**NOTES:**

1. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY!
2. ALL TESTING SHALL BE PERFORMED BY QUALIFIED PERSONNEL, WITH PROPER PERSONAL PROTECTIVE EQUIPMENT
3. THE PRODUCTION METER AND AC DISCONNECT SHOULD BE LOCATED TOGETHER IN A READILY ACCESSIBLE LOCATION WITHIN 10' OF THE MAIN SERVICE METER
4. 24/7 UNSCRIPTED KEYLESS ACCESS SHALL BE PROVIDED FOR THE METERS AND AC DISCONNECT
5. UTILITY AC DISCONNECT SHOULD BE LOCATED WITHIN 10 FEET OF THE MAIN SERVICE METER
6. NOTE ALL THE APPLICABLE NEC CODES
7. SHOW ALL THE SYSTEMS INCLUDING STORAGE, EXISTING AND NEW (IF APPLICABLE)

**PV SYSTEM:**

- **ROOF SLOPE:** 20°
- **AZIMUTH:** 180°
- **PV MODULES:** 320W
- **TOTAL:** 14
- **MODULES PER STRING:** 14

**INVERTER INFORMATION:**

- 3.8 KW UL CERTIFIED INVERTER, (1)
- **DC/AC RATIO:** 1.179

**ABBREVIATIONS:**

1. **FOH:** FRONT OF HOUSE
2. **FSB:** FIRE SET BACKS
3. **(E):** EXISTING
4. **(N):** NEW
5. **PV:** PHOTOVOLTAIC
6. **MAX:** MAXIMUM
7. **OCPD:** OVERCURRENT PROTECTION DEVICE
8. **PCC:** POINT OF COMMON COUPLING
9. **PoC:** POINT OF DER CONNECTION
10. **RPA:** REFERENCE POINT OF APPLICABILITY

**SYSTEM SIZE:**

3.8kW AC/4.48kW DC
1. This drawing is for illustrative purposes only!
2. All testing shall be performed by qualified personnel, with proper personal protective equipment.
3. Installation shall comply with NEC 690 and all applicable local, state, and national codes and standards.
4. Equipment labels shall be in accordance with NEC 690 and Xcel Energy standards.
5. 24/7 unescorted keyless access shall be provided for the meters and AC disconnect.
6. Equipment pad shall contain inverter, grounding transformer, and step-up transformer per project single line diagram.
7. Show all the systems including storage, existing and new (if applicable).
8. Provide fused, visible, lockable disconnect mounted on disconnect pole. Clearly label disconnect per Xcel Energy guidelines.

Abbreviations:
1. FOH: Front of House
2. FSB: Fire Set Backs
3. (E): Existing
4. (N): New
5. PV: Photovoltaic
6. MAX: Maximum
7. OCPD: Overcurrent Protection Device
8. PCC: Point of Common Coupling
9. PoC: Point of DER Connection
10. RPA: Reference Point of Applicability

Customer Name: John Doe
Scale: 1/400

Project: Example Drawings for Dedicated Power Production Facility Interconnection (Stand Alone DER)
Installation Address: 7726 County Road 19, Cottage Grove, MN
GPS: 44.836166, -92.90365
Installer Name and Contact:

System Size: 1000kW AC

Location:
Distance:
# ONE LINE EXAMPLE A
FOR SINGLE INVERTER SYSTEMS

<table>
<thead>
<tr>
<th>PV MODULE</th>
<th>INVERTER</th>
<th>UTILITY DISCONNECT</th>
<th>PV METER</th>
<th>MAIN SERVICE PANEL</th>
<th>INTERCONNECTION METHOD</th>
</tr>
</thead>
</table>

## NOTES:
1. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY!
2. ALL TESTING SHALL BE PERFORMED BY QUALIFIED PERSONNEL, WITH PROPER PERSONAL PROTECTIVE EQUIPMENT
3. THE PRODUCTION METER AND AC DISCONNECT SHOULD BE LOCATED TOGETHER IN A READILY ACCESSIBLE LOCATION WITHIN 10' OF THE MAIN SERVICE METER
4. PV MODULES: 320W
5. AC Disconnect: 240V, 100A FUSIBLE NEMA 3R TYPICALLY INSTALLED AT CUSTOMER DISCRETION FOR INVERTERS THAT ARE LARGE DISTANCE FROM METERING
6. UTILITY AC DISCONNECT VISIBLE-RIASE WINDOW, LOCKABLE, AND READILY ACCESSIBLE PANEL RATING 100A FUSIBLE NEMA 3R
7. STRING 1 = 14 MODULES PER STRING:

## PV SYSTEM:
- Roof Slope: 20°
- Azimuth: 180°
- PV MODULES: 320W
- TOTAL: 14

## INVERTER INFORMATION:
- 3.8kW UL CERTIFIED INVERTER, (1) DC/AC RATIO: 1:1.79

## ABBREVIATIONS:
1. FH: FRONT OF HOUSE
2. FSF: FIRE SET BACKS
3. EX: EXISTING
4. NEW
5. PV: PHOTOVOLTAIC
6. MAX: MAXIMUM
7. OCPD: OVERCURRENT PROTECTION DEVICE
8. PCC: POINT OF COMMON COUPLING
9. PoD: POINT OF DER CONNECTION
10. RPA: REFERENCE POINT OF APPPLICABILITY

## SYSTEM SIZE:
3.8kW AC/4.48kW DC

<table>
<thead>
<tr>
<th>PV MODULE</th>
<th>INVERTER</th>
<th>UTILITY DISCONNECT</th>
<th>PV METER</th>
<th>MAIN SERVICE PANEL</th>
<th>INTERCONNECTION METHOD</th>
</tr>
</thead>
</table>

## STRING 1

- PV MODULES: 320W
- TOTAL: 14

## INVERTER INFORMATION:
- 3.8kW UL CERTIFIED INVERTER, (1) DC/AC RATIO: 1:1.79

## ABBREVIATIONS:
1. FH: FRONT OF HOUSE
2. FSF: FIRE SET BACKS
3. EX: EXISTING
4. NEW
5. PV: PHOTOVOLTAIC
6. MAX: MAXIMUM
7. OCPD: OVERCURRENT PROTECTION DEVICE
8. PCC: POINT OF COMMON COUPLING
9. PoD: POINT OF DER CONNECTION
10. RPA: REFERENCE POINT OF APPPLICABILITY

## SYSTEM SIZE:
3.8kW AC/4.48kW DC
1. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY!
2. ALL TESTING SHALL BE PERFORMED BY QUALIFIED PERSONNEL, WITH PROPER PERSONAL PROTECTIVE EQUIPMENT
3. THE PRODUCTION METER AND AC DISCONNECT SHOULD BE LOCATED TOGETHER IN A READILY ACCESSIBLE LOCATION WITHIN 10' OF THE MAIN SERVICE METER
4. 24/7 UNESCORTED KEYLESS ACCESS SHALL BE PROVIDED FOR THE METERS AND AC DISCONNECT
5. UTILITY AC DISCONNECT SHOULD BE LOCATED WITHIN 10 FEET OF THE MAIN SERVICE METER
6. NOTE ALL THE APPLICABLE NEC CODES
7. SHOW ALL THE SYSTEMS INCLUDING STORAGE, EXISTING AND NEW (IF APPLICABLE)
8. SERVICES LESS THAN 320A WILL USE SELF-CONTAINED MAIN SERVICE METERS. 320A SERVICES MUST INDICATE WHETHER THE METERING WILL BE SELF-CONTAINED OR TRANSFORMER METERED. ALL SERVICES 400A OR GREATER MUST BE TRANSFORMER METERED

---

### PV SYSTEM:
- ROOF SLOPE: 20°
- AZIMUTH: 180°
- PV MODULES: 320W
- TOTAL: 32
- MODULES PER STRING: 14

### INVERTER INFORMATION:
- 3.8kW UL CERTIFIED INVERTER, (3) DC/AC RATIO: 1.179

### RACK CONFIGURATION:
- SAME AS THE FIRST INVERTER
- SAME AS THE FIRST STRING

### NOTES:
- THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY!
- ALL TESTING SHALL BE PERFORMED BY QUALIFIED PERSONNEL, WITH PROPER PERSONAL PROTECTIVE EQUIPMENT
- THE PRODUCTION METER AND AC DISCONNECT SHOULD BE LOCATED TOGETHER IN A READILY ACCESSIBLE LOCATION WITHIN 10' OF THE MAIN SERVICE METER
- UTILITY AC DISCONNECT SHOULD BE LOCATED WITHIN 10 FEET OF THE MAIN SERVICE METER
- NOTE ALL THE APPLICABLE NEC CODES
- SHOW ALL THE SYSTEMS INCLUDING STORAGE, EXISTING AND NEW (IF APPLICABLE)
- SERVICES LESS THAN 320A WILL USE SELF-CONTAINED MAIN SERVICE METERS. 320A SERVICES MUST INDICATE WHETHER THE METERING WILL BE SELF-CONTAINED OR TRANSFORMER METERED. ALL SERVICES 400A OR GREATER MUST BE TRANSFORMER METERED

### PV SYSTEM:
- 24/7 UNESCORTED KEYLESS ACCESS SHALL BE PROVIDED FOR THE METERS AND AC DISCONNECT
- UTILITY AC DISCONNECT SHOULD BE LOCATED WITHIN 10 FEET OF THE MAIN SERVICE METER
- NOTE ALL THE APPLICABLE NEC CODES
- SHOW ALL THE SYSTEMS INCLUDING STORAGE, EXISTING AND NEW (IF APPLICABLE)
- SERVICES LESS THAN 320A WILL USE SELF-CONTAINED MAIN SERVICE METERS. 320A SERVICES MUST INDICATE WHETHER THE METERING WILL BE SELF-CONTAINED OR TRANSFORMER METERED. ALL SERVICES 400A OR GREATER MUST BE TRANSFORMER METERED

### ABBREVIATIONS:
- FOH: FRONT OF HOUSE
- FSB: FIRE SET BACKS
- (E): NEW
- PV: PHOTOVOLTAIC
- MAX: MAXIMUM
- OCPD: OVERCURRENT PROTECTION DEVICE
- PCC: POINT OF COMMON COUPLING
- PoC: POINT OF DER CONNECTION
- RPA: REFERENCE POINT OF APPLICABILITY

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### SYSTEM SIZE:
- 11.4kW AC/13.44kW DC
1. This drawing is for illustrative purposes only!

2. All testing shall be performed by qualified personnel, with proper personal protective equipment.

3. The production meter and AC disconnect should be located together in a readily accessible location within 10' of the main service meter.

4. 24/7 unescorted keyless access shall be provided for the meters and AC disconnect.

5. Utility AC disconnect should be located within 10' of the main service meter.

6. Note all the applicable NEC codes.

7. Show all the systems including storage, existing and new (if applicable).

8. Services <320A will use self-contained main service meters. 320A services must indicate whether the metering will be self-contained or transformer metered. All services 400A or greater must be transformer metered.

**Abbreviations:**
1. FOH: FRONT OF HOUSE
2. FSB: FIRE SET BACKS
3. (E): EXISTING
4. (N): NEW
5. PV: PHOTOVOLTAIC
6. MAX: MAXIMUM
7. OCPD: OVERCURRENT PROTECTION DEVICE
8. PCC: POINT OF COMMON CouPLING
9. PoC: POINT OF DER CONNECTION
10. RPA*: REFERENCE POINT OF APPLICABILITY

**Notes:**
1. This drawing is for illustrative purposes only!
2. All testing shall be performed by qualified personnel, with proper personal protective equipment.
3. The production meter and AC disconnect should be located together in a readily accessible location within 10' of the main service meter.
4. 24/7 unescorted keyless access shall be provided for the meters and AC disconnect.
5. Utility AC disconnect should be located within 10' of the main service meter.
6. Note all the applicable NEC codes.
7. Show all the systems including storage, existing and new (if applicable).
8. Services <320A will use self-contained main service meters. 320A services must indicate whether the metering will be self-contained or transformer metered. All services 400A or greater must be transformer metered.

**System Size:**
1000 kW AC/1344.00kW DC
1. All plaques and signage required by 2014 NEC 690 will be installed as required.
2. Labels, warnings, and markings shall comply with ANSI Z535.4.
3. A permanent plaque or directory shall be installed providing the location of the service disconnecting means if not in the same location in compliance with NEC 690.56(B).
4. When energy storage systems (ESS) are present, labeling indicating this should be included. If additional disconnects are required, these should also be labeled for the ESS as well.

**NOTES:**

### Label Locations/Details

<table>
<thead>
<tr>
<th>#</th>
<th>Label Locations/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Production Meter</td>
</tr>
<tr>
<td>2</td>
<td>PV System Utility AC Disconnect, Main Service Disconnect</td>
</tr>
<tr>
<td>3</td>
<td>DC BUS, DC Disconnect, Inverter(s)</td>
</tr>
<tr>
<td>4</td>
<td>PV System Utility AC Disconnect, Main Service Disconnect</td>
</tr>
<tr>
<td>5</td>
<td>DC BUS, DC Disconnect, Inverter(s)</td>
</tr>
<tr>
<td>6</td>
<td>PV System Utility AC Disconnect, PV-AC Disconnect load side and line side</td>
</tr>
<tr>
<td>7</td>
<td>PV-AC Disconnect</td>
</tr>
<tr>
<td>8</td>
<td>PV System Utility AC Disconnect</td>
</tr>
<tr>
<td>9</td>
<td>PV System DC Disconnect</td>
</tr>
<tr>
<td>10</td>
<td>PV System Utility AC Disconnect</td>
</tr>
<tr>
<td>11</td>
<td>Main Service Panel (House/Area Panel), Production meter</td>
</tr>
<tr>
<td>12</td>
<td>Main Service Panel (House/Area Panel), Production meter</td>
</tr>
<tr>
<td>13</td>
<td>PV-AC Disconnect, AC Panel combiner, Production meter</td>
</tr>
<tr>
<td>14</td>
<td>PV-AC Disconnect, AC Panel combiner, Production meter</td>
</tr>
</tbody>
</table>

**SYSTEM SIZE:**

3.8kW AC/4.48kW DC