AGENDA

1. CALL TO ORDER

2. APPROVAL OF AUGUST 28, 2019 MINUTES

3. REGULAR BUSINESS
   Deliberations will be held at the end of each case after public comment has been closed. No public comment is allowed during deliberations.

   CASE No HPC 19-09
   (Continued from 8-28-19 hearing)
   Public hearing on the request of Jonathan Thomas and Jennifer Repogle, to obtain a Certificate of Appropriateness to allow for the installation of roof mounted solar panels for the property located at 1602 W. Moss Avenue (Parcel Identification No. 18-08-176-003), Peoria, Illinois (Council District 2).

   CASE No HPC 19-12
   Public hearing on the request of Thien Tam Buddhist Temple NFP, to obtain a Certificate of Appropriateness to allow for a freestanding sign, for the property located at 839 W. Moss Avenue (Parcel Identification No. 18-05-482-018), Peoria, IL (Council District 2).

   CASE No HPC 19-13
   Public Hearing on the request of John Baskin to obtain a Certificate of Appropriateness in a Class R-7 (Multifamily Residential) District to replace portions of the front porch for the property located at 807 NE Perry Avenue (Parcel Identification No. 18-04-434-017), Peoria, IL (Council District 1)

4. UNFINISHED BUSINESS
   Discussion of Chapter 16 Historic Preservation Code – Designation Procedure

5. CITIZENS’ OPPORTUNITY TO ADDRESS THE COMMISSION

6. ADJOURNMENT

Inquiries: Community Development Department, (309) 494-8600 or kweick@peoriagov.org
If you plan on speaking, please complete a **Blue Speaker Form**

For each case the following sequence will apply:

1. Chairperson proceeds with swearing in procedures
2. Chairperson announces the case
3. Staff enters case into the record
   a. Staff presents the case
   b. Staff answers questions from the Commission
4. Petitioner presents case and answers questions from the Commission
5. Chairperson opens the meeting to the public
6. Public comments – Chairperson may ask for response/input from staff and petitioner
7. Petitioner presents closing statements
8. Public testimony is closed (No further public comment)
9. Commission deliberates and may consult staff
10. Commission prepares findings, if applicable
11. Commission votes

All comments and questions must be directed to the Commission
The regularly scheduled meeting for the Historic Preservation Commission Meeting was held on Wednesday, August 28, 2019, at 8:30 A.M., City Hall, 419 Fulton Street, Room 400 with proper notice having been posted.

ROLL CALL

The following Historic Preservation Commission Commissioners were present: Marsha Burdette, Marisa Farrell, Jan Krouse, Michael Maloof, Lesley Matuszak, Geoff Smith, and David Stotz – 7. Absent: Geoff Smith - 1

Staff Present: Kerilyn Weick, Sara Maillacheruvu, Megan Nguyen.

ELECTION OF OFFICERS

Vice-chair Lesley Matuszak opened the agenda item for election of officers.

Staff member Kerilyn Weick explained the order and procedures for the election of chairperson and vice-chairperson.

Vice-chair Matuszak nominated Michael Maloof for chair of the Historic Preservation Commission. Vice-chair Matuszak called for other nominations, seeing none, a voice vote was taken.

The election of Michael Maloof for chairperson was approved viva voce vote 6 to 0.

Commissioner Krouse nominated Lesley Matuszak for Vice-chair of the Historic Preservation Commission. Vice-chair Matuszak called for other nominations, seeing none, a voice vote was taken.

The election of Lesley Matuszak for Vice-chairperson was approved viva voce vote 6 to 0.

Michael Maloof assumed position as the chairman for the remainder of the hearing.

MINUTES

Commissioner Stotz moved to approve the minutes of the regularly scheduled meeting held on July 24, 2019; seconded by Commissioner Matuszak.

The motion was approved viva voce vote 6 to 0.

SWEARING IN OF SPEAKERS

Staff member, Megan Nguyen, swore in the public.

REGULAR BUSINESS

CASE NO. HPC 19-09

Public Hearing on the request of Jonathan Thomas and Jennifer Replogle, to obtain a Certificate of Appropriateness to allow for the installation of roof mounted solar panels for the property located at 1602 W. Moss Avenue (Parcel Identification No. 18-08-176-003), Peoria, Illinois (Council District 2).

Senior Urban Planner, Kerilyn Weick, Community Development Department, read Case No. HPC 19-09 into the record and presented the request as outlined in the memo. Ms. Weick explained the case was continued from the July hearing in order to hear more information on the location and installation method of the proposed alteration.

Commissioner Geoff Smith arrived at approximately 8:55 AM.

Chairman Maloof opened the Public Hearing.

Applicant Jonathan Thomas with contractor Brian Tresenriter of Porter Electric summarized the request to install solar equipment on the south facing side of the roof and explained the installation method. In response to questions by the commission, respondent that the equipment would be black and follow the slope of the roof which is 4:12 and 10:12. The project is expected to meet the electric energy demand of the household and have a 25 year life.

Mr. Thomas said he received verbal approval of the request from the only neighbor that would see the equipment.

With no further interest from the public, Chairman Maloof closed the hearing to public testimony.
Commissioners recognized this request as the first request for solar panels in the Moss-High Historic District and need to make sure the motion keeps the historic integrity of the district. The commission briefly discussed a request for equipment in the front yard would not meet the standards for a certificate of appropriateness.

Ms. Weick affirmed Chairman Maloof’s recollection that policy has been to allow accessory equipment on roofs and sides of dwellings so long as the equipment is not visible from the front of the dwelling, and this policy can include solar equipment.

Commissioner Matuszak expressed need for more detail on the aesthetics of the request. Request was made for pictures from different angles of the subject dwelling, pictures from different angles of a similar project, more information on the height of the equipment relative to the slope of the roof.

Commissioner Stotz made a motion to reopen the public hearing; seconded by Commissioner Krouse

The motion was approved viva voce vote 7 to 0.

Mr. Tresenriter shared a photo of an existing project in Morton, IL. The photo was forwarded to staff for the record. Mr. Tresenriter explained the equipment is about 3 inches above the roof and 3 feet from the edge of the roof line. Shingles remain under the roof and flashing is added at the attach points. The equipment needs to be installed by the end of the year 2019 in order to qualify for state incentives provided by the Future Energy Jobs Act.

With no further interest from the public, Chairman Maloof closed the hearing to public testimony.

Commissioner Matuszak expressed need to see pictures of proposed equipment on a comparable dwelling and to see a solar panel at the next hearing.

Commissioner Farrell considered the request is a good standard to approve the proposed solar equipment in the district due to the location, slope, and color as presented.

**Motion:**
Commissioner Smith made a motion to defer the case to the next regular scheduled hearing in order to receive more information on the aesthetics; seconded by Commissioner Matuszak.

The motion was APPROVED by roll call vote 4-3.


**UNFINISHED BUSINESS**

**Discussion of Chapter 16 Historic Preservation Code – Designation Procedure**
Chairman Maloof opened the discussion topic.

In response to the Chairman, Ms. Weick summarized the discussion is regarding the current ordinance which requires owners consent to make application for a landmark designation.

The commission discussed seeking expert opinion from state and local historic preservation entities on this matter.

Chairman Maloof opened the discussion to the public.

Tim Hartneck shared the Historic Preservation ordinance was changed after a neighborhood requested landmark designation for the Trinity Lutheran Church.

With no further interest from the public, Chairman Maloof requested the topic be continued to the next hearing.

**Discussion on possible creation of Pictorial Architectural Index**
Chairman Maloof opened the discussion topic.

At the request of Commissioner Smith, Chairperson Maloof opened the discussion to the public.

Margarette Cousins, expressed support for the index as a means to help identify and support landmark designations. She has been a long time advocate for historic preservation with success in landmarking the Lincoln Library.

Tim Hartneck expressed a resource of photographs is the Peoria County property assessment files.
The commission discussed other resources of photographs and the scope of the subject index. Questions were raised about the role the commission should have on this versus other organizations and neighborhood associations.

Chairman Maloof gathered from the discussion that the commission would not be pursuing the creation of a pictorial index of properties in the local historic district at this time. Chairman Maloof recognized other groups, some with existing resources, may be best to create such index. A work plan for an index would not be pursued at this time.

**CITIZENS’ OPPORTUNITY TO ADDRESS THE COMMISSION**

There were no citizens who wished to address the Historic Preservation Commission.

**ADJOURNMENT**

Commissioner Krouse moved to adjourn the Historic Preservation Commission meeting; seconded by Commissioner Stotz.

The motion was approved viva voce vote 7 to 0.

The Historic Preservation Commission Meeting adjourned at approximately 10:30 a.m.

Kerilyn Weick, Senior Urban Planner
TO: Historic Preservation Commission

FROM: Kerilyn Weick, Urban Planner

DATE: September 25, 2019

RE: HPC CASE NO. 19-09: Public hearing on the request of Jonathan Thomas and Jennifer Replogle, to obtain a Certificate of Appropriateness to allow for the installation of roof mounted solar panels for the property located at 1602 W. Moss Avenue (Parcel Identification No. 18-08-176-003), Peoria, Illinois (Council District 2). Case was continued from the August 28, 2019 hearing.

NOTIFICATION:
Mailed notification was provided to property owners with property in the local historic district and within 250 radial feet of the subject site. Notice was sent no less than 15 days prior to the original hearing in July. Re-noticing for a continued case is not required.

REQUEST SUMMARY:
The applicant requests a Certificate of Appropriateness to install roof-mounted solar panels for the property located at 1602 W. Moss Avenue. The proposed solar panels would be mounted on the south facing roof which is not visible from Moss Avenue. The property is in the Moss-High local historic district.

This request was continued from the July Historic Preservation Commission hearing so that the applicant could respond to questions by the commission regarding the location and installation of the proposed equipment. At the August hearing, the commission requested photographs of similar projects and of the subject structure, with emphasis on how high the equipment would sit on the roof. This request was made in order to better visualize the request. Please refer to the attached application for more detailed information on the proposal.

DISCUSSION:
The Commission should consider the criteria in Historic Preservation Ordinance Section 16-64, when determining if the proposed work is compatible and appropriate.

OPTIONS:
- Approve the application as requested.
- Modify and grant the application.
- Deny the application.

If denied, the petitioner will not be able to submit an application for the same improvements until it is modified to fit the Commission’s requests, or a period of 1 year has elapsed.
Disclaimer: Data is provided 'as is' without warranty or any representation of accuracy, timeliness or completeness. The burden for determining fitness for, or the appropriateness for use, rests solely on the requester. The requester acknowledges and accepts the limitations of the Data, including the fact that the Data is in a constant state of maintenance. This website is NOT intended to be used for legal litigation or boundary disputes and is informational only. -Peoria County GIS Division
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Certificate of Appropriateness Application
Historic Preservation Commission

Property Information: (The property the work will be performed on)
Address: 1602 W Moss Avenue Zip Code: 61606
Tax ID Number: 1K-08-176-003 Architectural Style: Modified Dutch Colonial

Applicant: (The person/organization applying.)
Name: Jonathan Thomas and Jennifer Replique
Company/Neighborhood Association: Moss-Bradley
Address: 1602 W Moss Avenue
City: Peoria State: IL ZIP: 61606
Daytime Phone: (309) 379-8690 Email: jonathan.syan.thomas@gmail.com
Applicant Signature: _______________ Date: 7-1-19

Owner: (Skip this section if the applicant and owner information is the same)
Name: ____________________________
Company/Neighborhood Association: ____________________________
Address: ____________________________
City: ____________________________ State: ___________ ZIP: ___________
Daytime Phone: (__________) Email: ____________________________
Owner Signature: ____________________________ Date: ___________

Contractor Information: (If available, not required)
Name: Brian Tresarrier
Company/Neighborhood Association: Porter Electric
Address: 1504 N 8th Street
City: Pekin State: IL ZIP: 61554
Daytime Phone: (309) 360-1716 Email: Brian@porter-electric.com
Additional Narrative

For narrative of proposed work on the application:
We are requesting permission to install a 9.9kW (9900 watt) photovoltaic solar energy array. This system will have 28 330Watt solar panels. They will be all black except for the backing which is white for better efficiency. (photo included on spec sheet). Attached, underneath each panel, will be an Enphase Micro-Inverter, which eliminates the need to install a central string inverter near the meter. The racking, that holds the system to the roof, will be also be black, as well as the flashing used.

The array is attached using flashing and lag bolts that go directly to the roof joists and are engineered to withstand 110mph winds. The array weighs approximately 3-5lbs/ft2, or about the weight of a second layer of shingles. We will have both Electrical and Structural stamped engineering plans as required by the City of Peoria and are best practices.
Besides the panels, there will be a AC disconnect sign with a red placard that lets first responders know that there is a PV system on the roof and allows them to shut it down.
I have attached several photos of a system that we installed in Morton Illinois using the exact same racking, panels, etc. This clients name is Brian Scheffler. His number is 309-253-7609. His address, where the system shown in photos is located, is:
1228 Wheatfield, Morton, IL 61550. He is open to members of the board coming out to have a look for themselves so long as he and/or his wife, Hope, is notified before arrival.
They clearly show that all panels are attached at the same slope as the roof. We always attach at the same slope of the roof unless the roof is flat which is clearly not the case here. Attaching panels at a slope other than the roof slope is a costly, inefficient use of space and is rarely if ever done anymore.
As to the impact on the roof structure, we have to have stamped engineering showing that the roof and the system will withstand 90mph straight line winds. The weight of the system when installed is only 3-5lbs per ft2, approximately the same as a second layer of shingles. And speaking of the shingles, the panels provide shading to the roof, so the shingles will actually last longer as they are protected from the Sun . I have attached the complete City of Peoria Permit Package as well
This system will not be seen from anywhere but the clients back yard. There is a 3 foot clearance (setback) on both the east and west sides of the rear roof as well as a 3 foot setback from the ridge of the roof as required by fire code.
I will not be bringing a solar panel to the hearing. All panels are shipped directly to the job location. They also are 3’x5’ and weigh 70lbs. We believe that the photos provide an accurate and thorough representation of their appearance and, again, all board members are welcome to Contact Mr Scheffler and have a good look for themselves if any would choose to do so. I remember Chairperson Maloof stating that he would like to see the system in person. I would encourage all to do so as the installation is beautiful and was highlighted on our distributors newsletter.
I hope that we can find a resolution that everyone is satisfied with. Going solar is not only the right thing to do for the environment but do to huge Ameren Incentives and the 30% federal tax credit, a great investment.

Brian W Tresenriter
Porter Electric LLC Solar Division
309-360-1716
brian@porter-electric.com
www.porter-electric.com
**System Metrics**

- **Design**: Annual
- **Module DC Nameplate**: 9.52 kW
- **Inverter AC Nameplate**: 8.96 kW, Load Ratio: 1.06
- **Annual Production**: 13.23 MWh
- **Performance Ratio**: 83.2%
- **kWh/kWp**: 1,389.7
- **Weather Dataset**: TMY, PEORIA GREATER PEORIA AP, NSRDB (tmy3)
- **Simulator Version**: c2390771.8a-ace55c8c-2c3316ed7-511556038d

**Monthly Production**

- **Watts**: 0, 500, 1000, 1500, 2000
- **Timeline**: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

**Sources of System Loss**

- **AC System**: 0.8%
- **Inverters**: 2.4%
- **Clipping**: 1.0%
- **Reflection**: 3.1%
- **Soiling**: 2.0%
- **Temperature**: 7.8%
- **Irradiance**: 0.7%
- **Mismatch**: 0.1%
- **Wiring**: 0.0%
- **Shading**: 0.2%

**Condition Set**

- **Condition Set 1**
  - **Weather Dataset**: TMY, PEORIA GREATER PEORIA AP, NSRDB (tmy3)
  - **Solar Angle Location**: Meteo Laulng
  - **Transposition Model**: Perez Model
  - **Temperature Model**: Sandia Model
  - **Temperature Model Parameters**
    - **Fixed Tilt**: -3.56, -0.075, 3°C
    - **Rack**: -2.81, -0.0455, 0°C
    - **Selling (%)**: J = 2, F = 2, M = 2, A = 2, M = 2, J = 2, S = 2, O = 2, N = 2, D = 2
    - **Irradiation Variance**: 5%
    - **Cell Temperature Spread**: 4°C
    - **Module Binning Range**: -2.5% to 2.5%
    - **AC System Derate**: 0.5%
  - **Module Characterizations**
    - **Spec Sheet Characterization, PAN**: LG340N1C-AS 340 (May19)
  - **Component Characterizations**
    - **Device**: IQ7X-96-x-INT (Enphase)

**Annual Production**

- **Description**: Annual Global Horizontal Irradiance
  - **Output**: 1,490.7
  - **% Delta**: 12.1%
- **Description**: POA Irradiance
  - **Output**: 1,671.2
  - **% Delta**: 12.1%
- **Description**: Shaded Irradiance
  - **Output**: 1,667.7
  - **% Delta**: -0.2%
- **Description**: Irradiance after Reflection
  - **Output**: 1,616.8
  - **% Delta**: -3.1%
- **Description**: Irradiance after Soiling
  - **Output**: 1,584.4
  - **% Delta**: -2.0%

**Total Collector Irradiance**: 1,584.5 kW

**Energy Metrics**

- **Nameplate**: 15,093.9 kWh
- **Output at Irradiance Levels**: 14,987.1 kWh
  - **% Delta**: -0.7%
- **Output at Cell Temperature Derate**: 13,820.8 kWh
  - **% Delta**: -7.8%
- **Output After Mismatch**: 13,810.7 kWh
  - **% Delta**: -0.1%
- **Optimal DC Output**: 13,810.7 kWh
  - **% Delta**: 0.0%
- **Constrained DC Output**: 13,670.5 kWh
  - **% Delta**: -1.0%
- **Inverter Output**: 13,340.2 kWh
  - **% Delta**: -2.3%

**Energy to Grid**: 13,229.8 kWh

**Temperature Metrics**

- **Avg. Operating Ambient Temp**: 13.5°C
- **Avg. Operating Cell Temp**: 30.0°C

**Simulation Metrics**

- **Operating Hours**: 4689
- **Solved Hours**: 4689

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**Project Location**

- **Address**: Johnathan Ryan Thomas, 1602 W Moss Ave
- **Contact**: Brian Tresenriter, brian@porter-electric.com

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June 16, 2019
### Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Name</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inverters</td>
<td>IQ7X-96-x-INT (Enphase)</td>
<td>28 (8.96 kW)</td>
</tr>
<tr>
<td>AC Branches</td>
<td>8 AWG (Copper)</td>
<td>2 (58.1 ft)</td>
</tr>
<tr>
<td>Module</td>
<td>LG, LG340N1C-AS 340 (May19) (340W)</td>
<td>28 (9.52 kW)</td>
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### Wiring Zones

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<thead>
<tr>
<th>Description</th>
<th>Combiner Poles</th>
<th>String Size</th>
<th>Stringing Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring Zone</td>
<td>12</td>
<td>1-1</td>
<td>Along Racking</td>
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### Field Segments

<table>
<thead>
<tr>
<th>Description</th>
<th>Racking</th>
<th>Orientation</th>
<th>Tilt</th>
<th>Azimuth</th>
<th>Intrarow Spacing</th>
<th>Frame Size</th>
<th>Frames</th>
<th>Modules</th>
<th>Power</th>
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</thead>
<tbody>
<tr>
<td>Field Segment 1</td>
<td>Flush</td>
<td>Landscape</td>
<td>22.26°</td>
<td>152.171°</td>
<td>0.0 ft</td>
<td>1x1</td>
<td>48</td>
<td>24</td>
<td>8.16 kW</td>
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<tr>
<td>Field Segment 2</td>
<td>Flush</td>
<td>Landscape</td>
<td>39.81°</td>
<td>152.171°</td>
<td>0.0 ft</td>
<td>1x1</td>
<td>11</td>
<td>4</td>
<td>1.36 kW</td>
</tr>
</tbody>
</table>

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June 16, 2019
HiDM
HIGH DENSITY MONO PERC MODULE
320 W ~ 335 W
CS1H-320|325|330|335MS (IEC1000 V)

MORE POWER
Maximize the light absorption area,
module efficiency up to 19.86 %
Low NMOT: 42 ± 3 °C
Low temperature coefficient (Pmax):
-0.37 % / °C
Better shading tolerance

MORE RELIABLE
Lower internal current,
lower hot spot temperature
Cell crack risk limited in small region,
enhance the module reliability
Heavy snow load up to 5400 Pa,
wind load up to 2400 Pa

25 years linear power output warranty
10 years product warranty on materials and workmanship

MANAGEMENT SYSTEM CERTIFICATES*
ISO 9001:2015 / Quality management system
ISO 14001:2015 / Standards for environmental management system
OHSAS 18001:2007 / International standards for occupational health & safety

PRODUCT CERTIFICATES*
IEC 61215 / IEC 61730: VDE / CE / CEC AU
IEC61701 ED2: VDE / IEC62716: VDE
UL 1703: CSA
Take-e-way

* We can provide this product with special BOM specifically certified with salt mist,
and ammonia tests. Please talk to our local technical sales representatives to get
your customized solutions.

CANADIAN SOLAR INC. is committed to providing high
quality solar products, solar system solutions and services to
customers around the world. No. 1 module supplier for quality
and performance/price ratio in IHS Module Customer Insight
Survey. As a leading PV project developer and manufacturer
of solar modules with over 30 GW deployed around the world
since 2001.
**MECHANICAL DATA**

**Specification**  
Data  

- **Cell Type**: Mono-crystalline  
- **Dimensions**: 1700 x 992 x 35 mm  
  (66.9 x 39.1 x 1.38 in)  
- **Weight**: 19.2 kg (42.3 lbs)  
- **Frame**: Anodized aluminium alloy  
- **J-Box**: IP67, 3 bypass diodes  
- **Cable**: 4.0 mm² (IEC), 12 AWG (UL)  
- **Cable Length**: 1350 mm (53.1 in)  
  (Including Connector)  
- **Connector**: T4 series (MC4 series is available)  
- **Per Pallet**: 30 pieces  
- **Per Container (40' HQ)**: 780 pieces  

*Manufactured and assembled in China or Thailand.*

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**ELECTRICAL DATA | STC***

<table>
<thead>
<tr>
<th>CS1H</th>
<th>320MS</th>
<th>325MS</th>
<th>330MS</th>
<th>335MS</th>
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<tr>
<td>Nominal Max. Power (Pmax)</td>
<td>320 W</td>
<td>325 W</td>
<td>330 W</td>
<td>335 W</td>
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<tr>
<td>Opt. Operating Voltage (Vmp)</td>
<td>35.6 V</td>
<td>35.8 V</td>
<td>36.0 V</td>
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<tr>
<td>Opt. Operating Current (Imp)</td>
<td>9.00 A</td>
<td>9.09 A</td>
<td>9.18 A</td>
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<td>Open Circuit Voltage (Voc)</td>
<td>43.3 V</td>
<td>43.4 V</td>
<td>43.5 V</td>
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<tr>
<td>Short Circuit Current (Isc)</td>
<td>9.51 A</td>
<td>9.58 A</td>
<td>9.65 A</td>
<td>9.73 A</td>
</tr>
<tr>
<td>Module Efficiency</td>
<td>18.98%</td>
<td>19.27%</td>
<td>19.57%</td>
<td>19.86%</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C ~ +85°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. System Voltage</td>
<td>1500V (IEC) or 1000V (IEC/UL)</td>
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<tr>
<td>Module Fire Performance</td>
<td>TYPE 1 (UL 1703) or CLASS C (IEC 61730)</td>
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<td></td>
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<tr>
<td>Max. Series Fuse Rating</td>
<td>20 A</td>
<td></td>
<td></td>
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<tr>
<td>Application Classification</td>
<td>Class A</td>
<td></td>
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<td></td>
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<tr>
<td>Power Tolerance</td>
<td>0 ~ + 5 W</td>
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<td></td>
</tr>
</tbody>
</table>

*Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C. Measurement uncertainty: ±3 % (Pmax).*

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**ELECTRICAL DATA | NMOT***

<table>
<thead>
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<th>CS1H</th>
<th>320MS</th>
<th>325MS</th>
<th>330MS</th>
<th>335MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Max. Power (Pmax)</td>
<td>239 W</td>
<td>242 W</td>
<td>246 W</td>
<td>250 W</td>
</tr>
<tr>
<td>Opt. Operating Voltage (Vmp)</td>
<td>32.5 V</td>
<td>32.7 V</td>
<td>32.8 V</td>
<td>33.0 V</td>
</tr>
<tr>
<td>Opt. Operating Current (Imp)</td>
<td>7.35 A</td>
<td>7.42 A</td>
<td>7.50 A</td>
<td>7.57 A</td>
</tr>
<tr>
<td>Open Circuit Voltage (Voc)</td>
<td>40.7 V</td>
<td>40.8 V</td>
<td>40.9 V</td>
<td>41.0 V</td>
</tr>
<tr>
<td>Short Circuit Current (Isc)</td>
<td>7.67 A</td>
<td>7.73 A</td>
<td>7.78 A</td>
<td>7.84 A</td>
</tr>
</tbody>
</table>

*Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.*

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**TEMPERATURE CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Coefficient (Pmax)</td>
<td>-0.37 % / °C</td>
</tr>
<tr>
<td>Temperature Coefficient (Voc)</td>
<td>-0.29 % / °C</td>
</tr>
<tr>
<td>Temperature Coefficient (Isc)</td>
<td>0.05 % / °C</td>
</tr>
<tr>
<td>Nominal Module Operating Temperature</td>
<td>42±3 °C</td>
</tr>
</tbody>
</table>

---

**PARTNER SECTION**

The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Canadian Solar Inc. reserves the right to make necessary adjustment to the information described herein at any time without further notice.

---

**CANADIAN SOLAR INC.**

Canadian Solar MSS (Australia) Pty Ltd., 44 Stephenson St, Cremorne VIC 3121, Australia  
support@canadiansolar.com, www.canadiansolar.com/au  

December 2018. All rights reserved, PV Module Product Datasheet V5.571_AU

* Manufactured and assembled in China or Thailand.*
Built for solar’s toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.

**Strength Tested**
All components evaluated for superior structural performance.

**Class A Fire Rating**
Certified to maintain the fire resistance rating of the existing roof.

**UL 2703 Listed System**
Entire system and components meet newest effective UL 2703 standard.

**PE Certified**
Pre-stamped engineering letters available in most states.

**Design Assistant**
Online software makes it simple to create, share, and price projects.

**25-Year Warranty**
Products guaranteed to be free of impairing defects.

Color of racking and flashing will be black.
XR Rails

**XR10 Rail**
A low-profile mounting rail for regions with light snow.
- 6’ spanning capability
- Moderate load capability
- Clear and black finish

**XR100 Rail**
The ultimate residential solar mounting rail.
- 8’ spanning capability
- Heavy load capability
- Clear and black finish

**XR1000 Rail**
A heavyweight mounting rail for commercial projects.
- 12’ spanning capability
- Extreme load capability
- Clear anodized finish

**Bonded Splices**
All rails use internal splices for seamless connections.
- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

Clamps & Grounding

**UFOs**
Universal Fastening Objects bond modules to rails.
- Fully assembled & lubed
- Single, universal size
- Clear and black finish

**Stopper Sleeves**
Snap onto the UFO to turn into a bonded end clamp.
- Bonds modules to rails
- Sized to match modules
- Clear and black finish

**CAMO**
Bond modules to rails while staying completely hidden.
- Universal end-cam clamp
- Tool-less installation
- Fully assembled

**Grounding Lugs**
Connect arrays to equipment ground.
- Low profile
- Single tool installation
- Mounts in any direction

Attachments

**FlashFoot2**
Flash and mount XR Rails with superior waterproofing.
- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

**Conduit Mount**
Flash and mount conduit, strut, or junction boxes.
- Twist-on Cap eases install
- Wind-driven rain tested
- Secures ¾” or 1” conduit

**Slotted L-Feet**
Drop-in design for rapid rail attachment.
- Secure rail connections
- Slot for vertical adjusting
- Clear and black finish

**Bonding Hardware**
Bond and attach XR Rails to roof attachments.
- T & Square Bolt options
- Nut uses 7/16” socket
- Assembled and lubricated

Resources

**Design Assistant**
Go from rough layout to fully engineered system. For free.
Go to IronRidge.com/design

**NABCEP Certified Training**
Earn free continuing education credits, while learning more about our systems.
Go to IronRidge.com/training

© 2019 IronRidge, Inc. All rights reserved. U.S. Patents: #8,895,290; #9,819,303; #9,865,938; Others Pending. Version 1.70
Single Phase Inverter with HD-Wave Technology for North America


Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

solaredge.com
# Single Phase Inverter

with HD-Wave Technology for North America


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<tbody>
<tr>
<td>Rated AC Power Output</td>
<td>3000</td>
<td>3800 @ 240V</td>
<td>5000</td>
<td>6000 @ 240V</td>
<td>7600</td>
<td>10000</td>
<td>11400 @ 240V</td>
</tr>
<tr>
<td>Maximum AC Power Output</td>
<td>3000</td>
<td>3800 @ 240V</td>
<td>5000</td>
<td>6000 @ 208V</td>
<td>7600</td>
<td>10000</td>
<td>11400 @ 208V</td>
</tr>
<tr>
<td>AC Output Voltage Min.-Nom.-Max.</td>
<td>🟢</td>
<td>🟢</td>
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<td>🟢</td>
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<tr>
<td>AC Frequency (Nominal)</td>
<td>59.3 - 60 - 60.5 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Maximum Continuous Output Current @240V</td>
<td>12.5</td>
<td>16</td>
<td>21</td>
<td>25</td>
<td>32</td>
<td>42</td>
<td>47.5 A</td>
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<tr>
<td>Maximum Continuous Output Current @208V</td>
<td>-</td>
<td>16</td>
<td>-</td>
<td>24</td>
<td>-</td>
<td>-</td>
<td>48.5 A</td>
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<tr>
<td>Power Factor</td>
<td>1, adjustable -0.85 to 0.85</td>
<td></td>
<td></td>
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<tr>
<td>GFDI Threshold</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Utility Monitoring, Islanding Protection, Country Configurable Thresholds</td>
<td>Yes</td>
<td></td>
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<tbody>
<tr>
<td>Maximum DC Power @240V</td>
<td>4650</td>
<td>5900</td>
<td>7750</td>
<td>9300</td>
<td>11800</td>
<td>15500</td>
<td>17650 W</td>
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<td>Maximum DC Power @208V</td>
<td>-</td>
<td>5100</td>
<td>-</td>
<td>7750</td>
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<td>-</td>
<td>15500 W</td>
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<td>Transformer-less, Ungrounded</td>
<td>Yes</td>
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<tr>
<td>Nominal DC Input Voltage</td>
<td>480 Vdc</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Maximum Input Voltage</td>
<td>360 Vdc</td>
<td></td>
<td></td>
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<tr>
<td>Maximum Current @240V</td>
<td>8.5</td>
<td>10.5</td>
<td>13.5</td>
<td>16.5</td>
<td>20</td>
<td>27</td>
<td>30.5 Adc</td>
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<tr>
<td>Maximum Input Current @208V</td>
<td>-</td>
<td>9</td>
<td>-</td>
<td>13.5</td>
<td>-</td>
<td>-</td>
<td>27 Adc</td>
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<tr>
<td>Max. Input Short Circuit Current</td>
<td>45 Adc</td>
<td></td>
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<tr>
<td>Reverse-Polarity Protection</td>
<td>Yes</td>
<td></td>
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<tr>
<td>Ground-Fault Isolation Detection</td>
<td>600 kΩ Sensitivity</td>
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<td>Maximum Inverter Efficiency</td>
<td>99</td>
<td>99.2</td>
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<td>CEC Weighted Efficiency</td>
<td>99</td>
<td>99 @ 240V</td>
<td>98.5 @ 208V</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nighttime Power Consumption</td>
<td>&lt; 2.5 W</td>
<td></td>
<td></td>
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</table>

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated
## Single Phase Inverter with HD-Wave Technology for North America


### ADDITIONAL FEATURES

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<tbody>
<tr>
<td>Supported Communication Interfaces</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
<td>RS485, Ethernet, ZigBee (optional), Cellular (optional)</td>
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<tr>
<td>Revenue Grade Data, ANSI C12.20</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
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<tr>
<td>Inverter Commissioning</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
<td>with the SetApp mobile application using built-in Wi-Fi station for local connection</td>
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### STANDARD COMPLIANCE

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<tr>
<td>Safety</td>
<td>UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07</td>
<td>UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07</td>
<td>UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07</td>
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<td>UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07</td>
<td>UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07</td>
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<tr>
<td>Grid Connection Standards</td>
<td>IEEE1547, Rule 21, Rule 14 (HI)</td>
<td>IEEE1547, Rule 21, Rule 14 (HI)</td>
<td>IEEE1547, Rule 21, Rule 14 (HI)</td>
<td>IEEE1547, Rule 21, Rule 14 (HI)</td>
<td>IEEE1547, Rule 21, Rule 14 (HI)</td>
<td>IEEE1547, Rule 21, Rule 14 (HI)</td>
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### INSTALLATION SPECIFICATIONS

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>AC Output Conduit Size / AWG Range</td>
<td>3/4” minimum / 14-6 AWG</td>
<td>3/4” minimum / 14-6 AWG</td>
<td>3/4” minimum / 14-6 AWG</td>
<td>3/4” minimum / 14-6 AWG</td>
<td>3/4” minimum / 14-6 AWG</td>
<td>3/4” minimum / 14-6 AWG</td>
<td>3/4” minimum / 14-6 AWG</td>
</tr>
<tr>
<td>DC Input Conduit Size / # of Strings / AWG Range</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
<td>3/4” minimum / 1-2 strings / 14-6 AWG</td>
</tr>
<tr>
<td>Dimensions with Safety Switch (HxWxD)</td>
<td>17.7 x 14.6 x 6.8 / 450 x 370 x 174</td>
<td>21.3 x 14.6 x 7.3 / 540 x 370 x 185</td>
<td>21.3 x 14.6 x 7.3 / 540 x 370 x 185</td>
<td>21.3 x 14.6 x 7.3 / 540 x 370 x 185</td>
<td>21.3 x 14.6 x 7.3 / 540 x 370 x 185</td>
<td>21.3 x 14.6 x 7.3 / 540 x 370 x 185</td>
<td>21.3 x 14.6 x 7.3 / 540 x 370 x 185</td>
</tr>
<tr>
<td>Weight with Safety Switch</td>
<td>22 / 10</td>
<td>25.1 / 11.4</td>
<td>26.2 / 11.9</td>
<td>38.8 / 17.6</td>
<td>38.8 / 17.6</td>
<td>38.8 / 17.6</td>
<td>38.8 / 17.6</td>
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<tr>
<td>Cooling</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
<td>Natural Convection</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40 to +140 / -40 to +60°F</td>
<td>-40 to +140 / -40 to +60°F</td>
<td>-40 to +140 / -40 to +60°F</td>
<td>-40 to +140 / -40 to +60°F</td>
<td>-40 to +140 / -40 to +60°F</td>
<td>-40 to +140 / -40 to +60°F</td>
<td>-40 to +140 / -40 to +60°F</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
<td>NEMA 4X (Inverter with Safety Switch)</td>
</tr>
</tbody>
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(3) Revenue grade inverter P/N: SE3000H-US000BNC4
(4) Full power up to at least 50°C / 122°F; for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
1.1.1 PROJECT NOTES:

1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS' LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.

1.1.3 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.

1.1.4 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4:

- PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE INVERTERS: UL 1741, 929, 519 COMBINER BOXES: UL 1703 OR UL 1741 ACCESSORY.

1.1.5 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.

1.1.6 ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].

1.1.7 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

1.2.1 SCOPE OF WORK:

1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

1.3.1 WORK INCLUDES:

- PV ROOF ATTACHMENTS - IRONRIDGE FLASHFOOT2
- PV RACKING SYSTEM INSTALLATION - IRONRIDGE XR100
- PV MODULE AND INVERTER INSTALLATION - CANADIAN SOLAR CS1H-330MS/SOLAR EDGE SE7600H-US (240V)
- PV EQUIPMENT GROUNDING
- PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
- PV LOAD CENTERS (IF INCLUDED)
- PV METERING/MONITORING (IF INCLUDED)
- PV FINAL COMMISSIONING
- ELECTRICAL EQUIPMENT RETROFIT FOR PV
- SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE

1.3.2 ATTACHMENT TYPE: IRONRIDGE FLASHFOOT2

1.3.3 MSP UPGRADE: NO

NEW PV SYSTEM: 9.240 kWp

THOMAS RESIDENCE

1602 W MOSS AVE
PEORIA, IL 61606

ASSESSOR'S #: 18/08/176/003

OWNER
NAME: JONATHON THOMAS
PHONE: (309) 214-2897

PROJECT MANAGER
NAME: SHANE HELLE
PHONE: (309) 214-2897

CONTRACTOR
NAME: PORTER ELECTRIC LLC
PHONE: (309) 214-2897

AUTHORITIES HAVING JURISDICTION
BUILDING: CITY OF PEORIA
ZONING: CITY OF PEORIA
UTILITY: AMEREN ILLINOIS

DESIGN SPECIFICATIONS
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: 20 PSF
WIND EXPOSURE: B
WIND SPEED: 115 MPH

APPLICABLE CODES & STANDARDS
BUILDING: IBC 2018
ELECTRICAL: NEC 2017
FIRE: IRC 2018
RESIDENTIAL: RO 2018
2.1.1 SITE NOTES: 2.4.9

2.1.2 A ROOM WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.

2.1.3 THE SOLAR PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A ULTRAVIOLET INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES. 2.4.10

2.1.4 THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF UPLANDS.

2.1.5 PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26. 2.5.1

2.1.6 ROOF TURBINES SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER’S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVICES TO PROTECT THE BUILDING STRUCTURE FROM THE ENVIRONMENT. 2.5.2

2.2 EQUIPMENT LOCATIONS: 2.5.4

2.2.1 ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.

2.2.2 WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A) AND NEC TABLES 310.15 (B)(2U) AND 310.15 (B)(3C). 2.5.5

2.2.3 JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 689.34.

2.2.4 ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.

2.2.5 ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.

2.2.6 ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPLICABLE.

2.3 STRUCTURAL NOTES: 2.5.8

2.3.1 RACKING SYSTEM & PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAYS/ SUBARRAYS. ACCORDING TO RAIL MANUFACTURER’S INSTRUCTIONS.

2.3.2 JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS’ SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLUSHED & SEALED PER LOCAL REQUIREMENTS.

2.3.3 ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALLED WITH APPROVED SEALANT SEALANT CODE BY A LICENSED CONTRACTOR.

2.3.4 ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.

2.3.5 WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

2.4 GROUNDING NOTES: 2.6.1

2.4.1 GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.

2.4.2 PV SYSTEMS REQUIRE AN EQUIPMENT GROUNDING CONDUCTOR. ALL METAL ELECTRICAL EQUIPMENT AND STRUCTURAL COMPONENTS BONDED GROUND, IN ACCORDANCE WITH 250.134 OR 250.136(A). ONLY THE DC CONDUCTORS ARE UNGROUNDED.

2.4.3 EACH MODULE WILL BE GROUNDED USING WEBS GROUNDING CLIPS AS SHOWN IN THE MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHU. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURER’S INSTALLATION REQUIREMENTS.

2.4.4 PV EQUIPMENT SHALL BE GROUNDED TO ACCORD WITH NEC 689.43 AND MINIMUM NEC TABLE 250.122.

2.4.5 METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURE CONSIDERED GROUNDING SHOWN IN 250.134 AND 250.136(A).

2.4.6 EACH MODULE WILL BE GROUNDED USING WEEBS GROUNDING CLIPS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHU. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURER’S INSTALLATION REQUIREMENTS.

2.4.7 GROUNDING TO A MODULE SHALL BE ARRANGED SUCH THAT THE GROUNDING CONNECTION TO A MODULE IS NOT INTERRUPTING THE GROUNDING CONNECTION TO ANOTHER MODULE.

2.4.8 GROUNDING AND BONDING CONNECTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF A BWG OR LARGER (NEC 250.119).

INTERCONNECTION NOTES: 2.7.1

LOAD SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH NEC 705.12(A) THROUGH 705.12(D).

2.5.8 THE SUM OF THE UTILITY OCPO AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF THE BUSBAR RATING [NEC 705.12(B)(2)]


FEEDER TAP INTERCONNECTION (LOAD SIDE) ACCORDING TO NEC 705.12(B)(1)

SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC 705.12(A) WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.82

BACKFEEDING BREAKER FOR ELECTRIC POWER SOURCES OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING (NEC 705.12(B)(3)).

DISCONNECTION AND OVER-CURRENT PROTECTION NOTES: 2.7.6

SWITCHING DEVICES SHALL BE WIRER SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED LINE SIDE (TYPICALLY THE UPPER TERMINALS), DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE BREAK-SWITCH.

2.4.9 BOTH POSITIVE AND NEGATIVE PV CONDUCTORS ARE UNGROUNDED THEREFORE BOTH MUST OPEN WHERE A DISCONNECT IS REQUIRED, ACCORDING TO NEC 690.13.

ISOLATING DEVICES OR EQUIPMENT DISCONNECTING MEANS SHALL BE INSTALLED IN CIRCUITS CONNECTED TO EQUIPMENT AT A LOCATION WITHIN THE EQUIPMENT, OR WITHIN SIGHT AND WITHIN 10 FT OF THE EQUIPMENT. AN EQUIPMENT DISCONNECTING MEANS SHALL BE PERMITTED TO BE REMOTE FROM THE EQUIPMENT WHERE THE EQUIPMENT DISCONNECTING MEANS CAN BE REMOTELY OPERATED, FROM WITHIN 10 FT OF THE EQUIPMENT, ACCORDING TO NEC 690.15(A)

PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION TO REDUCE SHOCK HAZARD FOR EMERGENCY RESPONDERS IN ACCORDANCE WITH NEC 690.12(A) THROUGH (D)

ALL OCPO RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 248

2.7.8 BOTH POSITIVE AND NEGATIVE PV CONDUCTORS ARE UNGROUNDED THEREFORE BOTH REQUIRE OVER-CURRENT PROTECTION. ACCORDING TO NEC 240.21, (SEE EXCEPTION IN NEC 690.9)

IF REQUIRED BY AHU, SYSTEM WILL INCLUDE ARC-Fault CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.

WIRING & CONDUIT NOTES: 2.7.9

ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT USE/WIRING.

ALL CONDUCTORS SIZED ACCORDING TO NEC 690.6, NEC 690.7.

EXPOSED PV SOURCE CIRCUITS AND OUTPUT CIRCUITS SHALL USE WIRE LISTED AND IDENTIFIED AS PHOTOVOLTAIC (PV) WIRE (690.31(C)). PV MODULES WIRE LEADS SHALL BE LISTED FOR USE ON PV ARRAYS, ACCORDING TO NEC 690.31(A)
NEW PV SYSTEM: 9.240 kWp

ENGINEER OF RECORD
08.16.2019

DESIGN BY:
A.S.

PAPER SIZE: 11" x 17" (ANSI B)

CONTRACTOR
PORTER ELECTRIC LLC
PHONE:

LIC. NO.:
DATE:

REVISIONS

ADDRESS:
1504 N 8TH ST PEKIN, ILLINOIS, 61554

DESIGNED BY
CIVIC SOLAR INC.
PHONE:

ADDRESS:
426 17TH ST., SUITE 600
OAKLAND, CA 94612

THOMAS RESIDENCE
1602 W MOSS AVE
PEORIA, IL 61606
APN: 18/08/176/003

ELECTRICAL PLAN
(SHEET 4)

01

ELECTRICAL PLAN

3' FIRE ACCESS PATH

3' FIRE ACCESS PATH

3' FIRE ACCESS PATH

3' FIRE ACCESS PATH

ARRAY 1 - 7.92 kW
44 (N) MODULES
TILT: 25 DEGREES
ROOF PITCH: 5:12
AZIMUTH: 152 DEGREES

ARRAY 2 - 1.32 kW
11 (N) MODULES
TILT: 27 DEGREES
ROOF PITCH: 5:12
AZIMUTH: 152 DEGREES

MODULAR STRINGING

FIRE CLEARANCE

MODULE:
CANADIAN SOLAR
CS1H-330MS
330 WATTS

39.1"
66.9"
NEW PV SYSTEM: 9.240 kWp

ENGINEER OF RECORD
THOMAS RESIDENCE
1602 W MOSS AVE
PEORIA, IL 61606
APN: 18/08/176/003

CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS

<table>
<thead>
<tr>
<th>TYPICAL</th>
<th>CONDUCTOR</th>
<th>CONDUIT</th>
<th>CURRENT CARRYING CONDUCTORS</th>
<th>OCPO</th>
<th>EGC</th>
<th>TEMP. CORR. FACTOR</th>
<th>CONDUIT FILL FACTOR</th>
<th>CONT. CURRENT</th>
<th>MAX. CURRENT (125%)</th>
<th>BASE AMP</th>
<th>DERATED AMP</th>
<th>TERM. TEMP. RATING</th>
<th>AMP. @ TERMINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 AWG PV WIRE, COPPER</td>
<td>FREE AIR</td>
<td>2</td>
<td>N/A</td>
<td>6 AWG BARE, COPPER</td>
<td>0.71 (55.6°C)</td>
<td>1</td>
<td>15A</td>
<td>19.75A</td>
<td>50A</td>
<td>39.05A</td>
<td>75°C</td>
<td>50A</td>
</tr>
<tr>
<td>2</td>
<td>10 AWG THWN-2, COPPER</td>
<td>0.75” O.D. EMT</td>
<td>4</td>
<td>N/A</td>
<td>10 AWG THWN-2, COPPER</td>
<td>0.71 (55.6°C)</td>
<td>0.8</td>
<td>15A</td>
<td>19.75A</td>
<td>40A</td>
<td>32.75A</td>
<td>75°C</td>
<td>30A</td>
</tr>
<tr>
<td>1</td>
<td>6 AWG THWN-2, COPPER</td>
<td>0.75” O.D. EMT</td>
<td>2</td>
<td>40A</td>
<td>8 AWG THWN-2, COPPER</td>
<td>0.98 (39.3°C)</td>
<td>1</td>
<td>30A</td>
<td>40A</td>
<td>50A</td>
<td>32.72A</td>
<td>75°C</td>
<td>60A</td>
</tr>
<tr>
<td>2</td>
<td>6 AWG THWN-2, COPPER</td>
<td>0.75” O.D. EMT</td>
<td>2</td>
<td>N/A</td>
<td>6 AWG THWN-2, COPPER</td>
<td>0.98 (39.3°C)</td>
<td>1</td>
<td>30A</td>
<td>40A</td>
<td>75A</td>
<td>75A</td>
<td>75°C</td>
<td>60A</td>
</tr>
</tbody>
</table>

EQUIPMENT LEFT LINE IS (N) NEW UNLESS OTHERWISE NOTED.
EQUIPMENT RIGHT LINE IS (E) EXISTING

MAIN SERVICE PANEL
240/120 V 1Ø, 3W
MAIN BUSS: 200A
TO UTILITY GRID (UG)

CANADIAN SOLAR
CS1H-330MS

SOLAR EDGE
P340 OPTIMIZER

JUNCTION BOX
SOLAR EDGE
SE7600H-US (240)

60A FUSED AC DISCONNECT
FUSES 40A

GROUND ROD

E-601.00
(SHEET 6)
**SYSTEM SUMMARY**

<table>
<thead>
<tr>
<th>STRING #1</th>
<th>STRING #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER/RXN MAX OUTPUT CURRENT</td>
<td>1.4</td>
</tr>
<tr>
<td>OPTIMIZER IN SERIES</td>
<td>1</td>
</tr>
<tr>
<td>NOMINAL STRING VOLTAGE</td>
<td>400V</td>
</tr>
<tr>
<td>ARRAY OPERATING CURRENT</td>
<td>11.5A</td>
</tr>
<tr>
<td>ARRAY STC POWER</td>
<td>9.40kW</td>
</tr>
<tr>
<td>MAX AC POWER</td>
<td>7.7kW</td>
</tr>
<tr>
<td>CONVERTED (DC) AC POWER</td>
<td>7.6kW</td>
</tr>
</tbody>
</table>

**MODULES**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty</th>
<th>MAKE AND MODEL</th>
<th>PM</th>
<th>PTC</th>
<th>BIC</th>
<th>MP</th>
<th>VOC</th>
<th>VMP</th>
<th>TEMP, COEFF. OF VOC</th>
<th>FUSE RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM1-08</td>
<td>28</td>
<td>CANADIAN SOLAR CS1H-320MS</td>
<td>320W</td>
<td>320W</td>
<td>9.95A</td>
<td>51.5V</td>
<td>48V</td>
<td>0.28%/°C (0.55%/°C)</td>
<td>20A</td>
<td></td>
</tr>
</tbody>
</table>

**POWER OPTIMIZERS**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty</th>
<th>MAKE AND MODEL</th>
<th>PM</th>
<th>PTC</th>
<th>BIC</th>
<th>MP</th>
<th>VOC</th>
<th>VMP</th>
<th>TEMP, COEFF. OF VOC</th>
<th>FUSE RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO1-28</td>
<td>28</td>
<td>SOLAR EDGE P340</td>
<td>340W</td>
<td>340W</td>
<td>9A</td>
<td>48V</td>
<td>32A</td>
<td>20A</td>
<td>48V</td>
<td>59.0%</td>
</tr>
</tbody>
</table>

**INVERTERS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RATED INPUT POWER</th>
<th>MAX OUTPUT CURRENT</th>
<th>MAX INPUT CURRENT</th>
<th>MAX AC VOLTAGE</th>
<th>WEIGHTED EFFICIENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLAR EDGE PSE7600-US (240V)</td>
<td>240V FLOATING</td>
<td>41A</td>
<td>7600W</td>
<td>32A</td>
<td>20A</td>
</tr>
</tbody>
</table>

**DISCONNECTS**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1</td>
<td>1</td>
<td>SQUARE D D222NRB, 2-POLE, 60A, 240VAC OR EQUIVALENT</td>
</tr>
</tbody>
</table>

**BILL OF MATERIALS**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MAKE</th>
<th>MODEL NUMBER</th>
<th>REF</th>
<th>Qty/Unit</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODULE</td>
<td>CANADIAN SOLAR</td>
<td>CS1H-320MS</td>
<td>PM1-08</td>
<td>28</td>
<td>CANADIAN SOLAR CS1H-320MS 320W 1/6 CUT CELL MONOCRYSTALLINE SILICON</td>
</tr>
<tr>
<td>INVERTER</td>
<td>SOLAR EDGE</td>
<td>STE-030MS-US (240V)</td>
<td>PO1-28</td>
<td>28</td>
<td>SOLAR EDGE 3000W MIN USB (240V) SINGLE STRING INVERTER</td>
</tr>
<tr>
<td>MODULE OPTIMIZER</td>
<td>SOLAR EDGE</td>
<td>P340</td>
<td>PO1-28</td>
<td>28</td>
<td>SOLAR EDGE PS40 OPTIMIZER [REQUIRED PART OF INVERTERS DISTRIBUTED DC ARCHITECTURE]</td>
</tr>
<tr>
<td>OCPD</td>
<td>SQUARE D</td>
<td>D222NRB</td>
<td>SW1</td>
<td>1</td>
<td>SQUARE D D222NRB, 2-POLE, 60A, 240VAC OR EQUIVALENT</td>
</tr>
</tbody>
</table>

**WIRING**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty/Unit</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR1</td>
<td>223 FEET</td>
<td>10 AWG PV WIRE, COPPER (POSITIVE AND NEGATIVE)</td>
</tr>
<tr>
<td>WR2</td>
<td>112 FEET</td>
<td>8 AWG BARRE, COPPER (GROUND)</td>
</tr>
<tr>
<td>WR3</td>
<td>60 FEET</td>
<td>10 AWG TINNED 2 COPPER, RED (POSITIVE)</td>
</tr>
<tr>
<td>WR4</td>
<td>112 FEET</td>
<td>10 AWG TINNED 2 COPPER, BLACK (NEGATIVE)</td>
</tr>
<tr>
<td>WR5</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, GROUND (GROUND)</td>
</tr>
<tr>
<td>WR6</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, RED (LINE 1)</td>
</tr>
<tr>
<td>WR7</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, BLACK (LINE 2)</td>
</tr>
<tr>
<td>WR8</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, WHITE (NEUTRAL)</td>
</tr>
<tr>
<td>WR9</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, GREEN (GROUND)</td>
</tr>
<tr>
<td>WR10</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, WHITE (NEUTRAL)</td>
</tr>
<tr>
<td>WR11</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, BLACK (LINE 2)</td>
</tr>
<tr>
<td>WR12</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, RED (LINE 1)</td>
</tr>
<tr>
<td>WR13</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, GREEN (GROUND)</td>
</tr>
<tr>
<td>WR14</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, WHITE (NEUTRAL)</td>
</tr>
<tr>
<td>WR15</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, RED (LINE 1)</td>
</tr>
<tr>
<td>WR16</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, BLACK (LINE 2)</td>
</tr>
<tr>
<td>WR17</td>
<td>10 FEET</td>
<td>8 AWG TINNED 2 COPPER, GREEN (GROUND)</td>
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</table>

**OCPDs**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1-2</td>
<td>2</td>
<td>FUSE, 40A, 240V AC</td>
</tr>
</tbody>
</table>

**WIREWAY**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty/Unit</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>WR34-04</td>
<td>50 FEET</td>
<td>TEM CONDUCT, 0.75&quot; X 0.062&quot;</td>
</tr>
</tbody>
</table>

**TRANSITION BOX**

<table>
<thead>
<tr>
<th>REF</th>
<th>Qty</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>XB1</td>
<td>1</td>
<td>TRANSITION PASS-THROUGH BOX, WITH 4 TERMINAL BLOCKS</td>
</tr>
</tbody>
</table>

**DESIGN TEMPERATURES**

<table>
<thead>
<tr>
<th>ASHRAE EXTREME LOW</th>
<th>-27.2°C (-17.0°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASHRAE 2% HIGH</td>
<td>33.6°C (92.5°F)</td>
</tr>
</tbody>
</table>

**ENGINEER OF RECORD**

<table>
<thead>
<tr>
<th>CONTRACTOR</th>
<th>PORTER ELECTRIC LLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHONE</td>
<td>(608) 214-2467</td>
</tr>
<tr>
<td>ADDRESS</td>
<td>1504 N 8TH ST, PEKIN, ILLINOIS, 61554</td>
</tr>
<tr>
<td>LIC. NO.</td>
<td>16-0512</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THOMAS RESIDENCE</th>
<th>1602 W MOSS AVE, PEORIA, IL 61606</th>
</tr>
</thead>
<tbody>
<tr>
<td>APN</td>
<td>18/08/176/003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DESIGNER</th>
<th>CIVIC SOLAR INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHONE</td>
<td>608-493-2577</td>
</tr>
<tr>
<td>ADDRESS</td>
<td>420 17TH ST, SUITE 600, OAKLAND, CA 94612</td>
</tr>
</tbody>
</table>

| NEW PV SYSTEM | 9.240 kWp |

**E-602.00**

**PAPER SIZE** | 11" x 17" (ANSI B)
CAUTION!

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM ROOF MOUNTED SOLAR ARRAYS WITH SAFETY DISCONNECTS AS SHOWN:

INTERACTIVE PHOTOVOLTAIC SYSTEM CONNECTED
PLAQUE

INTERACTIVE PHOTOVOLTAIC SYSTEM DISCONNECT LOCATED SW SIDE OF THE HOUSE

PLACARDS

E-603.00
(SHEET 8)
SHEET KEYNOTES

1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: TRUSS
3. ATTACHMENT TYPE: IRONRIDGE FLASHFOOT2
4. MODULE MANUFACTURER: CANADIAN SOLAR
5. MODULE MODEL: CS1H-330MS
6. MODULE LENGTH: 66.9 IN.
7. MODULE WIDTH: 39.1 IN.
8. MODULE WEIGHT: 42.3 LBS.
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: 3' FROM RIDGE/RAKE, 18" FROM HIPS/VALLEYS
11. TRUSS SPACING: 18 IN. O.C.
12. TRUSS SIZE: 2X4 NOMINAL
13. LAG BOLT DIAMETER: 5/16 IN.
14. LAG BOLT EMBEDMENT: 4 IN.
15. TOTAL # OF ATTACHMENTS: 117
16. TOTAL AREA: 508.63 SQ. FT.
17. TOTAL WEIGHT: 1435.9 LBS.
18. WEIGHT PER ATTACHMENT: 12.27 LBS.
19. DISTRIBUTED LOAD: 2.82 PSF.
20. MAX. HORIZONTAL STANDOFF: 36 IN.
21. MAX. VERTICAL STANDOFF: LANDSCAPE: 26 IN., PORTRAIT: 32 IN.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER (OR EQUIV.): IRONRIDGE
24. RAIL MODEL (OR EQUIVALENT): XR100
25. RAIL WEIGHT: 0.68 PLF.
26. MAX. TRUSS SPAN: 20 FT.
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

FIELD VERIFY ALL MEASUREMENTS

NEW PV SYSTEM: 9.240 kWp

ENGINEER OF RECORD

PORTER ELECTRIC LLC
PHONE: (309) 214-2897
ADDRESS: 1904 N 8TH ST PEKIN, ILLINOIS, 61554
LIC. NO.: 16-0012

THOMAS RESIDENCE
1602 W MOSS AVE
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APN: 18/08/176/003

DESIGN BY:
CIVIC SOLAR INC.
PHONE: 800-409-2257
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OAKLAND, CA 94612

CONTRACTOR
PORTER ELECTRIC LLC
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LIC. NO.: 16-0012

THOMAS RESIDENCE
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PEORIA, IL 61606
APN: 18/08/176/003

ENGINEER OF RECORD

PORTER ELECTRIC LLC
PHONE: (309) 214-2897
ADDRESS: 1904 N 8TH ST PEKIN, ILLINOIS, 61554
LIC. NO.: 16-0012

THOMAS RESIDENCE
1602 W MOSS AVE
PEORIA, IL 61606
APN: 18/08/176/003

ENGINEER OF RECORD
HiDM
HIGH DENSITY MONO PERC MODULE
320 W ~ 335 W
CS1H-320 | 325 | 330 | 335MS (IEC1000 V)

MORE POWER
Maximizing the light absorption area, module efficiency up to 19.86 %

Low NOC: 42 ± 3 °C
Low temperature coefficient (Fmax): -0.37 %/°C

Better shading tolerance

MORE RELIABLE
Lower internal current, lower hot spot temperature
Cell crack risk limited in small region, enhance the module reliability

Heavy snow load up to 5400 Pa, wind load up to 2400 Pa

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2015 | Quality management system
ISO 14001:2015 | Standards for environmental management system
OHSAS 18001:2007 | International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61701 VDE / CEC / CE AU
IEC61701 50 / VDE / IEC62716 VDE
UL 1703 C62

**We can provide this product with special IES specific if it is certified with such tests, and hence, is qualified. Please talk to your local technical sales representatives to get your customized solutions.

CANADIAN SOLAR INC. is committed to providing high quality solar products, solar system solutions and services to customers around the world. No. 1 module supplier for quality and performance/priice ratio in IHS Module Customer Insight Survey. As a leading PV industry developer and manufacturer of solar modules with over 31 GW deployed around the world since 2001.

NOW PV SYSTEM: 9.240 kWp
ENGINEER OF RECORD
NEW PV SYSTEM: 9.240 kWp

CIVIC SOLAR INC.
1602 W MOSS AVE
PÉORIA, IL 61606
APN: 18/08/176/003

THOMAS RESIDENCE
1602 W MOSS AVE
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RESOURCE DOCUMENT
PAPER SIZE: 11” x 17” (ANSI B)
DATE: 06/16/2019
DESIGN BY: A.J.

REVISIONS

R-001.00 (SHEET 10)

*Manufactured and assembled in China or Thailand.
Single Phase Inverter with HD-Wave Technology for North America


Optimized installation with HD-Wave technology

Specifically designed to work with power optimizers
Recess-breaking efficiency
Fixed voltage inverter for longer strings
Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
UL 1741 SA certified, for CPRI Rule 21 grid compliance

NEW PV SYSTEM: 9.240 kWp

ENGINEER OF RECORD

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NEW PV SYSTEM: 9.240 kWp

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PAPER SIZE: 11" x 17" (ANSI B)
DATE: 08/16/2019
DESIGN BY: A. S.
REVISIONS: R-002.00
Power Optimizer
For North America
P320 / P340 / P370 / P400 / P405 / P505

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (98%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization

Fast installation with a single bolt
Next generation maintenance with module-level monitoring
Meets NEC requirements for arc fault protection (AFPI) and Photovoltaic Rapid Shutdown System (PVRSS)
Module-level voltage shutdown 'or installer and firefighter safety

NEW PV SYSTEM: 9.240 kWp

ENGINEER OF RECORD

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DATE: 08/10/2019
DESIGN BY: A.A.
REVISIONS: R-003.00
XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.

XR110
XR110 is a sleek, low-profile mounting rail, designed for regions with lighter snow. It achieves a 6-foot exposure, while remaining lightweight and economical.
- 6" spanning capacity
- Moderate load capability
- Clear anodized finish
- Internal splice available

XR100
XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also accommodating spans up to 12 feet.
- 12" spanning capacity
- Heavy load capability
- Clear & black anodized finish
- Internal splice available

XR1000
XR1000 is a heavyweight among solar mounting rails. It’s built to handle extreme climates and spans 12 feet or more for commercial applications.
- 12" spanning capacity
- Extreme load capability
- Clear anodized finish
- Internal splice available

Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7-12 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

<table>
<thead>
<tr>
<th>Load</th>
<th>Snow (PSF)</th>
<th>Wind (MPH)</th>
<th>Rail Span</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td>XR10</td>
</tr>
<tr>
<td></td>
<td>100</td>
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<td>5&quot;</td>
</tr>
<tr>
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<td>6&quot;</td>
<td>8&quot;</td>
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<td>12&quot;</td>
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</table>

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**NEW PV SYSTEM: 9.240 kWp**

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**ENGINEER OF RECORD**

**R-005.00**

(SHEET 14)