output power	VA		240	290
Nominal grid voltage (L-L)	V		240, split-phase (L-L), 180°	
Minimum and Maximum grid voltage <sup>2</sup>	V		211–264	
Maximum continuous output current	A		1.0	1.21
Nominal frequency	Hz		60	
Extended frequency range	Hz		47–68	
AC short-circuit fault current over three cycles	A rms		2	
Maximum units per 20 A (L-L) branch circuit <sup>3</sup>	—		16	13
Total harmonic distortion	%		<5	
Overvoltage class AC port	—		III	
AC port backfeed current	mA		30	
Power factor setting	—		1.0	
Grid-tied power factor (adjustable)	—		0.85 leading ... 0.85 lagging	
Peak efficiency	%		97.7	
CEC weighted efficiency	%		97	
Nighttime power consumption	mW		23	25
MECHANICAL DATA				
Ambient temperature range	–40°C to 60°C (–40°F to 140°F)			
Relative humidity range	4% to 100% (condensing)			
DC connector type	MC4			
Dimensions (H × W × D)	212 mm (8.3 in) × 175 mm (6.9 in) × 30.2 mm (1.2 in)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection—no fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure			
Environmental category/UV exposure rating	NEMA Type 6/Outdoor			

(1) No enforced DC/AC ratio.  
(2) Nominal voltage range can be extended beyond nominal if required by the utility.  
(3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SP-12A-DSH-00207-3.0-EN-US-2024-02-12

IQ8SP-12A-DSH-00207-3.0-EN-US-2024-02-12



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LICENSE #. TGC110144

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REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D

PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME  
MICROINVERTER  
DATASHEET

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER  
PV-11  
(2)

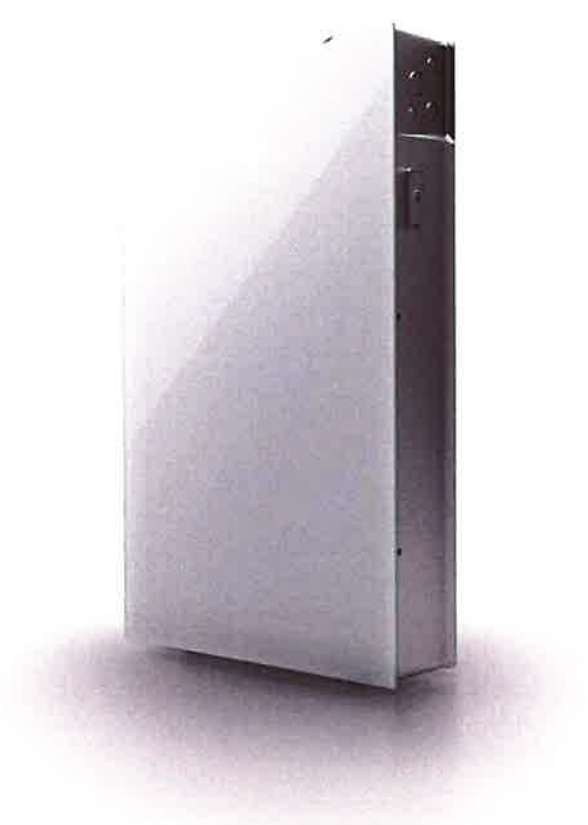


Powerwall 3

Power Everything

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads rated up to 185 LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for fast and efficient installations, modular system expansion, and simple connection to any electrical service.



Powerwall 3 Technical Specifications

System Technical Specifications	Model Number	1707000-xx-y
	Nominal Grid Voltage (Input & Output)	120/240 VAC
	Grid Type	Split phase
	Frequency	60 Hz
	Overcurrent Protection Device	60 A <i>See <a href="#">Powerwall 3 Installation Manual</a> for fuse requirements if using 60 A fuse for overcurrent protection</i>
	Solar to Battery to Home/Grid Efficiency	89% <sup>1,2</sup>
	Solar to Home/Grid Efficiency	97.5% <sup>3</sup>
	Supported Islanding Devices	Gateway 3, Backup Switch, Backup Gateway 2
	Connectivity	Wi-Fi (2.4 and 5 GHz), Ethernet, Cellular (LTE/4G <sup>4</sup> )
	Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
Battery Technical Specifications	AC Metering	Revenue Grade (+/- 0.5%, ANSI C12.20)
	Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
	Customer Interface	Tesla Mobile App
	Warranty	10 years
Solar Technical Specifications	Nominal Battery Energy	13.5 kWh AC <sup>2</sup>
	Maximum Continuous Discharge Power	11.5 kW AC
	Output Power Factor Rating	0 – 1 (Grid Code configurable)
	Maximum Continuous Charge Current / Power	20.8 A AC / 5 kW
	Maximum Output Fault Current	10 kA
	Load Start Capability	185 LRA
	Power Scalability	Up to 4 Powerwall 3 units supported
Solar Technical Specifications	Maximum Solar STC Input	20 kW
	Withstand Voltage	600 V DC
	PV DC Input Voltage Range	60 — 550 V DC
	PV DC MPPT Voltage Range	60 — 480 V DC
	MPPTs	6
	Maximum Current per MPPT (I <sub>mp</sub> )	13 A <sup>5</sup>
	Maximum Short Circuit Current per MPPT (I <sub>sc</sub> )	15 A <sup>5</sup>

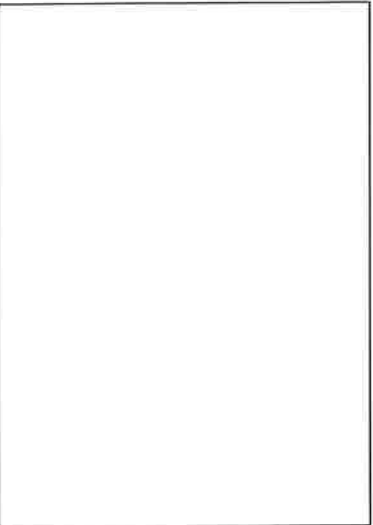
<sup>1</sup>Typical solar shifting use case.  
<sup>2</sup>Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.  
<sup>3</sup>Tested using CEC weighted efficiency methodology.  
<sup>4</sup>The customer is expected to provide internet connectivity for Powerwall 3; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.  
<sup>5</sup>Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A I<sub>mp</sub> / 30 A I<sub>sc</sub>.

TRON

solar

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LICENSE #. TGC110144

REVISIONS		
DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D



PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE

43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME

EQUIPMENT  
DATASHEET

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-12

Powerwall 3 Technical Specifications

Environmental Specifications

Operating Temperature	-20°C to 50°C (-4°F to 122°F) <sup>o</sup>
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	-20°C to 30°C (-4°F to 86°F), up to 95% RH, non-condensing, State of Energy (SOE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Rating	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP55 (Wiring Compartment)
Pollution Rating	PD3
Operating Noise @ 1 m	< 50 db(A) typical < 62 db(A) maximum

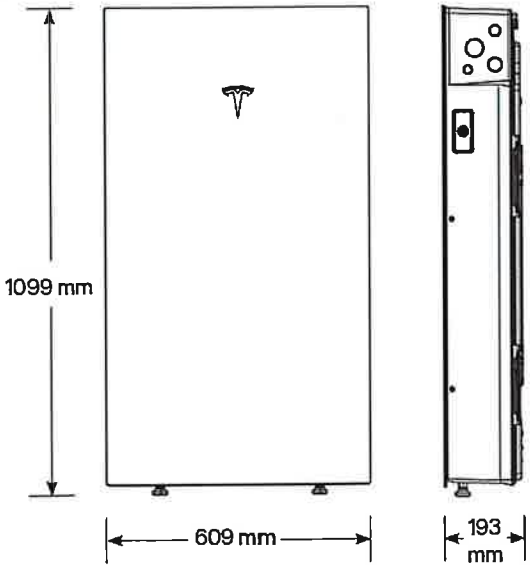
<sup>o</sup>Performance may be de-rated at operating temperatures above 40°C (104°F).

Compliance Information

Certifications	UL 1741, UL 9540, UL 9540A, UL 3741, UL 1741 PCS, UL 1741 SA, UL 1741 SB, UL 1973, UL 1699B, UL 1998, CSA C22.2 No. 0.8, CSA C22.2 No. 107.1, CSA C22.2 No. 330, CSA 22.3 No. 9, IEEE 1547, IEEE 1547A, IEEE 1547.1, CA Rule No.21
Grid Connection	United States and Canada
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)
Fire Testing	Meets the unit level performance criteria of UL 9540A

Mechanical Specifications

Dimensions	1099 x 609 x 193 mm (43.25 x 24 x 7.6 in)
Weight	130 kg (287 lb)
Mounting Options	Floor or wall mount



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REVISIONS		
DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D

PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
DATASHEET

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-13



DATA SHEET



X-IQ-AM1-240-5  
X-IQ-AM1-240-5C

# IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.



**IQ Series Microinverters**  
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.



**IQ System Controller 3/3G**  
Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.



**IQ Battery 5P**  
Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.



**IQ Load Controller**  
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.



5-year limited warranty



\*For country-specific warranty information, see the <https://enphase.com/installers/resources/warranty> page.

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IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01

## IQ Combiner 5/5C

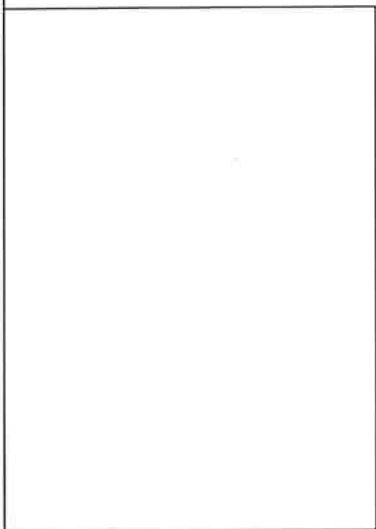
MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (± 2.5%), and IQ Battery monitoring (±2.5%). Includes a silver solar shield to deflect heat.
IQ Combiner 5C (X-IQ-AM1-240-5C)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%) and IQ Battery monitoring (±2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05) <sup>1</sup> . Includes a silver solar shield to deflect heat.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	60 A busbar with support for 1 × IQ Gateway breaker and 4 × 20 A breaker for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to ±0.5%
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to ±2.5%
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to ±2.5%
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-02 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED. ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws)
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-02 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box

1. A plug-and-play Industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.



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LICENSE #. TGC110144

REVISIONS		
DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D



PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE

43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY  
ESR

SHEET NAME  
RAPID SHUT DOWN  
DATASHEET

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-16

IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01





# GO BIG ON TURF

SunTurf™ Ground Mount System



SunModo offers the next generation Ground Mount System with SunTurf™. The streamlined design combines the strength of Helio Rails with steel pipes to create the perfect ground mount solution.

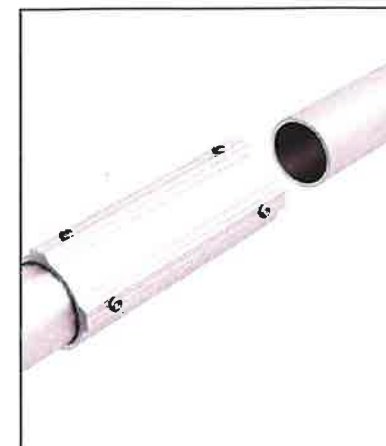
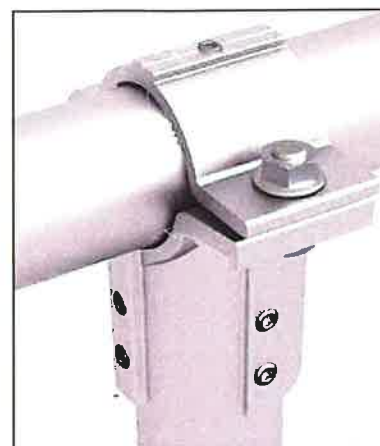
SunTurf™ is ideal for solar installers looking for a durable and cost-effective system that can accommodate a wide variety of soil conditions.

## The SunTurf™ Ground Mount Advantage

- ✓ Easily scalable from kilowatts to multimegawatts PV Arrays.
- ✓ Foundation design solution for every soil condition.
- ✓ Online configuration tool available to streamline design process.
- ✓ Components optimized for strength, durability and fast installation.
- ✓ UL 2703 Listed by Intertek.

## Key Features of SunTurf™ Ground Mount System

SunTurf™ Ground Mount System easily integrate Helio Rails with Schedule 40 steel pipes. No drilling is required to attach the aluminum rails to the horizontal pipe. Optional bracing can provide additional structural rigidity for sites with high snow or wind load conditions. Anchor any ground mount installation using one of our fountain types including helical piles, precast ballasts and concrete piers.



## Augers and Ground Screws

Our augers are suitable for use in weak to moderate strength soils and areas with a high-water table. Our ground screws are ideal for use in hard packed earth or soils with large amounts of cobble and gravel.



Ground Screw



Earth Auger

### Technical Data

Application	Ground Mount
Material	High grade aluminum, galvanized steel and 304 stainless steel hardware
Module Orientation	Portrait and Landscape
Tilt Angle	Range between 10 to 50 degrees
Foundation Types	Post in concrete, helical earth auger, ground screw anchor and ballast
Structural Integrity	Stamped engineering letters available
Certificate	UL2703 listed by ETL
Warranty	25 years

SunModo, Corp. Vancouver, WA., USA • [www.sunmodo.com](http://www.sunmodo.com) • 360.844.0048 • [info@sunmodo.com](mailto:info@sunmodo.com)



TRON SOLAR LLC.  
CONTRACTOR ADDRESS:  
950 CORPORATE WOODS PARKWAY,  
VERNON HILLS, IL 60061  
LICENSE #. TGC110144

### REVISIONS

DESCRIPTION	DATE	REV
REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/06/2024	C
REVISION	11/12/2024	D

### PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

### DRAWN BY

ESR

### SHEET NAME

ATTACHMENT  
DATASHEET

### SHEET SIZE

ANSI B  
11" X 17"

### SHEET NUMBER

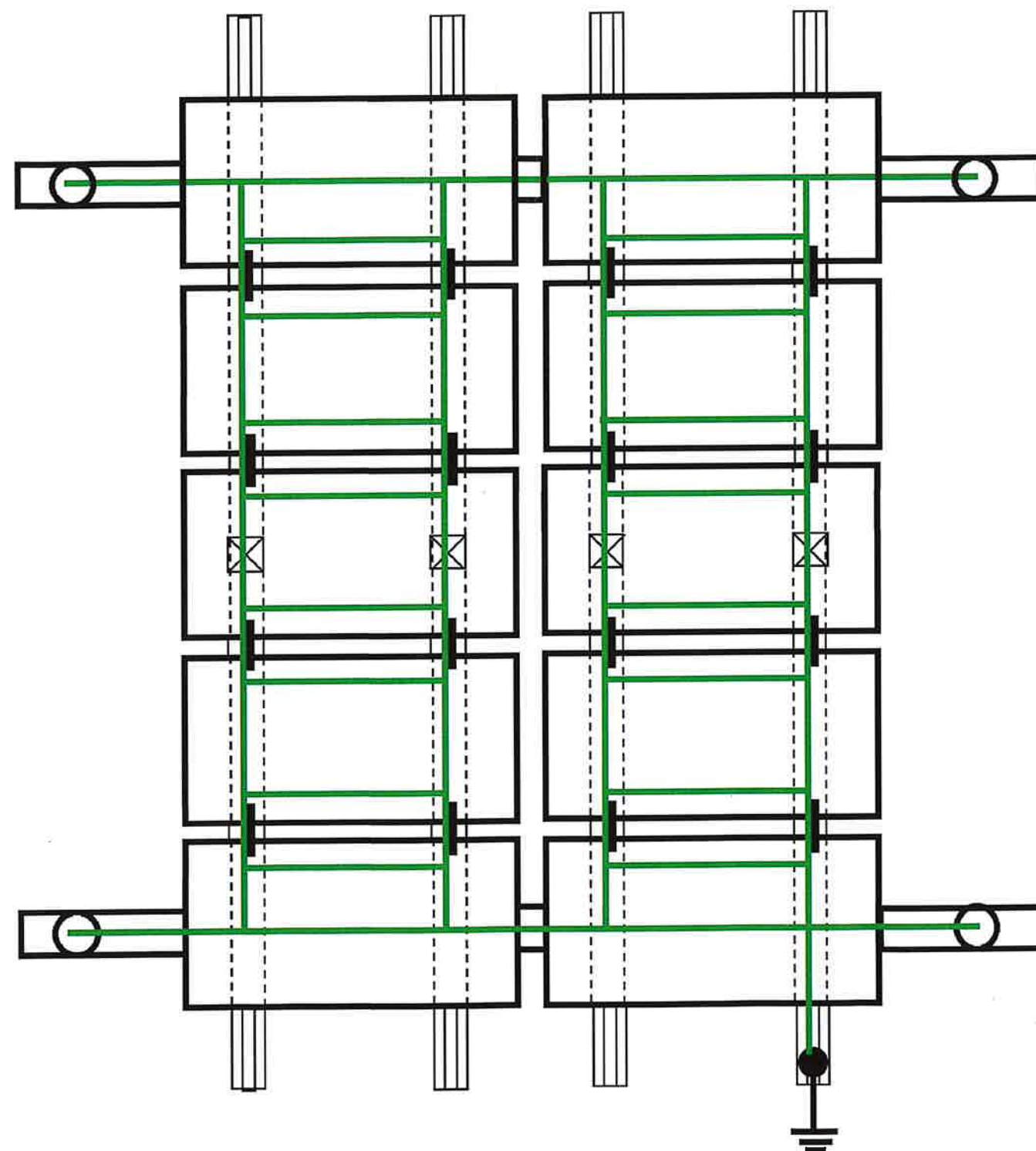
PV-17



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VERNON HILLS, IL 60061  
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#### REVISIONS

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REVISION	10/21/2024	A
REVISION	10/25/2024	B
REVISION	11/08/2024	C
REVISION	11/12/2024	D



Pipe Connection



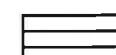
Pipe



Mid Clamp



Fault Current Path



Rail



Solar Panel



Rail Splice



Ground Lug

Note: All SunTurf metal structural components (Horizontal and Vertical Pipe, Pipe Splices, Post Caps, Pipe Clamps, Braces, Rail and Rail Splices) are electrically bonded together by design during the assembly of the racking.

#### PROJECT NAME & ADDRESS

TOM BENSON  
RESIDENCE  
43233 N CRAWFORD RD,  
ANTIOCH, IL 60002

DRAWN BY

ESR

SHEET NAME

ATTACHMENT  
DATASHEET

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-18



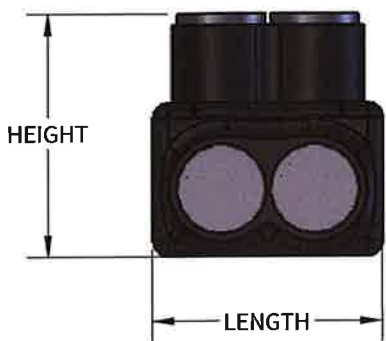
**FEATURES:**

1. CONNECTOR MANUFACTURED FROM 6061-T6 ALUMINUM ALLOY.
2. UL LISTED PER UL486A/B SPECIFICATIONS FOR 600V.
3. DUAL RATED FOR 90 °C COPPER AND/OR ALUMINUM CONDUCTOR.
4. COLD TEMPERATURE RATED TO -45 °C.
5. HIGH DIELECTRIC STRENGTH INSULATION IS ABRASION, CHEMICAL AND UV RESISTANT.

**IT SERIES**

**POLARIS®**

PROGRAM:	SOLIDWORKS
REVISED:	4/17/2024
SALES REV:	A
SIZE:	B (11x17)



PART #	FIG. #	WIRE RANGE	HEX SIZE	H	L	W
IT-4	1	4 - 14 AWG	5/32	1.38	1.12	1.37
IT-2	1	2 - 14 AWG	5/32	1.38	1.20	1.37
IT-1/0	1	1/0 - 14 AWG	3/16	1.69	1.62	1.83
IT-2/0	1	2/0 - 14 AWG	3/16	1.69	1.72	1.83
IT-3/0	1	3/0 - 6 AWG	1/4	1.79	1.84	1.90
IT-250	1	250 MCM - 6 AWG	5/16	2.18	2.12	2.28
IT-350	1	350 MCM - 10 AWG	5/16	2.61	2.47	2.41
IT-500	1	500 MCM - 4 AWG	5/16	2.91	2.81	2.83
IT-600	1	600 MCM - 6 AWG	5/16	3.03	3.24	2.96
IT-750*	1	750 MCM - 1/0 AWG	3/8	3.42	3.48	3.41
ITH-750	2	750 MCM - 1/0 AWG	5/16	3.42	3.48	4.46

\*IT-750 - UL LISTED FOR 75 °C

FIGURE 1  
IT - DUAL ENTRY



FIGURE 2  
ITH - DOUBLE SET SCREW



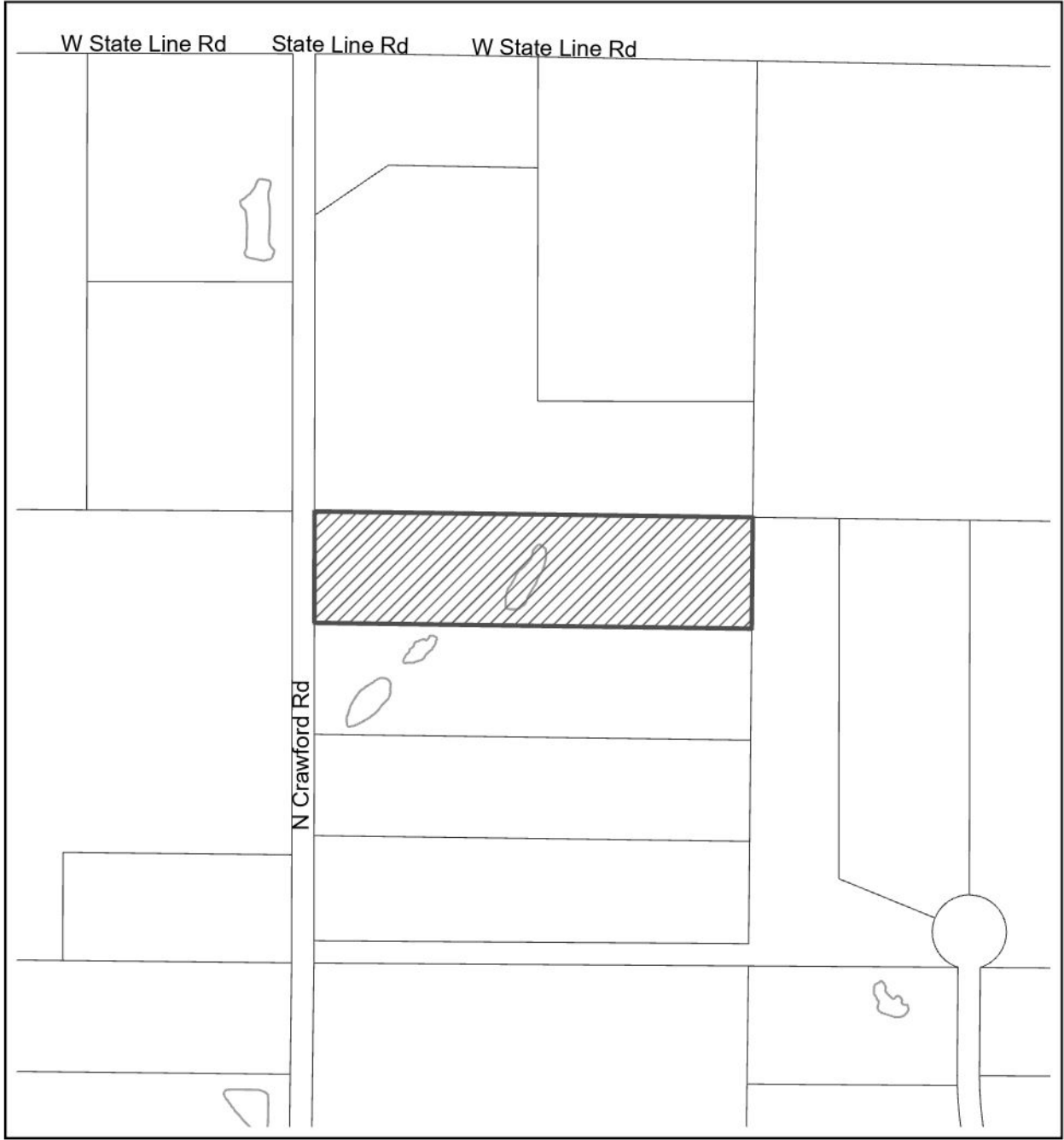
**S**



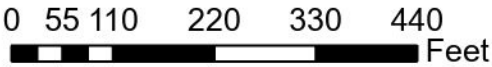




 Incorporated Lake County       Subject Parcel



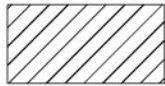
Zoning Board of Appeals  
Case #CUP-001074-2025



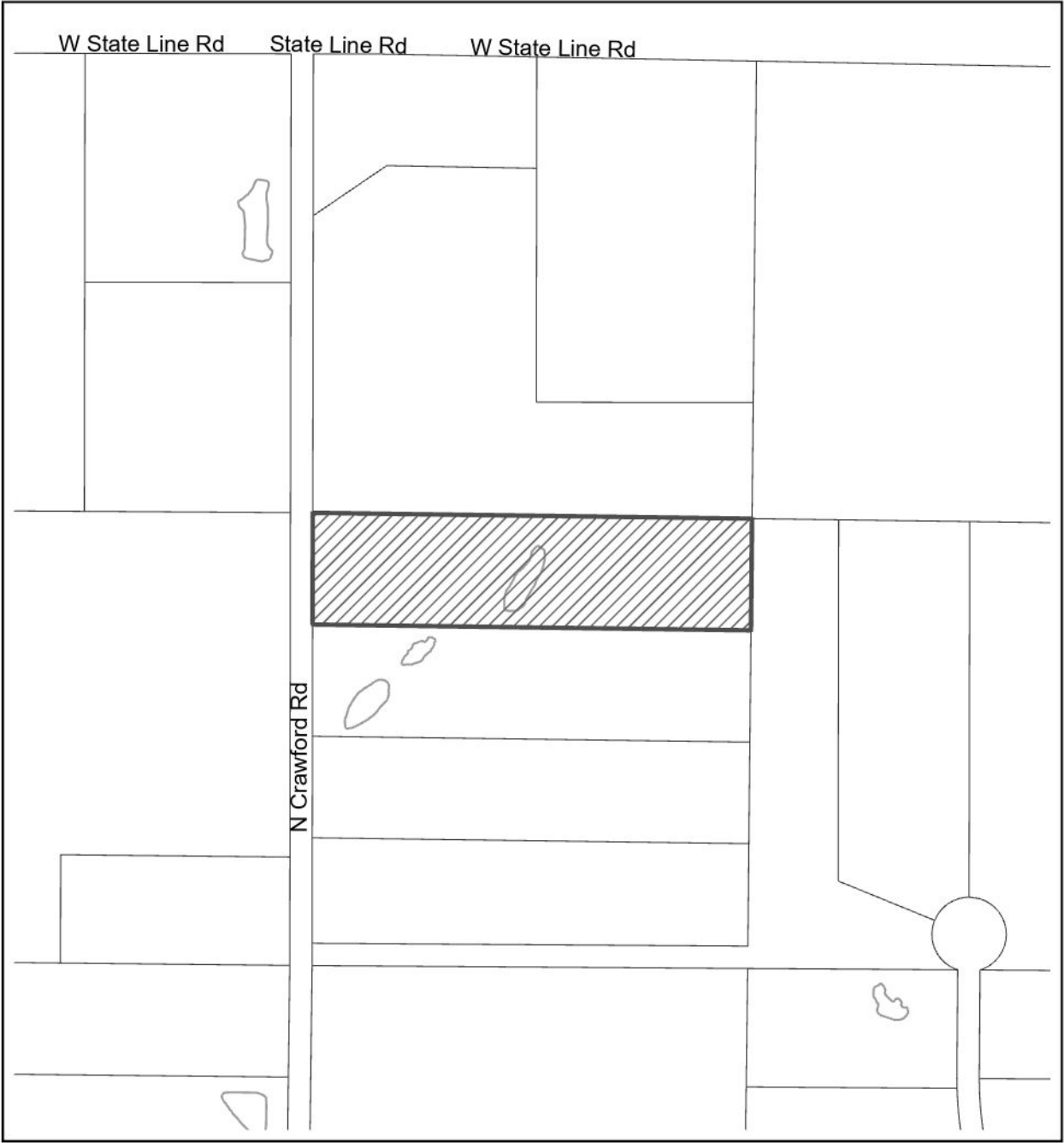




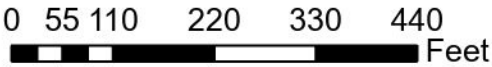
Incorporated Lake County



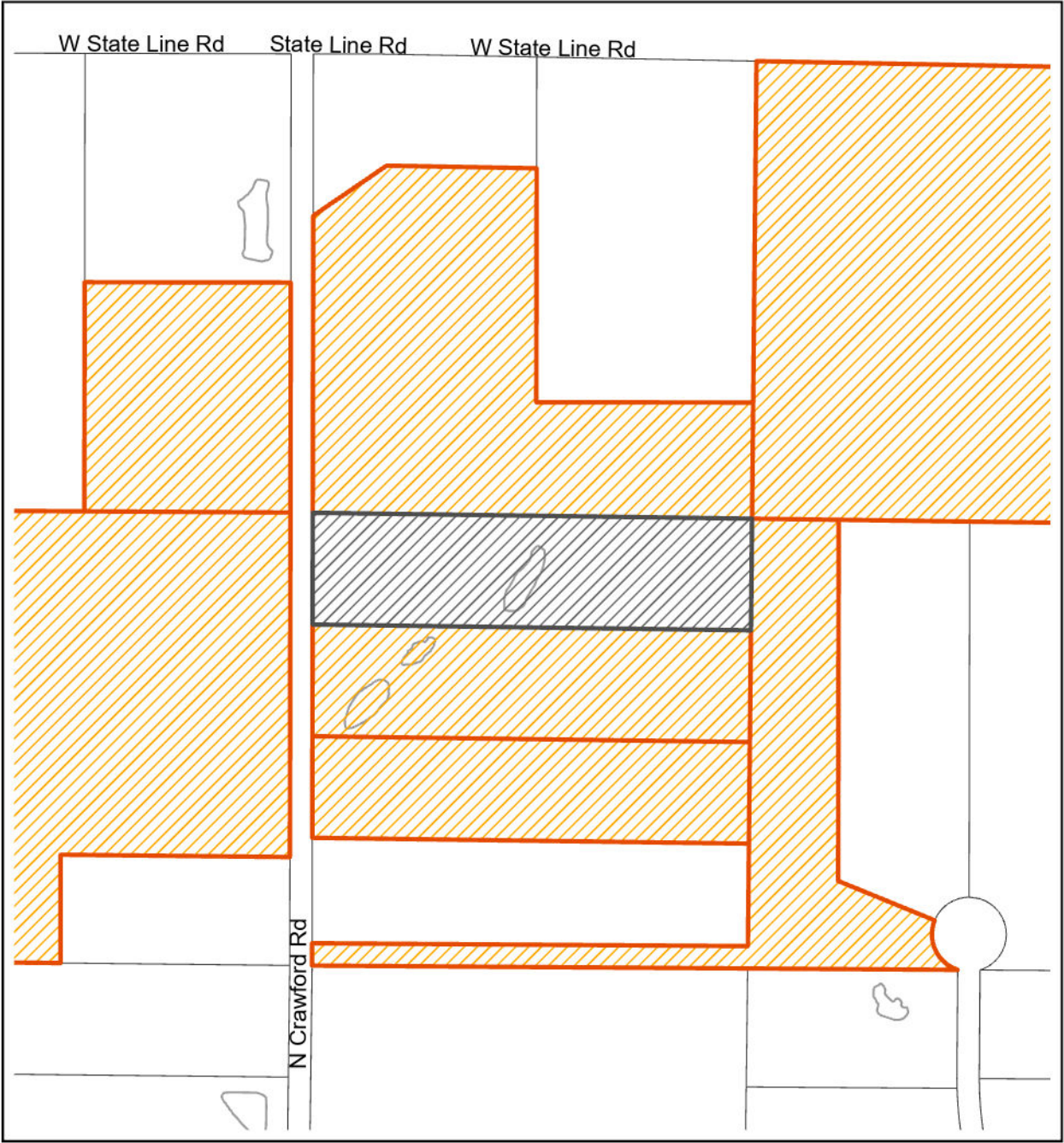
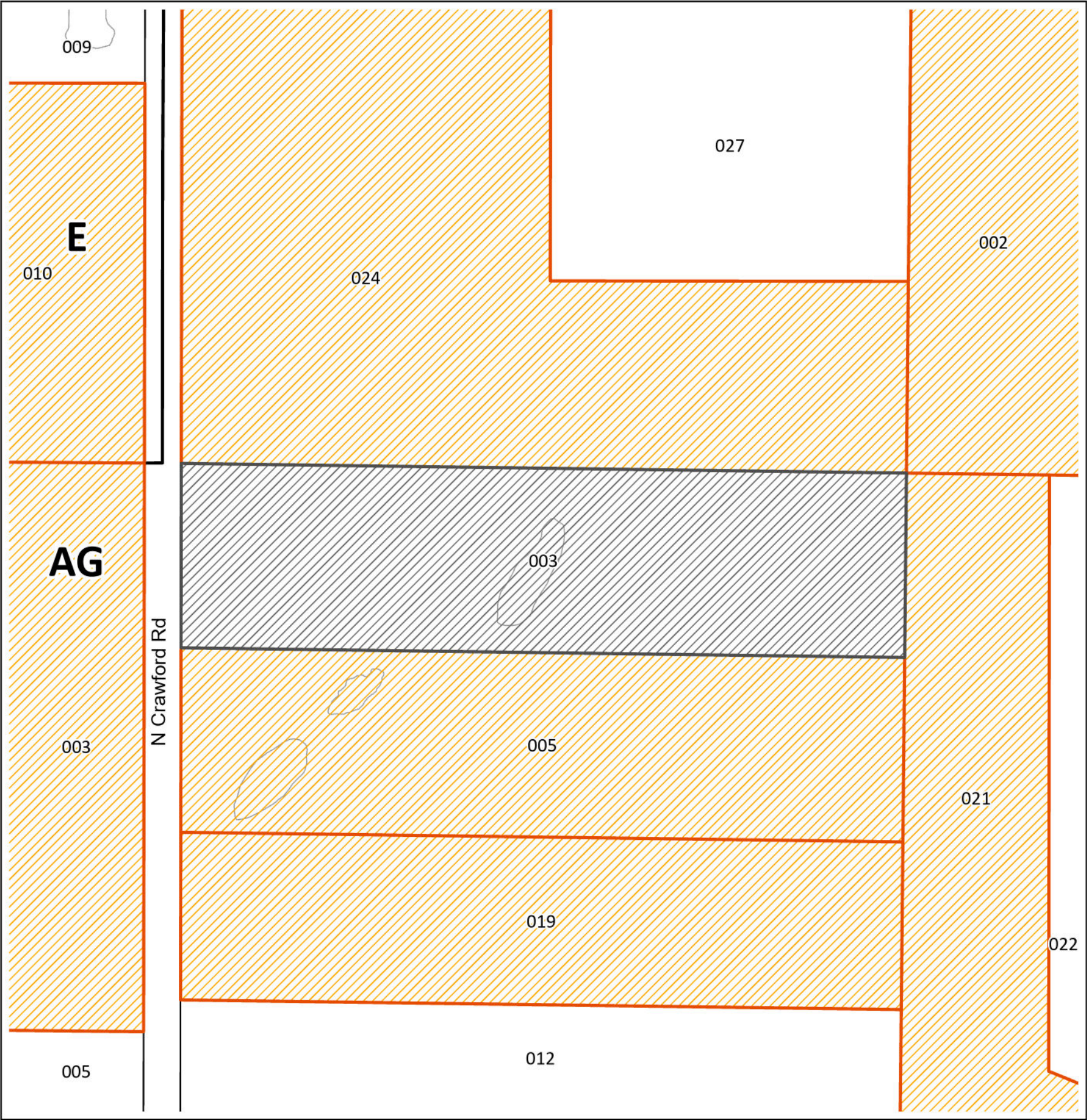
Subject Parcel



Zoning Board of Appeals  
Case #CUP-001074-2025







Zoning Board of Appeals  
Case #CUP-001074-2025

