



**Plan Commission
Meeting Agenda
Tuesday April 12, 2016
6:30 p.m. Village Hall Court Room
3930 N. Murray Ave Village of Shorewood, WI 53211**

1. Call to order.
2. Roll call.
3. Approval of February 23, 2016 meeting minutes.
4. Statement of Public Notice.
5. Public Hearing for conditional use for 4052 N. Farwell Ave.
6. Consideration of conditional use application for roof mounted solar system at residential property 4052 N. Farwell Ave, property owner Kevin Tissot.
7. Schedule next meeting.
8. Future agenda items.
9. Adjournment.

Dated at Shorewood, Wisconsin, this 7th day of April, 2016

Village of Shorewood

Tanya O'Malley, Village Clerk WCMC

**PLEASE BE ADVISED THAT A REPRESENTATIVE OF THE APPLICANT FOR THE
AGENDA ITEM MUST BE PRESENT AT THIS MEETING.**

Should you have any questions or comments regarding any item on this agenda, please contact Ericka Lang, Planning Director, Planning & Development Department, at (414) 847-2640.

Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals.

It is possible that members of and possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above stated meeting to gather information; no action will be taken by any governmental body at the above stated meeting other than the governmental body specifically referred to above in this notice.



**Plan Commission
Meeting Minutes
February 23, 2016**

3930 N. Murray Ave Village of Shorewood, WI 53211

1. Call to order.

The meeting was called to order at 6:35 p.m.

2. Roll call.

Chair Guy Johnson	present
Tim Hansmann	not present
Susan Buchanan	not present
Leah Blankenship	present
Nate Piotrowski	not present
Barbara Kiely Miller	present
Michael Maher	present
Chris Gallagher	present

3. Approval of January 26, 2016 meeting minutes.

Mr. Maher moved to approve the minutes, seconded by Ms. Kiely Miller. Both commissioners noted several changes to the minutes. Vote to approve 6-0.

4. Statement of Public Notice.

Staff publicized a class 1 notice, published greater than 10 days prior to the meeting. The meeting agenda was also posted in four public locations in the village, per code.

5. Consideration of conditional use application for massage services within commercial property 4601 N. Oakland Ave. Applicant Mei Chen.

Ms. Mei Chen was teleconferenced for the meeting. Planning Director Ericka Lang stated that a Conditional Use application was received by Mei Chen for business Yi Spa at 4601 N. Oakland Avenue, to offer massage services and other related services in three suites located on the second floor of the two-story building. Shorewood's zoning code does not list massage establishments as permitted, prohibited or by condition, and therefore are considered by conditional use. Previous massage establishments in the Village have also required conditional use approval.

Massage services are regulated within Shorewood's code chapter 362 requiring a local license where the Police Chief and Health Director verify key information.

Mr. Maher moved to approve the conditional use application for Mai Chen for operating a massage therapy business Yi Spa at 4601 N. Oakland Ave and shall make the finds per zoning section 535-25C sub 1-7. Seconded by Mr. Gallagher. Vote 6-0.

6. Schedule next meeting.

No applications have been received for a subsequent meeting.

Plan Commission Meeting Minutes – February 23, 2016

7. Future agenda items.

Ms. Lang noted the need to bring back the proposed amendments for front porches and vision setbacks.

8. Adjournment.

Mr. Maher moved to adjourn the meeting at 6:48 p.m., seconded by Ms. Kiely Miller. Vote 6-0.

Recorded by,

A handwritten signature in cursive script that reads "Ericka Lang". The signature is written in black ink and is positioned below the text "Recorded by,".

Ericka Lang

MEMORANDUM

April 7, 2016

To: Plan Commission
Cc: Village Manager Chris Swartz

From: Ericka Lang, Planning Director

RE: Conditional Use for Solar Panel 4052 Farwell



Agenda Item #: Consideration of Solar Panel CUP

On March 16, 2016 the village received a conditional use application for installation of solar panels at residential property 4052 N. Farwell Ave. The owner is Kevin Tissot and the applicant is Arch Electric Inc. The panels will be installed on the house.

Panel Description

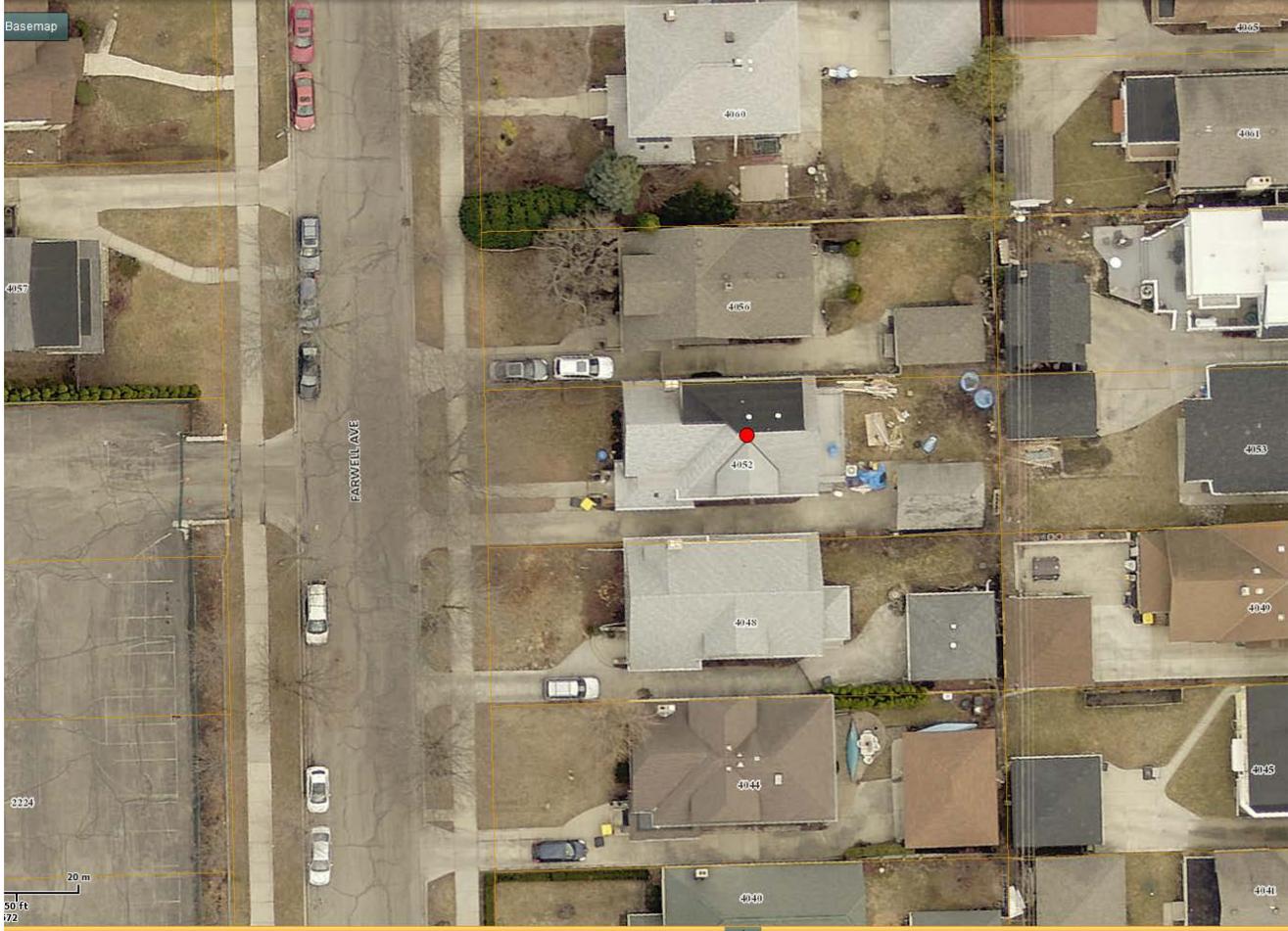
There are four solar modules mounted with an area of 12.8 ft x 8.8 ft total. They would be installed in a square pattern. See attached panel materials.

Code

Per 535-30D, installation and use of solar energy systems are a conditional use in all districts. The full code is attached. It also says that your commission shall review the proposed system and may only restrict if one of the following conditions is satisfied:

- [1] Serves to preserve or protect the public health or safety.
- [2] Does not significantly increase the cost of the system or significantly decrease its efficiency.
- [3] Allows for an alternative system of comparable cost and efficiency.

The review and approval criteria in 535-30D apply to solar and wind energy systems.





PD14

THE Utility MODULE

72 CELL
MULTICRYSTALLINE MODULE

300-315W
POWER OUTPUT RANGE

16.2%
MAXIMUM EFFICIENCY

0~+3%
POWER OUTPUT GUARANTEE

As a leading global manufacturer of next generation photovoltaic products, we believe close cooperation with our partners is critical to success. With local presence around the globe, Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners as the backbone of our shared success in driving Smart Energy Together.

Trina Solar Limited
www.trinasolar.com



Ideal for large scale installations

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



One of the industry's most trusted modules

- Field proven performance



Highly reliable due to stringent quality control

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

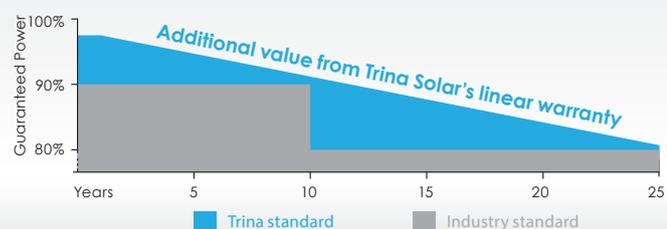


Certified to withstand challenging environmental conditions

- 2400 Pa wind load
- 5400 Pa snow load
- 25 mm hail stones at 82 km/h

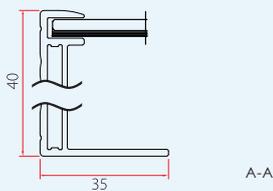
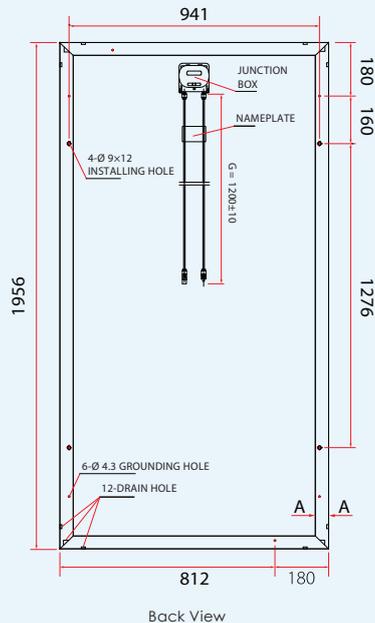
LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty • 25 Year Linear Power Warranty

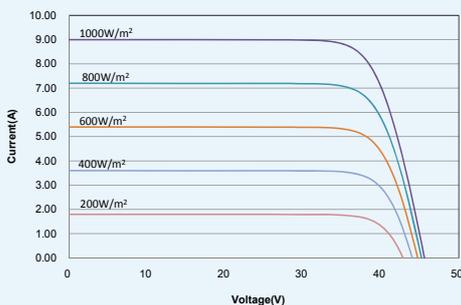


THE Utility MODULE TSM-PD14

DIMENSIONS OF PV MODULE unit:mm



I-V CURVES OF PV MODULE(315W)



CERTIFICATION



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)	300	305	310	315
Power Output Tolerance- P_{MAX} (%)	0 ~ +3			
Maximum Power Voltage- V_{MPP} (V)	36.2	36.6	37.0	37.1
Maximum Power Current- I_{MPP} (A)	8.28	8.33	8.38	8.51
Open Circuit Voltage- V_{OC} (V)	45.4	45.5	45.5	45.6
Short Circuit Current- I_{SC} (A)	8.77	8.81	8.85	9.00
Module Efficiency η_m (%)	15.5	15.7	16.0	16.2

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.
Typical efficiency reduction of 4.5% at 200 W/m² according to EN 60904-1.

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	223	227	231	235
Maximum Power Voltage- V_{MPP} (V)	33.5	33.8	34.1	34.1
Maximum Power Current- I_{MPP} (A)	6.66	6.72	6.77	6.88
Open Circuit Voltage- V_{OC} (V)	42.1	42.2	42.2	42.3
Short Circuit Current- I_{SC} (A)	7.08	7.11	7.15	7.27

NOCT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar cells	Multicrystalline 156 × 156 mm (6 inches)
Cell orientation	72 cells (6 × 12)
Module dimensions	1956 × 992 × 40 mm (77 × 39.05 × 1.57 inches)
Weight	27.6 kg (60.8lb)
Glass	4.0 mm, High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Silver Anodized Aluminium Alloy
J-Box	IP 65 or IP 67 rated
Cables	Photovoltaic Technology cable 4.0mm ² (0.006 inches ²), 1200mm (47.2 inches)
Connector	MC4 or MC4 Compatible

TEMPERATURE RATINGS

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

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000VDC (IEC) 1000VDC (UL)
Max Series Fuse Rating	15A

WARRANTY

10 year Product Workmanship Warranty

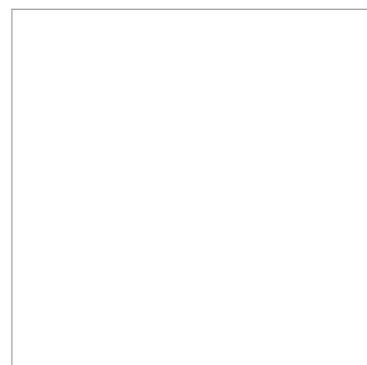
25 year Linear Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 26 pieces

Modules per 40' container: 572 pieces



TSM_EN_Mar_2015_A

PROJECT TITLE: KEVIN TISSOT
PROJECT ID: FF76E4A2

Name:	Kevin Tissot	Designed by None
Address:	4052 Farwell Ave Milwaukee Wi 53211	SOLARMOUNT
City, State:	Unknown,	4 - 310 Watt Panels
Module:	Trina Solar TSM-PD14-310 1.57" thick	84 Sq Ft.
	310 Watts	1.2 kWs

BILL OF MATERIALS

PARTS AND ACCESSORIES

Legend: ● Base System ● Part Accessory

Part Number	Part Type	Description	Quantity	Suggested Quantity	Unit Price (USD)	Total List Price (USD)
320168M	Rail	SM RAIL 168" MILL	4	4	70.75	283.00
302023C	End Clamp	SM ENDCLAMP D CLR AL	8	8	3.55	28.40
302029C	Mid Clamp	SM BND MIDCLAMP DK SS	4	4	4.15	16.60
304001C	Roof Attachment	L-FOOT SERRATED W/ T-BOLT, CLR	12	12	4.35	52.20
008009P	Grounding Lug	ILSCO LAY IN LUG (GBL4DBT)	2	2	8.40	16.80

BASE SYSTEM \$328.00 \$0.26 PER WATT	ACCESSORIES \$69.00 \$0.06 PER WATT	TOTAL PRICE \$397.00 \$0.32 PER WATT
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This design is to be evaluated to the product appropriate Unirac Code Compliant Installation Manual which references International Building Code 2003, 2006, 2009, 2012 and ASCE 7-02, ASCE 7-05, ASCE 7-10 and California Building Code 2010. The installation of products related to this design is subject to requirements in the above mentioned installation manual.

DETAILED PARTS DESCRIPTIONS

	<p>320168M SM RAIL 168" MILL</p> <p>Structural aluminum extrusion containing slots that accept module and roof attachment hardware, electrical bonding accessories, and splice bars.</p>	<p>Rail 4</p>
	<p>302023C SM ENDCLAMP D CLR AL</p> <p>Mounts 38-40 mm (1.50-1.57 in) thick PV modules to rail by clamping module frame from above. Includes T bolt and nut. If mounting on short side of module frame, confirm this is acceptable with PV module manufacturer.</p>	<p>End Clamp 8</p>
	<p>302029C SM BND MIDCLAMP DK SS</p> <p>Located between adjacent PV modules, mounts 38-41 mm (1.5-1.61 in) thick modules to rail by clamping module frame from above. Includes T bolt and nut. If mounting on short side of module frame, confirm this is acceptable with PV</p>	<p>Mid Clamp 4</p>
	<p>304001C L-FOOT SERRATED W/ T-BOLT, CLR</p> <p>Angle bracket connecting rail to roof or roof mounting accessory with serration on both mounting surfaces. Lag bolts sold separately.</p>	<p>Roof Attachment 12</p>
	<p>008009P ILSCO LAY IN LUG (GBL4DBT)</p> <p>For electrical bonding of PV modules and rails. Accepts 4-14 AWG copper wires. Tin plated copper body, 1/4" stainless steel fasteners.</p>	<p>Grounding Lug 2</p>

PROJECT TITLE: KEVIN TISSOT
PROJECT ID: FF76E4A2

Name:	Kevin Tissot	Designed by None
Address:	4052 Farwell Ave Milwaukee Wi 53211	SOLARMOUNT
City, State:	Unknown,	4 - 310 Watt Panels
Module:	Trina Solar TSM-PD14-310 1.57" thick	84 Sq Ft.
	310 Watts	1.2 kWs

ENGINEERING REPORT

Plan review

Loads Used for Design

- Building Code:	ASCE 7-05
- Wind Speed:	85 mph
- Ground Snow Load:	0 psf
- Seismic (Ss):	1.20
- Wind Exposure:	B

Loads Determined by Zip

- City, State:	Unknown
- Wind Speed:	0 mph
- Ground Snow Load:	0 psf

Inspection

Product:	SOLARMOUNT
Module Manufacturer:	Trina Solar
Model:	TSM-PD14-310 1.57" thick
Module Watts:	310 watts
Module Length:	77.01 "
Module Width:	39.06 "
Module Thickness:	1.57 "
Expansion Joints:	Every 40'
Rails Direction:	EW
Building Height:	30 ft.
Roof Type:	Shingle
Total Weight:	242.80 lbs

WORKSPACE 1

Roof Point Load Up:	-112 lbs
Roof Point Load Down:	177 lbs

Total Number of Modules:	4
Total KW:	1.2 KW
Rows/ Columns:	2 / 2 (no gaps)
NS Dimension:	~12.8 ft
EW Dimension:	~6.8 ft

Maximum Rail Span (Zone 1):	105"
Selected Rail Span:	48"

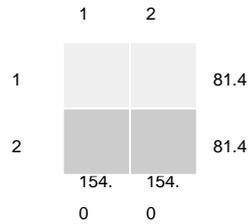
Maximum Rail Cantilever:	16.00 "
Roof Pitch:	6:12

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INSTALLATION AND DESIGN PLAN

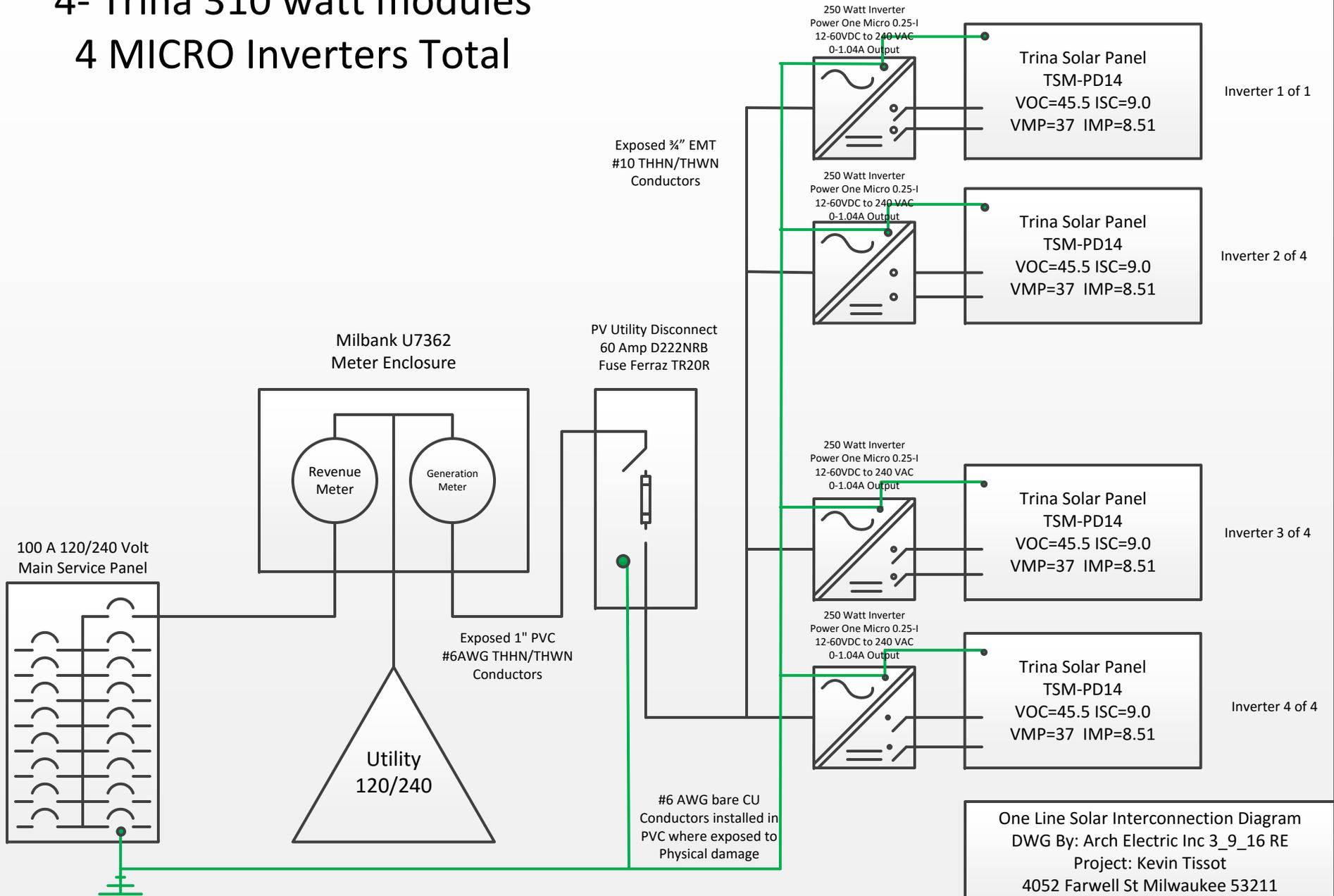
LAYOUT WORKSPACE 1



Row	Modules	Zone	Rail Type	Splices	Roof Attachments
1	2	Zone 1	SM RAIL 168" MILL 320168M \$70 (2)	0	6
2	2	Zone 2	SM RAIL 168" MILL 320168M \$70 (2)	0	6
Maximum Rail Span (Zone 1*):					105.00"
Selected Rail Span:					48.00"
Maximum Rail Cantilever:					16.00"
Module Orientation:					Portrait
Rail Direction:					EW

*Zone 2 and 3 Rail Spans must be independently verified

1.24 kW Roof Mounted 4- Trina 310 watt modules 4 MICRO Inverters Total



535-30 ARCHITECTURAL PROJECTIONS, SPECIAL STRUCTURES, MOBILE WIRELESS TOWERS AND SOLAR AND WIND ENERGY SYSTEMS

D. Conditional use permits for solar and wind energy systems.

[\(1\)](#) Installation and use of a "wind energy system" or a "solar energy system" shall be a conditional use in all districts. The Village Plan Commission may authorize the Planning and Development Department to issue a conditional use permit for solar or wind energy systems after review and a public hearing. Any restriction placed on a solar or wind energy system by the Plan Commission is subject to the limitations found in this section. The review and approval criteria set forth in this subsection shall apply to solar and wind energy systems.

[\(2\)](#) Definitions. As used in this subsection, the following terms shall have the meanings indicated:

A SOLAR ENERGY SYSTEM. Equipment which directly converts and then transfers or stores solar energy into usable forms of thermal or electrical energy.

A WIND ENERGY SYSTEM. Equipment and associated facilities that convert and then store or transfer energy from the wind into usable forms of energy.

[\(3\)](#) Authority to restrict systems limited.

[\(a\)](#) The Village Plan Commission shall review any proposed wind energy system and may approve the system if the applicant meets the owner requirements for a wind energy system as set forth in §§ PSC 128.10 through 128.19, Wis. Adm. Code, (current through Administrative Register, December 2014, No. 708) and as hereinafter amended, which are hereby incorporated by reference and made a part hereof as if fully set forth herein.

[\(b\)](#) The Village Plan Commission shall review any proposed solar or wind energy system and may only restrict the system if the restriction satisfies one of the following conditions:

[\[1\]](#) Serves to preserve or protect the public health or safety.

[\[2\]](#) Does not significantly increase the cost of the system or significantly decrease its efficiency.

[\[3\]](#) Allows for an alternative system of comparable cost and efficiency.