

Valley County Planning and Zoning Department
219 North Main
Cascade, ID 83611

06/25/26

Please find the below outline for a proposed solar ground mount project at the Wipf Mark residence at 14110 Norwood Road, McCall ID 83638, APN: RP18N03E283605. This outline is for the purpose of approval for a conditional use permit.

Below is our detailed project description:

Array Details:

- Installation of a ground mount PV array consisting of (54) REC Solar REC460AA Pure-RX (460W) modules in three strings of 18, arranged across two pole-mounted structures
- Array tilt: 45 degrees; azimuth: 180 degrees (south-facing)
- Array dimensions: approximately 51' 3" long × 10' 11" wide per structure
- Array's front edge clearance from ground: 6' above grade; top height designed to sit above McCall's 120 PSF ground snow load to ensure year-round production
- Estimated annual system output: 29,495 kWh
- PV system will operate in conjunction with Idaho Power's electrical grid and follow Idaho Power Customer Generation Guidelines for operation
- Inverters/equipment: (3) Tesla Solar 7.6 kW Inverters, (1) Tesla Powerwall 3, (1) Tesla Backup Gateway 3
- Electrical service size: 200 AMP
- All equipment to be installed is UL listed and compliant to NEC 2023 and IFC 2018 regulations
- Array installed on homeowner's private property

Construction/Installation Details:

- Three 48"×48" rectangular concrete footings at 6' depth with (16) #5 vertical rebar and #3 horizontal rebar at 10" O.C.; three 10" Pipe Sch 40 steel poles with 19.75' span between poles
- DC conduit trenching approximately 450' from the array to the house, minimum 18" depth
- Estimated installation time frame is one to two weeks
- Installation to be overseen by Idaho licensed Journeyman Electrician under RevoluSun Mountain States license ELC 039193. Installed per manufacturer guidelines and jurisdictional requirements to meet NEC 2023 and IFC 2018 code requirements
- Dust, noise, and disruption is minimal and will occur during normal working hours

Project Purpose:

- Generate solar power to offset the homeowner's electrical consumption and utility use

- Solar generation to provide power and whole-home battery backup during any electrical outages via Tesla Powerwall 3 and Tesla Backup Gateway 3

Please find supporting documentation:

- PV System Plan Set (RevoluSun Mountain States, 06/25/2026): cover page, general notes, site plan, electrical plan, assembly details, line diagrams, and placards
- Equipment datasheets: REC Solar REC460AA Pure-RX, Tesla Solar Inverter, Tesla Powerwall 3, Tesla Backup Gateway 3
- Documentation requested but not applicable to our installation
 - Landscaping plan - no landscaping to occur
 - Lighting plan - no lighting to occur
 - Site grading - no grading or excavation beyond footing installation
 - No irrigation changes - does not irrigate

Project Purpose from property owner:

Although the existing property has sufficient open land that could accommodate either a roof-mount or ground-mount solar system, the homeowner is requesting approval for a ground-mount solar system for the following reasons:

1. The 24.840 kW ground mount system (54 modules) is sized to provide meaningful offset of the property's electrical load across the primary residence and its accessory structures. A ground-mount configuration allows optimal south-facing orientation at a 45-degree tilt, maximizing annual energy production — estimated at 29,495 kWh per year — in McCall's high-latitude, high-snow-load environment.
2. McCall, Idaho experiences a ground snow load of 120 PSF — among the highest in the region. The ground mount structure has been specifically engineered with 10" Sch 40 steel pipe poles and 48"×48" concrete footings at 6' depth to withstand these extreme snow and wind loads. The elevated design (6' front clearance) ensures the array remains above typical snow accumulation for consistent year-round production.
3. The ground mount system can be independently maintained and serviced without requiring roof access or coordinating around roofing work. Should roof replacement be needed at any point in the future, the solar array will not need to be removed and reinstalled, saving significant cost and disruption over the life of the system.
4. The addition of a Tesla Powerwall 3 and Tesla Backup Gateway 3 will provide whole-home battery backup power during utility outages. This level of energy independence and resilience is especially important in McCall's remote environment where grid outages can be prolonged during winter weather events.

Valley County Planning and Zoning

PO Box 1350 • 700 South Main Street
Cascade, ID 83611-1350



Phone: 208-382-7115
Email: cherrick@valleycountyid.gov

DISCLAIMER

Pre-application meetings with Valley County Staff are required prior to submitting an application.

Please note that information provided in a pre-application meeting or over the phone does not guarantee approval by either the Planning and Zoning Commission nor the Valley County Board of Commissioners. Planning and Zoning staff cannot give you legal advice. You should seek the advice of an attorney if you have specific legal questions regarding the sufficiency of your application.

Sincerely,

A handwritten signature in black ink, appearing to read "Cynda Herrick".

Cynda Herrick, AICP, CFM
Planning and Zoning Director

Valley County Code:

9-5H-1: PREAPPLICATION CONFERENCE:

A. Conference Required: Prior to the formal filing of an application, the applicant shall confer with the administrator or staff to obtain proper forms, information, and guidance.

B. Familiarity With Standards, Goals And Objectives: The applicant shall familiarize himself with the standards of this title, the goals and objectives of the comprehensive plan, and review procedure and submittal requirements, which will affect the proposal.

C. Meeting At Site Or Other Investigations: The preapplication conference may include a meeting at the proposed site and other investigations deemed necessary by the administrator or staff.

Conditional Use Permit Process

- ☐ **Pre-Application Conference with PZ Director Required – 208-382-7115.**
- ☐ **Contact Road & Bridge Director for pre-application appointment – 208-382-7195.**
- ☐ **Submit Application**
 - **Deadline is 45 days prior to a PZ Commission meeting.**
 - **Proposals within an impact area must be submitted 60 days prior to a public hearing date to meet requirements in VCC Title 7**
 - **Public Hearings are typically held on the 2nd Thursday of every month, starting at 6:00 p.m.**
- ☐ **Staff will review, place on agenda, and notice.**
- ☐ **PZ Staff prepares a Staff Report.**
- ☐ **Public Hearing:**
 - Staff Report to Commissioners, Exhibits, and Questions for Staff
 - Presentation by Applicant
 - Testimony of Proponents.
 - Testimony of Undecided
 - Testimony of Opponents
 - Rebuttal by the Applicant
 - If new information is provided, must reopen for other testimony.
 - The public hearing is closed for Commissioner deliberation
 - Commissions approve a motion or table to a future date for more information.
 - There is a 10-day appeal period to the Board of County Commissioners in accordance with Valley County Code 9-5H-12.

Valley County Planning and Zoning Department

700 S. Main ST | PO Box 1350
 Cascade, ID 83611
www.co.valley.id.us
cherrick@valleycountyid.gov
 208-382-7115



Conditional Use Permit Application

TO BE COMPLETED BY THE PLANNING AND ZONING DEPARTMENT

☐ Check # _____ or ☐ Cash or ☐ Card

FILE # 26-019

FEE \$ 250.00

ACCEPTED BY Hannah Smith

DEPOSIT _____

CROSS REFERENCE FILE(S): _____

DATE 6/29/2026

PROPOSED USE: Solar Panel

When an application has been submitted, it will be reviewed in order to determine compliance with application requirements.
 A hearing date will be scheduled only after an application has been accepted as complete or if applicant requests the hearing in writing.

Applicant's Signature: _____

DocuSigned by:

 2026/07/08 09:57:18M

Date: 6/29/2026

By signing, you are agreeing to allow County staff to inspect the property identified in the application.

The following must be completed and submitted with the conditional use permit application:

- ☐ A **detailed project description** disclosing the purpose, strategy, and time frame of construction. Include a phasing plan if appropriate. Address fire mitigation, utilities, fencing, access, emissions, dust, noise, and outside storage.
- ☐ A **plot plan**, drawn to scale, showing the boundaries, dimensions, area of lot, existing and proposed utilities, streets, easements, parking, setbacks, and buildings.
- ☐ A **landscaping plan**, drawn to scale, showing elements such as trees, shrubs, ground covers, and vines. Include a plant list indicating the size, quantity, location and name (both botanical and common) of all plant material to be used.
- ☐ A **site grading plan** clearly showing the existing site topography and detailing the best management practices for surface water management, siltation, sedimentation, and blowing of dirt and debris caused by grading, excavation, open cuts, side slopes, and other site preparation and development.
- ☐ A **lighting plan**.
- ☐ **Names and addresses of property owners within 300 feet of the property lines**. Information can be obtained through the GIS Portal at www.co.valley.id.us. Only one copy of this list is required. Staff may notice more than 300 feet based on adjacent ownership and potential for impacts.
- ☐ **Three (3) copies** of the application, project description, plot plan, landscaping plan, grading plan, and impact report are required.
- ☐ **A Development Agreement may be required**. Possible road mitigation should be discussed with the Valley County Road and Bridge Director, 208-382-7195.

We recommend you review the Valley County Code online at www.co.valley.id.us
 or at the Planning & Zoning Office at 219 North Main Street, Cascade, Idaho

Subject to Idaho Statute Title 55 Chapter 22 Underground Facilities Damage Prevention.

Date of Pre-Application Meeting with Staff: 6/26/26

Staff Name(s): Hannah Smith

CONTACT INFORMATION

APPLICANT Mark Wipf PHONE 2 [REDACTED]
 Owner ☒ Purchaser ☐ Lessee ☐ Renter ☐

MAILING ADDRESS 14110 Norwood Road, McCall ZIP 83638

EMAIL [REDACTED]

PROPERTY OWNER Mark Wipf

MAILING ADDRESS 14110 Norwood Road, McCall ZIP 83638

EMAIL [REDACTED]

AGENT / REPRESENTATIVE RevoluSun Mountain States PHONE 208-661-2297

MAILING ADDRESS 457 Steelhead Way, Boise ID ZIP 83704

EMAIL idahopermits@revolusun.com **Please use this email address**

CONTACT PERSON (if different from above) Claire Cameron

MAILING ADDRESS same as above ZIP

EMAIL claire.alivia@revolusun.com PHONE

PROPERTY INFORMATION

ADDRESS OF SUBJECT PROPERTY 14110 NORWOOD RD, MCCALL, ID 83638

PROPERTY DESCRIPTION (either lot, block & subdivision name or attach a recorded deed with a metes and bounds description.)

108300 Lakefork Area Subdivisions

TAX PARCEL NUMBER(S) RP 18N03E283605

Quarter Section 28 Township 18N Range 3E

1. PROPOSED USE: Residential ☒ Civic or Community ☐ Commercial ☐ Industrial ☐

2. SIZE OF PROPERTY 20 AC Acres ☒ or Square Feet ☐

3. EXISTING LAND USES AND STRUCTURES ON THE PROPERTY ARE AS FOLLOWS:

Shop and RV lot

4. ARE THERE ANY KNOWN HAZARDS ON OR NEAR THE PROPERTY (such as canals, hazardous material spills, and/or soil or water contamination)? If so, describe and give location: None

5. ADJACENT PROPERTIES HAVE THE FOLLOWING BUILDING TYPES AND/OR USES:

North Residential

South Residential

East Residential

West Residential

APPLICATION DETAILS

6. MAXIMUM PROPOSED STRUCTURE HEIGHT: 12 ft
7. NON-RESIDENTIAL STRUCTURES OR ADDITIONS (If applicable):
- | | |
|--|---|
| Number of <u>Proposed</u> Structures: <u>2</u> | Number of <u>Existing</u> Structures: _____ |
| <u>Proposed Gross Square Feet</u> | <u>Existing Gross Square Feet</u> |
| 1 st Floor _____ | 1 st Floor _____ |
| 2 nd Floor _____ | 2 nd Floor _____ |
| Total <u>448.24</u> | Total _____ |
- 8a. TYPE OF RESIDENTIAL USE (If applicable): Single family residence ☒ Multiple residences on one parcel ☐
- 8b. TYPE OF STRUCTURE: Stick-built ☐ Manufacture Home ☐ Mobile Home ☐ Tiny Home ☐ Other ☒ Solar Ground Mount
- 8c. SQUARE FOOTAGE OF PROPOSED RESIDENTIAL STRUCTURES (If applicable): N/A
- SQUARE FOOTAGE OF EXISTING RESIDENTIAL STRUCTURES: N/A
- 8d. DENSITY OF DWELLING UNITS PER ACRE: N/A
9. SITE DESIGN:
- Percentage of site devoted to building coverage: N/A
- Percentage of site devoted to landscaping: N/A
- Percentage of site devoted to roads or driveways: N/A
- Percentage of site devoted to other uses: 0.051%, describe: Solar Ground Mount Installation
- Total: 100%**
10. PARKING (If applicable): N/A
- a. Handicapped spaces proposed: _____

b. Parking spaces proposed: _____

c. Number of compact spaces proposed: _____

d. Restricted parking spaces proposed: _____

e. Are you proposing off-site parking: _____

Office Use Only

Handicapped spaces required: _____

Parking spaces required: _____

Number of compact spaces allowed: _____
11. SETBACKS:
- | | <u>BUILDING</u> | <u>Office Use Only</u> | <u>PARKING</u> | <u>Office Use Only</u> |
|-------------|-------------------|------------------------|----------------|------------------------|
| | Proposed | Required | Proposed | Required |
| Front | <u>N 42' -8"</u> | _____ | _____ | _____ |
| Rear | <u>E 812' 10"</u> | _____ | _____ | _____ |
| Side | <u>W 520' 10"</u> | _____ | _____ | _____ |
| Side Street | <u>S 610' 9"</u> | _____ | _____ | _____ |
12. NUMBER OF EXISTING ROADS: N/A Width: _____
- Existing roads will be: Publicly maintained? ☐ Privately Maintained? ☐ or Combination of both? ☐
- Existing road construction: Gravel ☐ Paved ☐ or Combination of both? ☐
13. NUMBER OF PROPOSED ROADS: N/A Proposed width: _____
- Proposed roads: Publicly maintained? ☐ Privately Maintained? ☐ or Combination of both? ☐
- Proposed road construction: Gravel ☐ Paved ☐ or Combination of both? ☐
- Anticipated Trip Generation [Refer to ITE – Trip Generation Manual within Roads Policy Manual] _____
- Primarily heavy truck traffic? Yes ☐ No ☐ Combination ☐

14. ARE SHARED DRIVEWAYS PROPOSED? If so, please explain why. Yes ☐ No ☒

N/A

15. EXISTING UTILITIES ON THE PROPERTY ARE AS FOLLOWS:

Propane, Water, Electrical

16. PROPOSED UTILITIES: None.

Proposed utility easement widths N/A

Locations N/A

17. SEWAGE WASTE DISPOSAL METHOD: Septic ☒ Central Sewage Treatment Facility ☐

Name: _____

18. POTABLE WATER SOURCE: Public ☐ Water Association ☐ Individual Well: ☒

If individual, has a test well been drilled? _____ Depth _____ Flow _____ Purity Verified? _____

Nearest adjacent well _____ Depth _____ Flow _____

19. DRAINAGE (Proposed method of on-site retention): N/A

Any special drains? _____ (Please attach map)

Soil type(s): Archabal loam, 4 to 12 percent slopes

(Information can be obtained from the Natural Resource Conservation Service: websoilsurvey.nrcs.usda.gov)

Stormwater Prevention Management Plan will need approval from Valley County Engineer.

20. IS ANY PORTION OF THE PROPERTY LOCATED IN A FLOODWAY OR 100-YR FLOODPLAIN?

(Information can be obtained from the Planning & Zoning Office) Yes ☐ No ☒

21. DOES ANY PORTION OF THIS PARCEL HAVE SLOPES IN EXCESS OF 15%? Yes ☐ No ☒

22. ARE THERE WETLANDS LOCATED ON ANY PORTION OF THE PROPERTY? Yes ☐ No ☒

23. IS ANY PORTION LOCATED WITHIN 150-FT OF ANY LAKE, POND, RIVER, OR YEAR-ROUND FLOWING CREEK OR STREAM? THIS IS A RIPARIAN AREA AS DEFINED BY VCC 9-6-6.

Yes ☐ No ☒

24. IS THERE ANY SITE GRADING OR PREPARATION PROPOSED? Yes ☐ No ☒

If yes, explain:

25a. ARE THERE ANY EXISTING IRRIGATION SYSTEMS? Yes ☐ No ☒

Are you proposing any alterations, improvements, extensions or new construction? Yes ☐ No ☒

If yes, explain: _____

25b. COMPLETE ATTACHED PLAN FOR IRRIGATION if you have water rights and are in an irrigation district. Submit letter from Irrigation District, if applicable.

26. COMPLETE ATTACHED WEED CONTROL AGREEMENT

27. COMPLETE ATTACHED IMPACT REPORT

Irrigation Plan

(Idaho Code 31-3805)

This land: ☒ Has water rights available to it
☐ Is dry and has no water rights available to it.

Idaho Code 31-3805 states that when all or part of a subdivision is “located within the boundaries of an existing irrigation district or canal company, ditch association, or like irrigation water deliver entity ... **no subdivision plat or amendment to a subdivision plat or any other plat or map recognized by the city or county for the division of land will be accepted, approved, and recorded unless:**”

- A. The appropriate water rights and assessment of those water rights have been transferred from said lands or excluded from an irrigation entity by the owner; or
- B. The owner filing the subdivision plat or amendment to a subdivision plat or map has provided for the division of land of underground tile or conduit for lots of one acre or less or a suitable system for lots of more than one acre which will deliver water to those landowners within the subdivision who are also within the irrigation entity with the appropriate approvals:
 1. For proposed subdivisions located within an area of city impact, both city and county zoning authorities must approve such irrigation system.
 2. For proposed subdivisions outside of negotiated areas of city impact, the delivery system must be approved by the Planning and Zoning Commission and the Board of County Commissioners with the advice of the irrigation entity charged with the delivery of water to said lands (e.g., irrigation district).

To better understand your irrigation request, we need to ask you a few questions. Additional pages can be added. A list of the map requirements follows the short questionnaire. **Any missing information may result in the delay of your request before the Planning and Zoning Commission and ultimately the approval of your irrigation plan by the Board of County Commissioners as part of final plat approval.**

1. Are you within an area of negotiated City Impact? ☐ Yes ☒ NO No
2. What is the name of the irrigation district/company and drainage entities servicing the property?
 Irrigation: N/A
 Drainage: N/A
3. How many acres is the property being subdivided? N/A
4. What percentage of this property has water? N/A
5. How many inches of water are available to the property? N/A
6. How is the land currently irrigated? ☐ surface ☐ sprinkler ☐ irrigation well
☐ above ground pipe ☐ underground pipe
7. How is the land to be irrigated after it is subdivided? ☐ surface ☐ sprinkler ☐ irrigation well
☐ above ground pipe ☐ underground pipe
8. Describe how the head gate/pump connects to the canal and irrigated land and where ditches &/or pipes go.
N/A

9. Is there an irrigation easement(s) on the property? ☐ Yes ☒ No

10. How do you plan to retain storm and excess water on each lot? N/A

11. How do you plan to process this storm water and/or excess irrigation water prior to it entering the established drainage system? (i.e. oil, grease, contaminated aggregates)

N/A

Irrigation Plan Map Requirements

The irrigation plan **must be on a scalable map** and show all of the irrigation system including all supply and drainage structures and easements. Please include the following information on your map:

- ☐ All canals, ditches, and laterals with their respective names.
- ☐ Head gate location and/or point of delivery of water to the property by the irrigation entity.
- ☐ Pipe location and sizes, if any
- ☐ Rise locations and types, if any.
- ☐ Easements of all private ditches that supply adjacent properties (i.e. supply ditches and drainage ways).
- ☐ Slope of the property in various locations.
- ☐ Direction of water flow (use short arrows on your map to indicate water flow direction →).
- ☐ Direction of wastewater flow (use long arrows on your map to indicate wastewater direction →).
- ☐ Location of drainage ponds or swales, if any where wastewater will be retained on property
- ☒ Other information: N/A

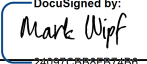
Also, provide the following documentation: N/A

- ☐ Legal description of the property.
- ☐ Proof of ownership.
- ☐ A written response from the irrigation entity and/or proof of agency notification.
- ☐ Copy of any water users' association agreement which shows water schedules and maintenance responsibilities.
- ☐ Copy of all new easements ready for recording (irrigation supply and drainage).
- ☐ If you are in a city area of impact, please include a copy of the approvals by the city planning and zoning commission and city council of your irrigation plan.

=====Applicant Acknowledgement=====

I, the undersigned, agree that prior to the Planning and Zoning Department accepting this application, I am responsible to have all the required information and site plans.

I further acknowledge that the irrigation system, as approved by the Planning and Zoning Commission and ultimately the Board of County Commissioners, must be bonded and/or installed prior to the recording of the plat or building permit.

Signed: 
24097CBB8F87486
Applicant

Date: / /

6/29/2026



VALLEY COUNTY

WEED CONTROL AGREEMENT

It shall be the duty and responsibility of all landowners to control noxious weeds on their land and property, in accordance with Idaho Statute 22-2407.

The purpose of this agreement is to establish a cooperative relationship between Valley County and the undersigned Cooperator to protect the natural and economic values in the Upper Payette River watershed from damages related to the invasion and expansion of infestations of noxious weeds and invasive plants. This is a cooperative effort to prevent, eradicate, contain and control noxious weeds and invasive plants on public and private lands in this area. Factors related to the spread of weeds are not related to ownership nor controllable at agency boundaries. This agreement formalizes the cooperative strategy for management of these weeds addressed in Valley County's Integrated Weed Management Plan.

In this continuing effort to control Noxious Weeds, Valley County Weed Control will consult with the undersigned Cooperator and outline weed identification techniques, present optional control methods and recommend proper land management practices.

The undersigned Cooperator acknowledges that he/she is aware of any potential or real noxious weed problems on his/her private property and agrees to control said weeds in a timely manner using proper land management principles.

Valley County Weed Department can be contacted at 208-382-7199.

By: Mark Wipf
24097CB88FB74B6
Applicant

By: Valley County Weed Supervisor

Date: 6/29/2026

IMPACT REPORT (from Valley County Code 9-5-3-D)

You may add information to the blanks below or attach additional sheets.

❖ **An impact report shall be required for all proposed Conditional Uses.**

❖ **Thoroughly answer all questions. Mark N/A if the question is not applicable to your application.**

❖ **The impact report shall address potential environmental, economic, and social impacts and how these impacts are to be minimized as follows:**

1. Traffic volume, character, and patterns including adequacy of existing or proposed street width, surfacing, alignment, gradient, and traffic control features or devices, and maintenance. Contrast existing with the changes the proposal will bring during construction and after completion, build-out, or full occupancy of the proposed development. Include pedestrian, bicycle, auto, and truck traffic.

N/A

2. Provision for the mitigation of impacts on housing affordability.

N/A

3. Noise and vibration levels that exist and compare to those that will be added during construction, normal activities, and special activities. Include indoor and outdoor, day and night variations.

Construction related noise only. Daytime construction for one week. Noise primarily resulting from crews digging trenches and concrete piles for ground mount solar array. No noise or vibration increase after installation.

4. Heat and glare that exist and that might be introduced from all possible sources such as autos in parking areas, outdoor lights, water or glass surfaces, buildings or outdoor activities.

Glare from solar modules. Minimal impact. Glare and visibility of the array will be reduced/screened by surrounding vegetation, and fully blocked from the road.

5. Particulate emissions to the air including smoke, dust, chemicals, gasses, or fumes, etc., both existing and what may be added by the proposed uses.

Minimal dust production possible during installation. No increase in any of the above factors after completion of installation.

6. Water demand, discharge, supply source, and disposal method for potable uses, domestic uses, and fire protection. Identify existing surface water drainage, wetlands, flood prone areas and potential changes. Identify existing ground water and surface water quality and potential changes due to this proposal.

N/A

7. Fire, explosion, and other hazards existing and proposed. Identify how activities on neighboring property may affect the proposed use.

Equipment installed to comply with NEC and IFC standards. No affect from or on neighboring properties.

8. Removal of existing vegetation or effects thereon including disturbance of wetlands, general stability of soils, slopes, and embankments and the potential for sedimentation of disturbed soils.

Minimal removal of existing vegetation, no wetland disturbance.

9. Include practices that will be used to stabilize soils and restore or replace vegetation.

N/A

10. Soil characteristics and potential problems in regard to slope stability, embankments, building foundation, utility and road construction. Include suitability for supporting proposed landscaping.

N/A

11. Site grading or improvements including cuts and fills, drainage courses and impoundments, sound and sight buffers, landscaping, fencing, utilities, and open areas.

N/A

12. Visibility from public roads, adjoining property, and buildings. Include what will be done to reduce visibility of all parts of the proposal but especially cuts and fills and buildings. Include the impacts of shadows from new features on neighboring property.

No shading on neighboring property. Cuts and fills not visible. Visibility from the road to be obstructed by surrounding vegetation and the existing home. Visibility to neighboring properties to be obstructed by surrounding vegetation. See planset for site plan, landscaping plan, and full array dimensions.

13. Reasons for selecting the particular location including topographic, geographic and similar features, historic, adjoining land ownership or use, access to public lands, recreation, utilities, streets, etc., in order to illustrate compatibility with and opportunities presented by existing land uses or character.

N/A

14. Approximation of increased revenue from change in property tax assessment, new jobs available to local residents, and increased local expenditures.

N/A

15. Approximation of costs for additional public services, facilities, and other economic impacts.

N/A

16. State how the proposed development will impact existing developments providing the same or similar products or services.

N/A

17. State what natural resources or materials are available at or near the site that will be used in a process to produce a product and the impacts resulting from the depletion of the resource. Describe the process in detail and describe the impacts of each part.

N/A

18. What will be the impacts of a project abandoned at partial completion?

N/A

19. Number of residential dwelling units, other buildings and building sites, and square footage or gross non-residential floor space to be available.

N/A

20. Stages of development in geographic terms and proposed construction time schedule.

Construction time of one week- occurring within the 2026 building season

21. Anticipated range of sale, lease or rental prices for dwelling units, building or other site, or non-residential floor space in order to insure compatibility with adjacent land use and development.

N/A

Property Tax Exemption

New and expanding business **may** qualify for a property tax exemption for up to 5 years by meeting the qualifications in accordance with Idaho Code§ 63-602NN

Application must be filed with the Valley County Assessor's office before construction begins.

Protocols for qualifying property exemption in Valley County, Idaho:

- Application must be received prior to the start of construction (ex. Building Permits, excavation)
- Term of exemption, not to exceed 5 years, will be up to the discretion of the Valley County Board of Commissioners
- Retail sales business do not qualify
- Multi use may qualify excluding retail sale area
- Housing
 - Multi-family housing must have 5 units or more per structure.
 - Multi-Family housing units may qualify if more than one structure is built totaling 5 or more units
 - For local housing only (workforce)
 - Short term rentals not allowed
 - Units cannot be individually sold (e.g., no condominiums)
- Remodel and/or additions to existing businesses
 - Only the area of remodel/addition may qualify for exemption
 - Retail sales additions/remodel will not qualify

For further information regarding the 63-602NN application process and instructions, please contact the Valley County Assessor's office at 208-382-7126.

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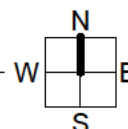
6

STC:	68	X	360	W	=	24.480	KW
PTC:	68	X	337.45	W	=	22.947	KW
68	PANASONIC EVPV360PK BLACK						
2	TESLA POWERWALL 3 1707000-xx-y						

SCALE: NOT TO SCALE



SCALE: NOT TO SCALE



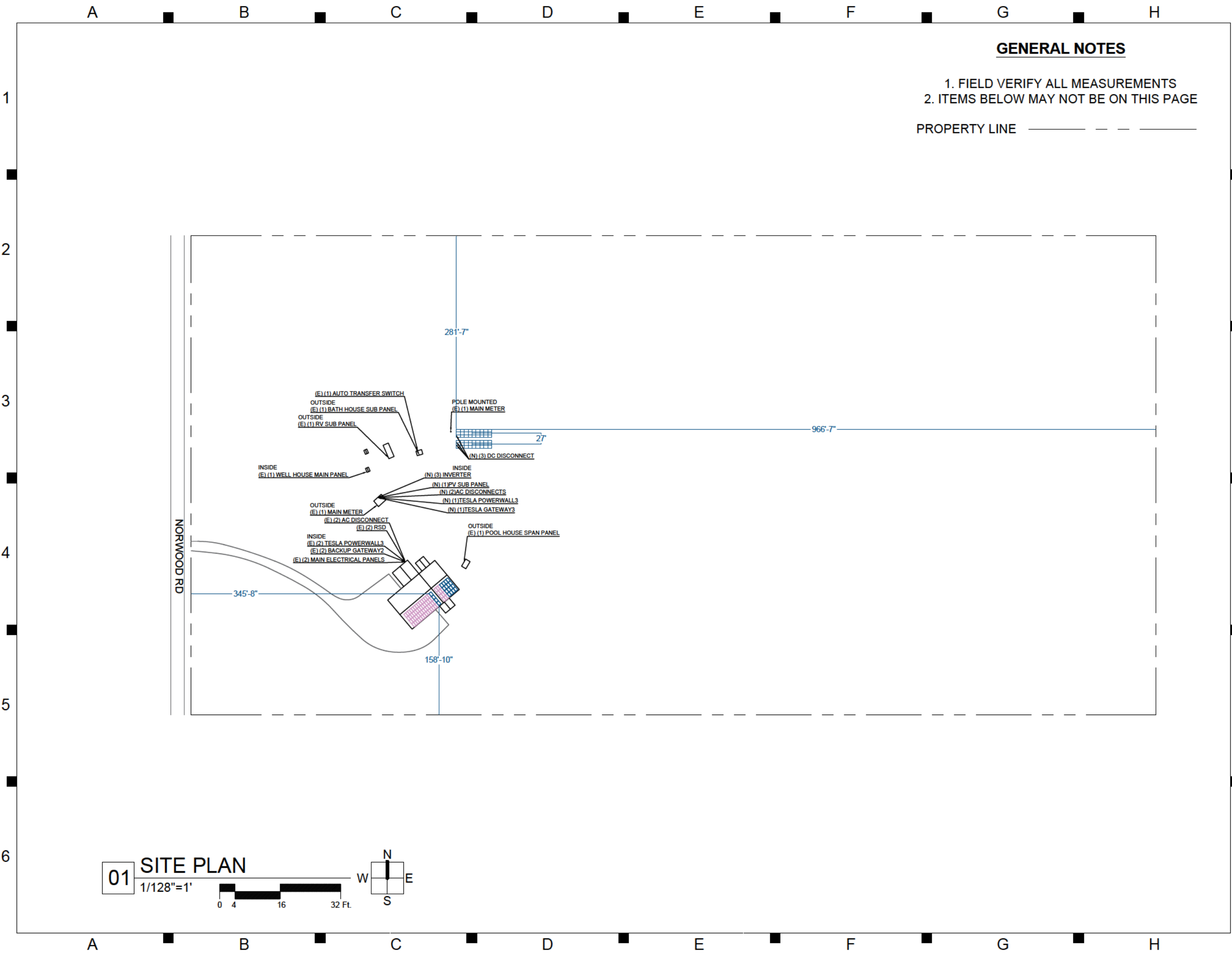
SHEET NUMBER	SHEET TITLE
T-001	COVER PAGE
G-002	GENERAL NOTES
A-101	SITE PLAN
A-102	ELECTRICAL PLAN
A-103	SOLAR ATTACHMENT PLAN
E-601.1	LINE DIAGRAM
E-601.2	LINE DIAGRAM
E-601.3	LINE DIAGRAM
E-602	PLACARDS
S-501.1	ASSEMBLY DETAILS
S-501.2	ASSEMBLY DETAILS
R-001	RESOURCE DOCUMENT
R-002	RESOURCE DOCUMENT
R-003	RESOURCE DOCUMENT
R-004	RESOURCE DOCUMENT
R-005	RESOURCE DOCUMENT
R-006	RESOURCE DOCUMENT
R-007	RESOURCE DOCUMENT

BUILDING: IBC2018, RC2018
ELECTRICAL: NEC2023
FIRE: IFC2018



REVISIONS

T-001.00



CONTRACTOR

REVOLUSUN MOUNTAIN STATES

PHONE: (208) 315-4082
ADDRESS: 457 N STEELHEAD WAY
BOISE, ID 83704

LIC. NO.: # ECL 0393193

UNAUTHORIZED USE OF THIS
DRAWING SET WITHOUT WRITTEN
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PROSECUTIONS.

NEW PV SYSTEM: 34.040 kWp

WIPF MARK
RESIDENCE
14110 NORWOOD RD, MCCALL, ID
83638

APN: RP18N03E283605

ENGINEER OF RECORD

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

SITE PLAN

DATE: 06/25/2026

CHECKED BY:

REVISIONS

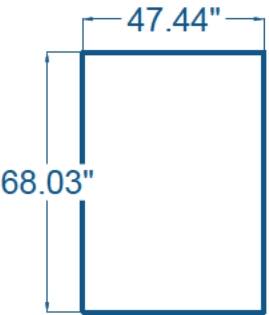
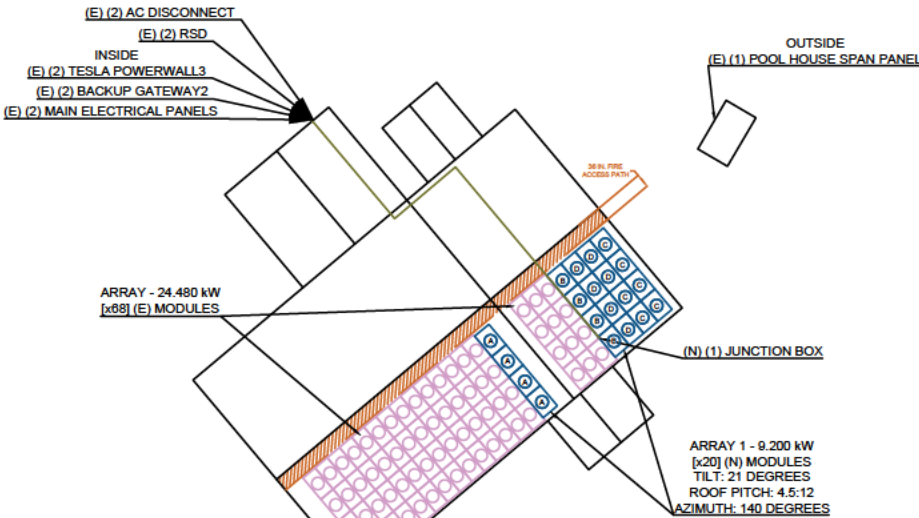
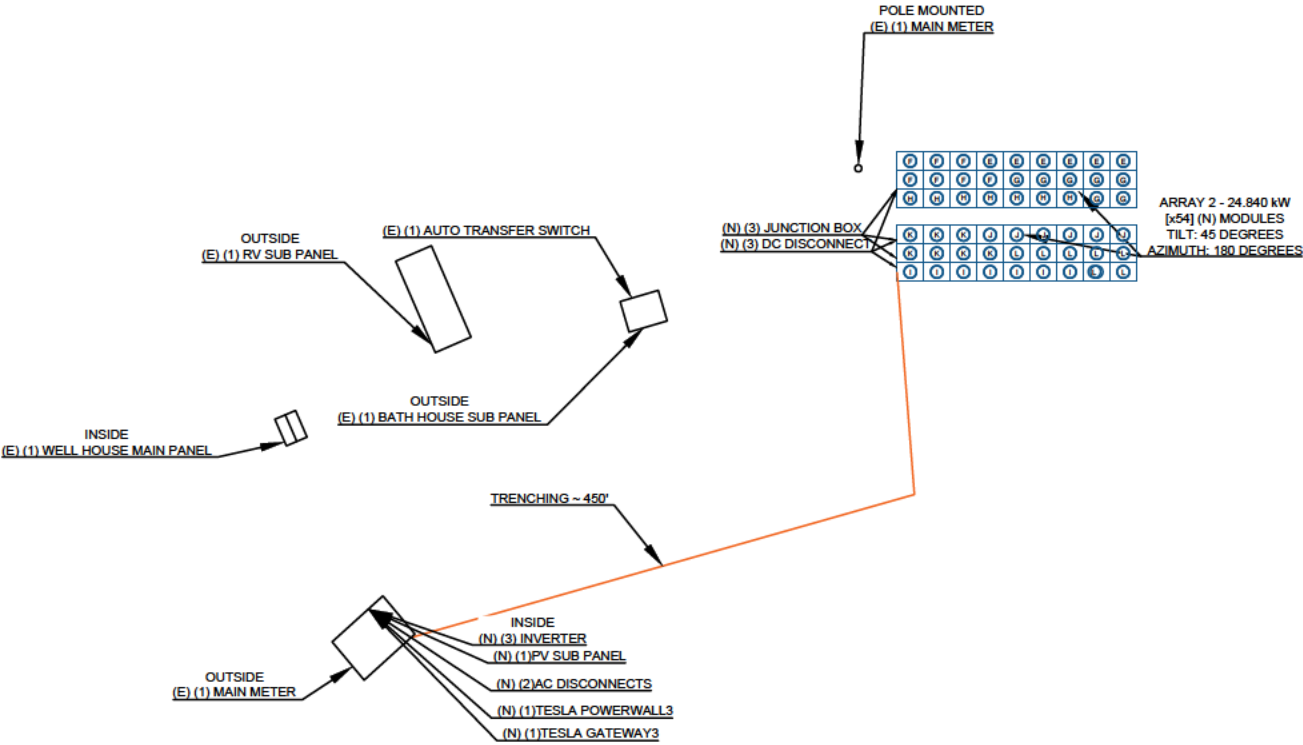
A-101.00

NOTE: DETACHED NONHABITABLE STRUCTURE
EXEMPT FROM ROOFTOP SETBACKS PER 2018
IRC R324.6 EXCEPTION(1)

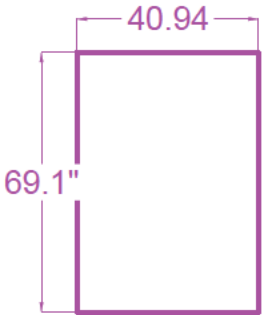
GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

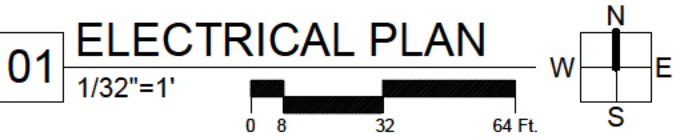
FIRE CLEARANCE	
CONDUIT	
MODULE STRING	(A)
MODULE STRING	(B)
MODULE STRING	(C)
MODULE STRING	(D)
MODULE STRING	(E)
MODULE STRING	(F)
MODULE STRING	(G)
MODULE STRING	(H)
MODULE STRING	(I)
MODULE STRING	(J)
MODULE STRING	(K)
MODULE STRING	(L)
TRENCHING	



(N)MODULE:
REC SOLAR
REC460AA PURE-RX
460 WATTS



(E)MODULE:
PANASONIC
EVPV360PK BLACK
360 WATTS



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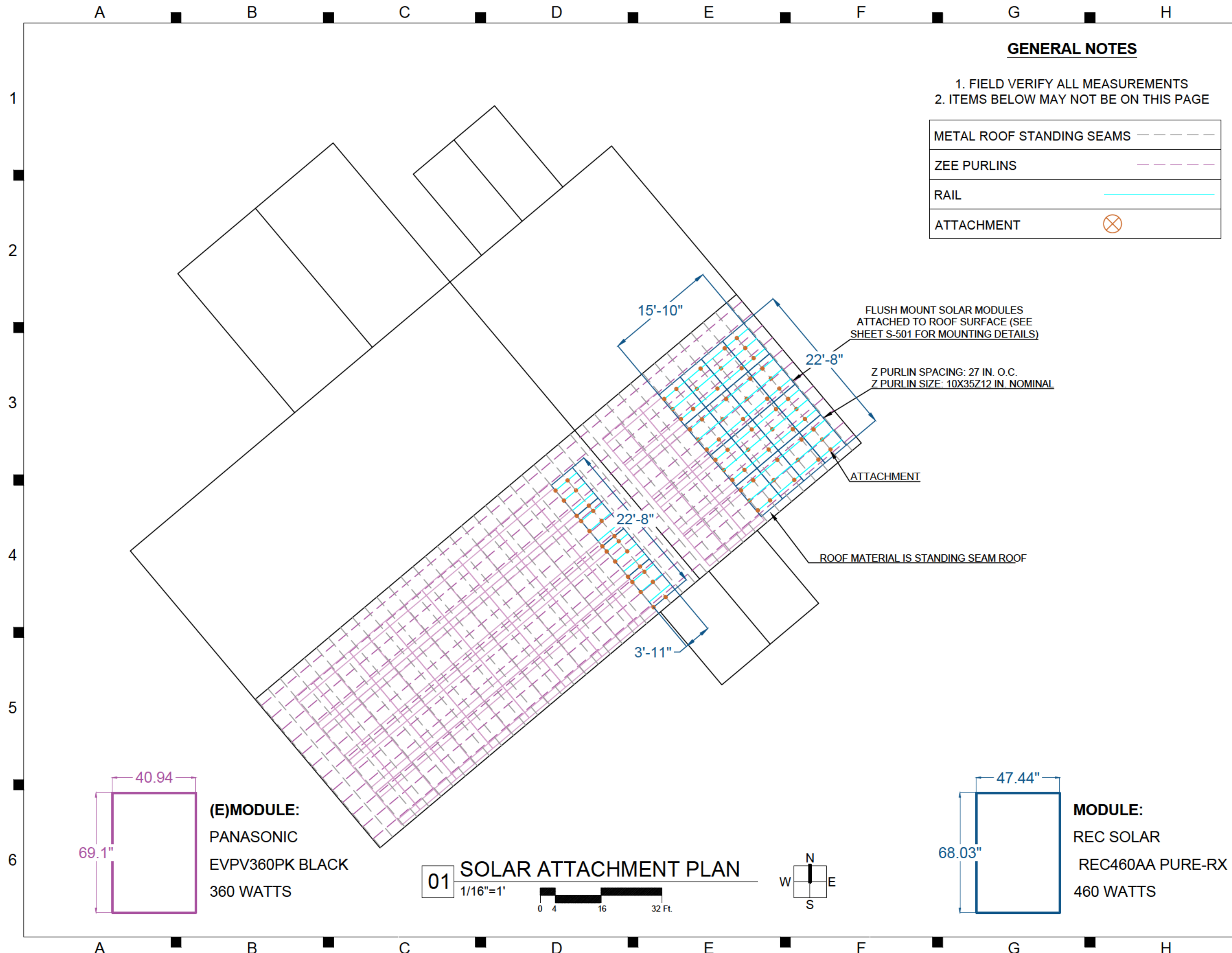
ELECTRICAL PLAN

DATE: 06/25/2026

CHECKED BY:

REVISIONS

A-102.00



GENERAL NOTES

- 1. FIELD VERIFY ALL MEASUREMENTS
- 2. ITEMS BELOW MAY NOT BE ON THIS PAGE

METAL ROOF STANDING SEAMS	----
ZEE PURLINS	----
RAIL	----
ATTACHMENT	⊗

FLUSH MOUNT SOLAR MODULES
ATTACHED TO ROOF SURFACE (SEE
SHEET S-501 FOR MOUNTING DETAILS)

Z PURLIN SPACING: 27 IN. O.C.
Z PURLIN SIZE: 10X35Z12 IN. NOMINAL

ATTACHMENT

ROOF MATERIAL IS STANDING SEAM ROOF



CONTRACTOR

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ENGINEER OF RECORD

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

**SOLAR ATTACHMENT
PLAN**

DATE: 06/25/2026

CHECKED BY:

REVISIONS

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1

2

3

4

5

6

CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS																	
ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	EGC	TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)		BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL	
1	1	10 AWG THWN-2, COPPER	0.75" DIA EMT	4	N/A	12 AWG THWN-2, COPPER	0.96	31 °C	0.80	8.88	A	11.10	A	40	30.72	75°C	35A
2	1	10 AWG THWN-2, COPPER	0.75" DIA EMT	6	N/A	12 AWG THWN-2, COPPER	0.96	31 °C	0.80	8.88	A	11.10	A	40	30.72	75°C	35A
3	1	8 AWG THWN-2, COPPER	0.75" DIA EMT	3	40	8 AWG THWN-2, COPPER	0.96	31 °C	1.00	32	A	40.00	A	55	52.80	75°C	50A
4	1	2 AWG THWN-2, COPPER	1.25" DIA EMT	3	125	8 AWG THWN-2, COPPER	0.96	31 °C	1.00	-	A	-	A	130	124.80	75°C	115A
5	1	6 AWG THWN-2, COPPER	0.75" DIA EMT	3	60	8 AWG THWN-2, COPPER	0.96	31 °C	1.00	48	A	60.00	A	75	72.00	75°C	65A
6	1	250 KCMIL AL OR 3/0 CU	2" DIA EMT	3	N/A	6 AWG THWN-2, COPPER	0.96	31 °C	1.00	-	A	-	A	-	-	75°C	-
7	1	250 KCMIL AL OR 3/0 CU	2" DIA EMT	3	N/A	6 AWG THWN-2, COPPER	0.96	31 °C	1.00	-	A	-	A	-	-	75°C	-

INVERTERS SYSTEM SUMMARY#1

	MPPT #G	MPPT #F	MPPT #E	MPPT #4
MODULES IN SERIES	7	7	6	0
STRING VMP	384.30V	384.30V	384.30V	0
STRING IMP	8.38A	8.38A	8.38A	0
STRING VOC	460.60V	460.60V	394.80V	0
STRING MAX VOC	515.87V	515.87V	442.18V	0
STRING ISC	8.88A	8.88A	8.88A	0
ARRAY STC POWER	34.040KW			
ARRAY PTC POWER	32.471KW			
MAX AC CURRENT	32A			
MAX AC POWER	7.600KW			
DERATED AC POWER	7.600KW			

INVERTERS SYSTEM SUMMARY#2

	MPPT #H	MPPT #I	MPPT #J	MPPT #4
MODULES IN SERIES	7	7	6	0
STRING VMP	384.30V	384.30V	329.40V	0
STRING IMP	8.38A	8.38A	8.38A	0
STRING VOC	460.60V	460.60V	394.80V	0
STRING MAX VOC	515.87V	515.87V	442.18V	0
STRING ISC	8.88A	8.88A	8.88A	0
ARRAY STC POWER	34.040KW			
ARRAY PTC POWER	32.471KW			
MAX AC CURRENT	32A			
MAX AC POWER	7.600KW			
DERATED AC POWER	7.600KW			

INVERTERS SYSTEM SUMMARY#3

	MPPT #K	MPPT #L	MPPT #3	MPPT #4
MODULES IN SERIES	7	7	0	0
STRING VMP	384.30V	384.30V	0	0
STRING IMP	8.38A	8.38A	0	0
STRING VOC	460.60V	460.60V	0	0
STRING MAX VOC	515.87V	515.87V	0	0
STRING ISC	8.88A	8.88A	0	0
ARRAY STC POWER	34.040KW			
ARRAY PTC POWER	32.471KW			
MAX AC CURRENT	32A			
MAX AC POWER	7.600KW			
DERATED AC POWER	7.600KW			

EXISTING INVERTERS SYSTEM SUMMARY

	MPPT #A	MPPT #C	MPPT #3	MPPT #4
MODULES IN SERIES	4	6	0	0
STRING VMP	219.60V	329.40V	0	0
STRING IMP	8.38A	8.38A	0	0
STRING VOC	263.20V	394.80V	0	0
STRING MAX VOC	294.78V	442.18V	0	0
STRING ISC	8.88A	8.88A	0	0

EXISTING INVERTERS SYSTEM SUMMARY

	MPPT #B	MPPT #D	MPPT #3	MPPT #4
MODULES IN SERIES	4	6	0	0
STRING VMP	219.60V	329.40V	0	0
STRING IMP	8.38A	8.38A	0	0
STRING VOC	263.20V	394.80V	0	0
STRING MAX VOC	294.78V	442.18V	0	0
STRING ISC	8.88A	8.88A	0	0

NEW MODULES

REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING
PM1-74	74	REC SOLAR REC460AA PURE-RX	460W	438.8W	8.88A	8.38A	65.8V	54.9V	-0.26%/°C	20A

NEW INVERTERS

REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	OCPD RATING	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	CEC WEIGHTED EFFICIENCY
I1-3	3	TESLA SOLAR 1538000-xx-y	240V	FLOATING	40A	7600W	32A	15A	600V	97.5%

EXISTING INVERTERS

REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	OCPD RATING	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	CEC WEIGHTED EFFICIENCY
I1-2	3	TESLA POWERWALL 3 1707000-xx-y	240V	FLOATING	60A	11500W	48A	15A	600V	97.5%

EXISTING MODULES

REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING
PM1-68	68	PANASONIC EVPV360PK BLACK	360W	337.45W	11.26A	10.62A	40.6V	33.9V	-0.26%/°C	25A

ASHRAE EXTREME LOW

-37°C (35°F), SOURCE: CITY OF MCCALL (44.8710709, -116.1048080)

ASHRAE 2% HIGH

31°C (87°F), SOURCE: CITY OF MCCALL (44.8710709, -116.1048080)

OCPDS

REF.	QTY.	RATED CURRENT	MAX VOLTAGE
CB1-3	3	40A	240VAC
CB4	1	125A	240VAC
CB5	1	60A	240VAC

NEW SYSTEM SIZE

DC SYSTEM SIZE	34.040 KW
AC SYSTEM SIZE	32.471 KW

EXISTING SYSTEM SIZE

DC SYSTEM SIZE	24.480 KW
AC SYSTEM SIZE	22.947 KW

TOTAL SYSTEM SIZE

DC SYSTEM SIZE	49.320 KW
AC SYSTEM SIZE	46.642 KW

A

B

C

D

E

F

G

H



CONTRACTOR

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APN: RP18N03E283605

ENGINEER OF RECORD

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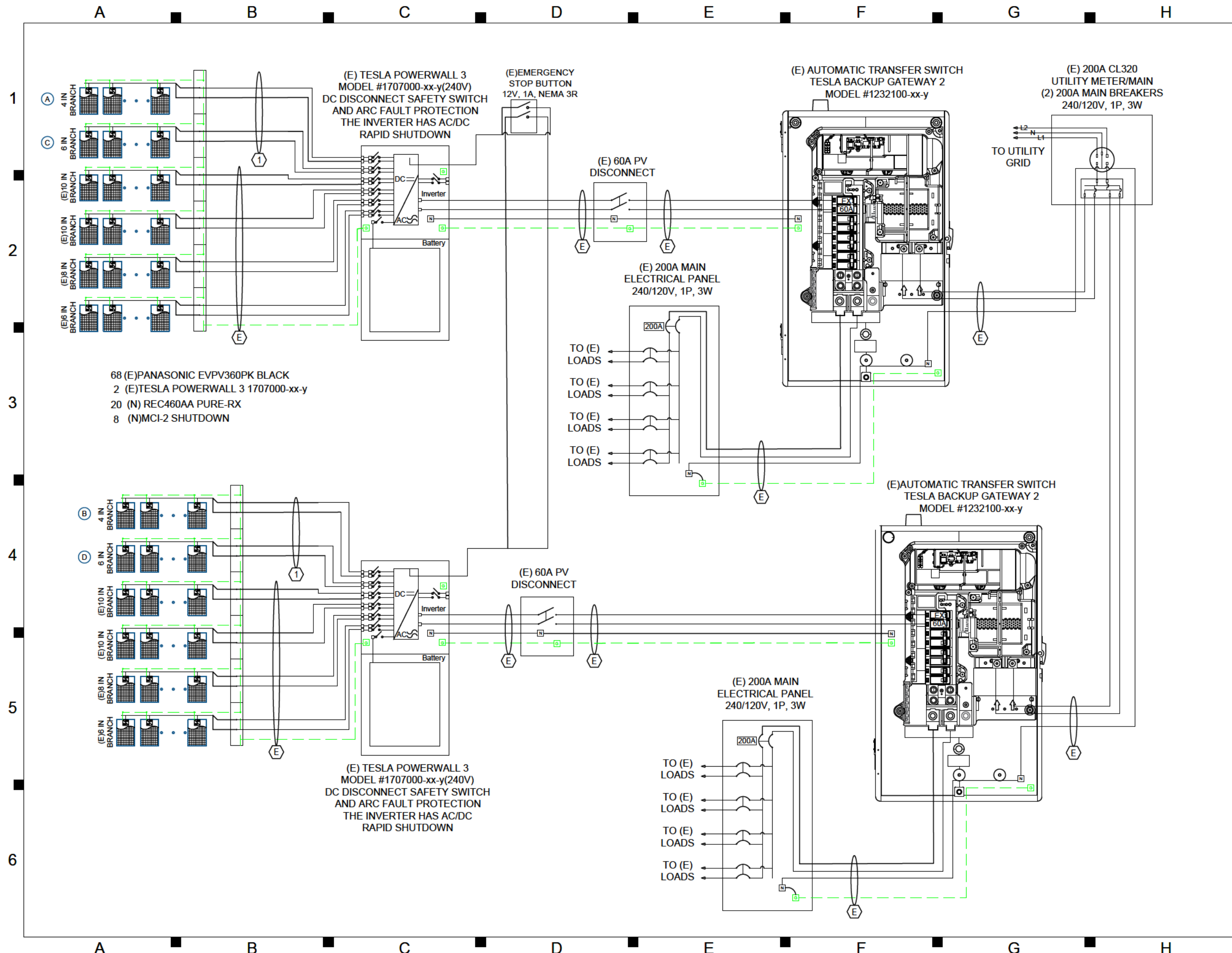
LINE DIAGRAM

DATE: 06/25/2026

CHECKED BY:

REVISIONS

E-601.1



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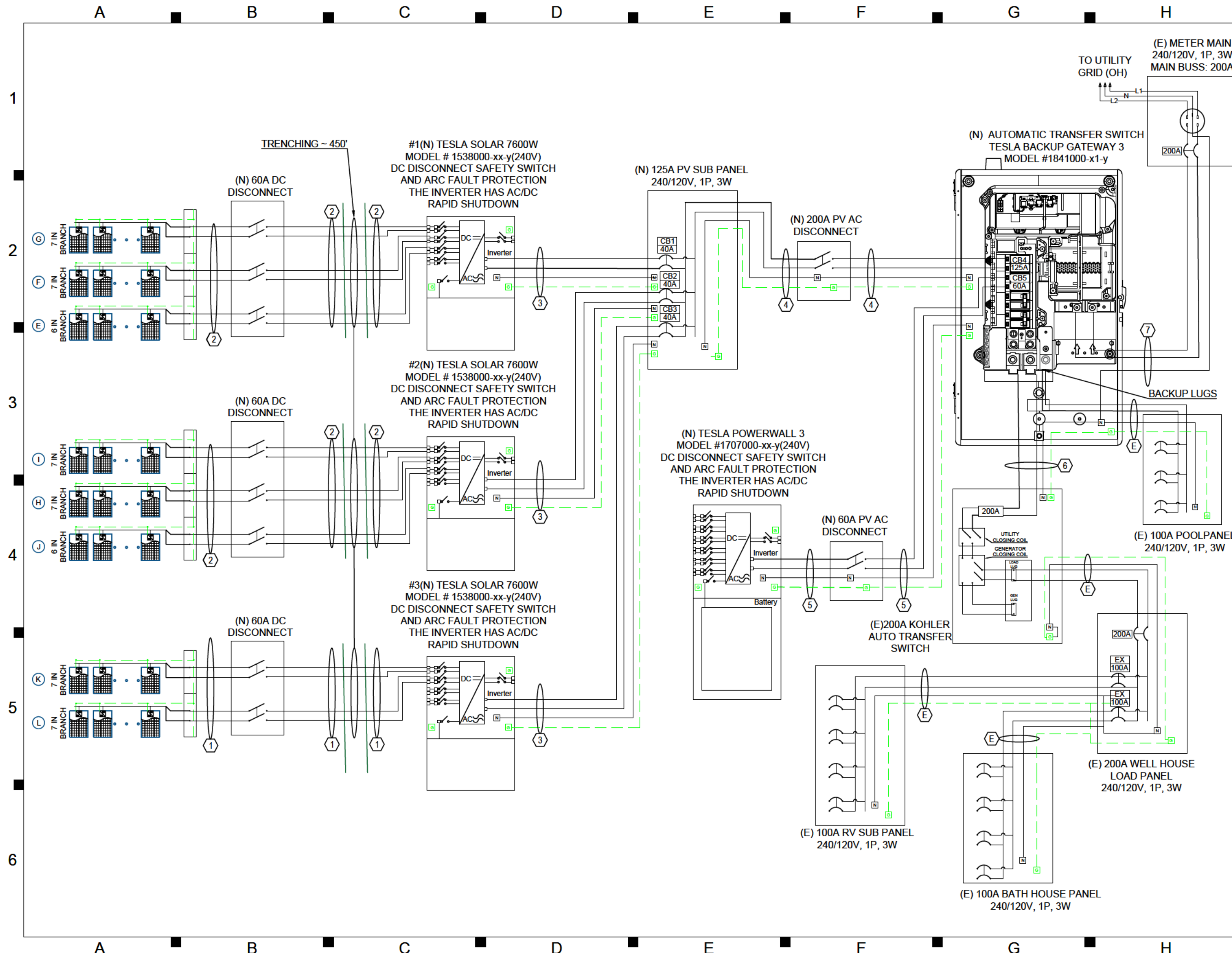
LINE DIAGRAM

DATE: 06/25/2026

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LINE DIAGRAM

DATE: 06/25/2026

CHECKED BY:

REVISIONS

E-601.3

1.1 LABELING REQUIREMENTS BASED ON THE 2022 CALIFORNIA ELECTRICAL CODE, CALIFORNIA FIRE CODE, OSHA STANDARD 1910.145, ANSI Z535.1, AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

1.2 MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

1.3 LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.

1.4 LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.

1.5 ALERTING WORDS TO BE COLOR CODED. "DANGER" WILL HAVE RED BACKGROUND; "WARNING" WILL HAVE ORANGE BACKGROUND; "CAUTION" WILL HAVE YELLOW BACKGROUND.

1.6 ALL SIGNAGE MUST BE PERMANENTLY ATTACHED AND BE WEATHER RESISTANT/SUNLIGHT RESISTANT AND CANNOT BE HAND-WRITTEN PER OSHA STANDARD 1910.145.

REVOLUSUN.
cleaner. smarter. solar.

REVOLUSUN MOUNTAIN STATES

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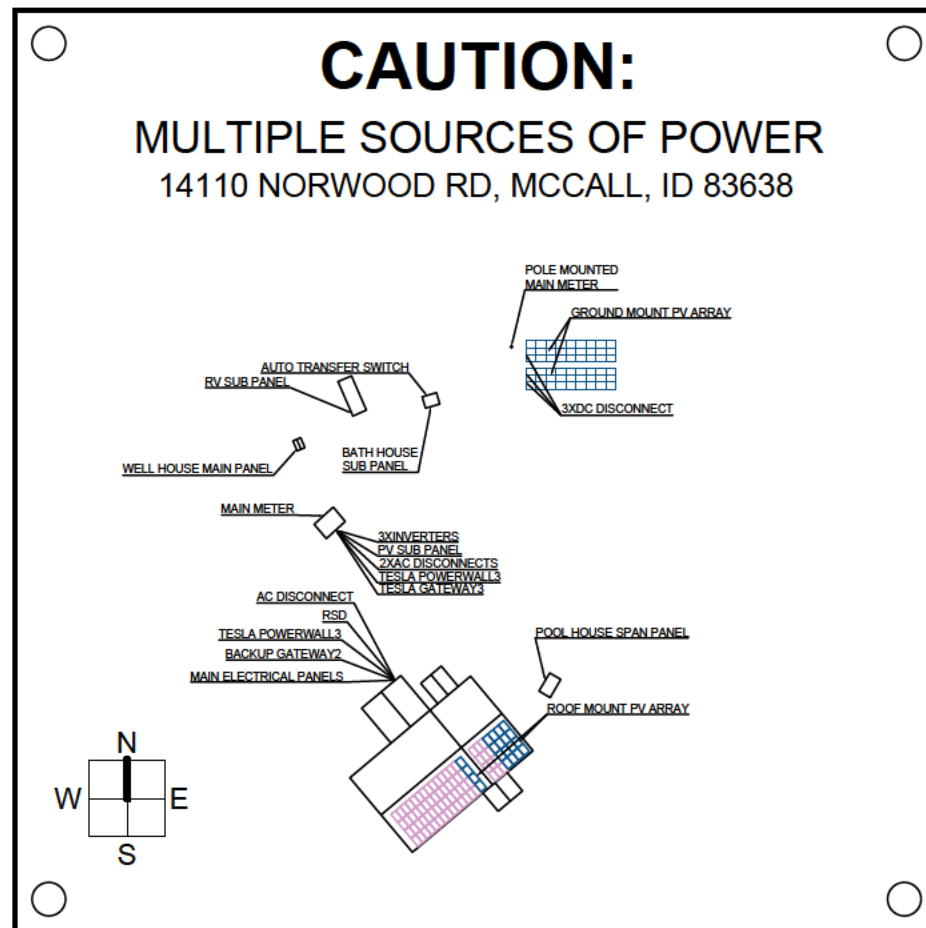
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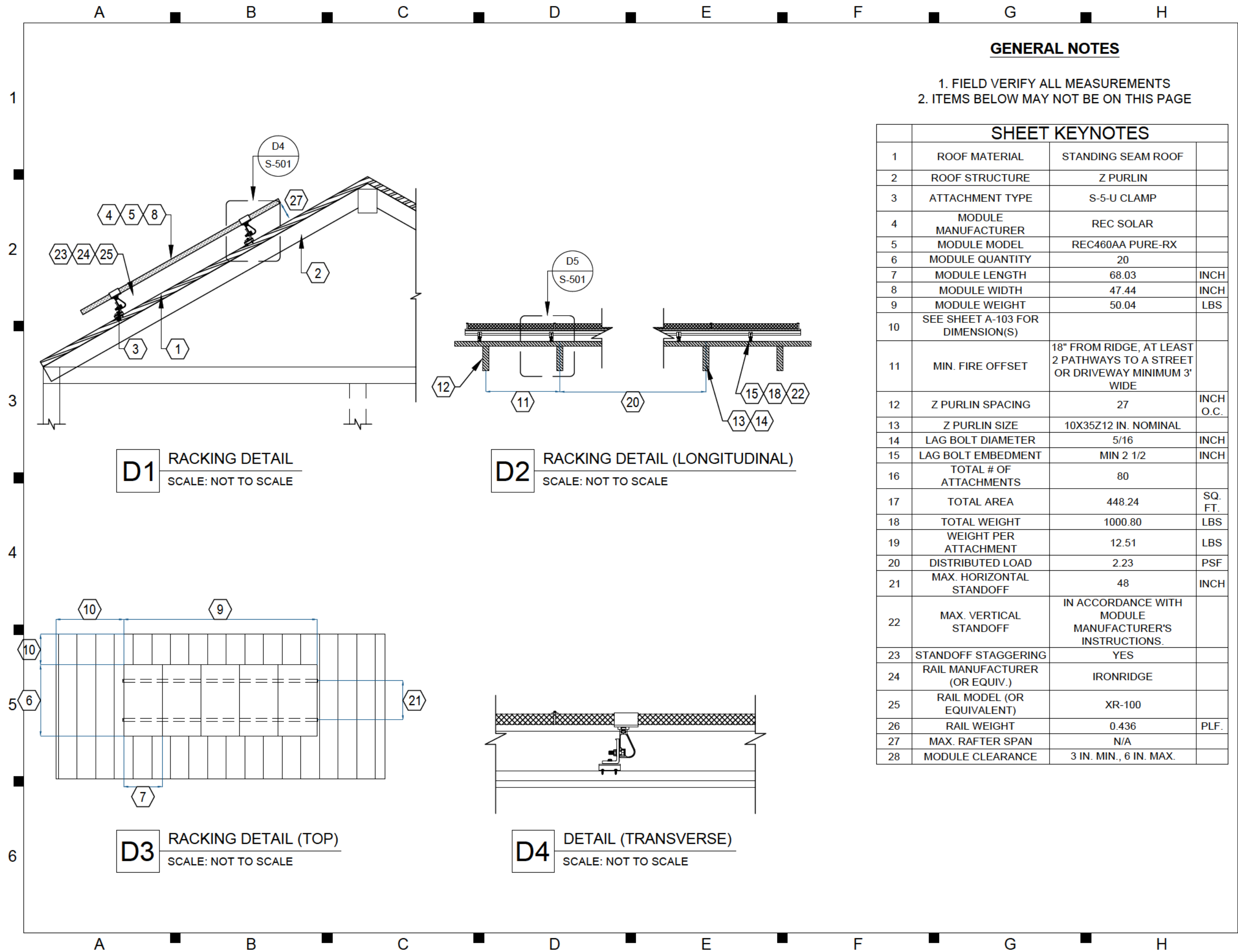
REVISIONS

E-602.00

WHERE THE PV SYSTEMS ARE REMOTELY LOCATED FROM EACH OTHER, A DIRECTORY IN ACCORDANCE WITH 705.10 SHALL BE PROVIDED AT EACH PV SYSTEM DISCONNECTING MEANS. PV SYSTEM EQUIPMENT AND DISCONNECTING MEANS SHALL NOT BE INSTALLED IN BATHROOMS [CEC 690.4(D),(E)]

LABEL 10
AT EACH DC DISCONNECTING MEANS
(4" X 1").
[CEC 690.13(B)].





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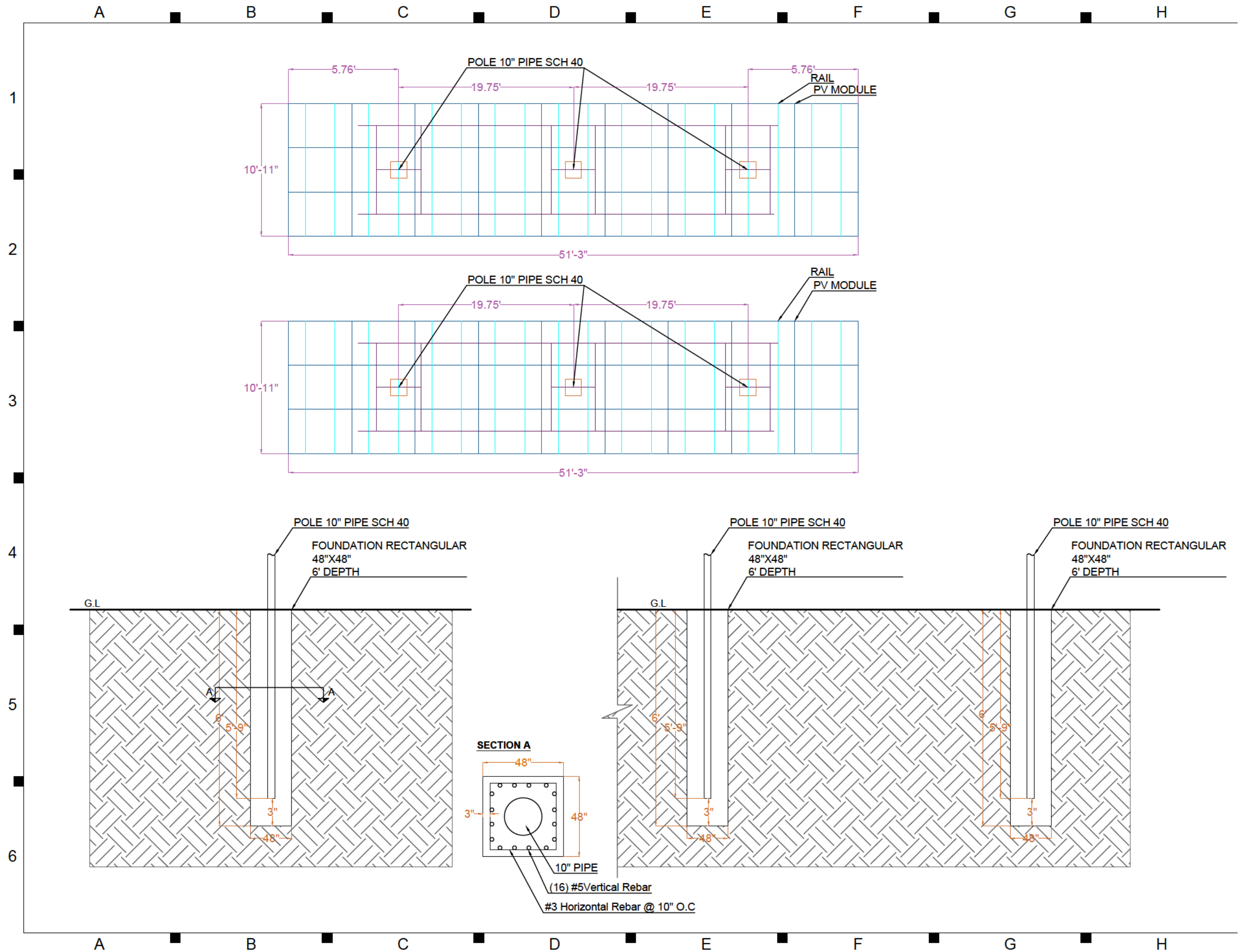
ASSEMBLY DETAILS

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S-501.1



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REC ALPHA® PURE-RX SERIES

DATASHEET

SOLAR'S MOST TRUSTED



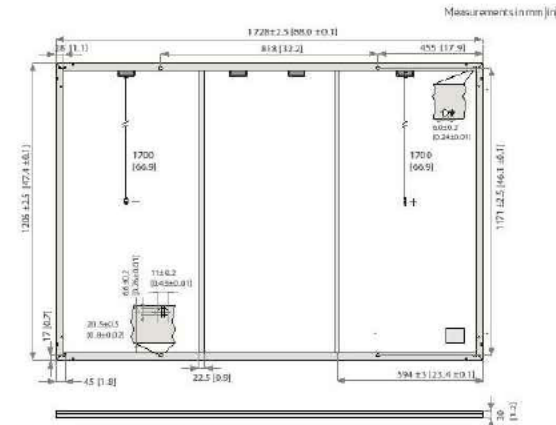
9 A MODULE CURRENT
COMPATIBLE WITH MLPE

REC ALPHA® PURE-RX SERIES DATASHEET



GENERAL DATA

Cell Type	88 half-cut bifacial REC heterojunction cells, with gapless technology
Glass	3.2mm solar glass with anti-reflective surface treatment in accordance with EN12150
Backsheet	Highly resistant polymer (Black)
Frame	Anodized aluminum (Black)
Junction Box	4-part, 4 bypass diodes, IP68 rated, in accordance with IEC 62790:2020
Connectors	Stäubli MC4 PV-KBT4/KST4 (4 mm²) in accordance with IEC 62852:2014, IP68 only when connected
Cable	4 mm² solar cable, 1.70 m + 1.70 m in accordance with EN50618:2014
Dimensions	1728 x 1205 x 30 mm (2.08 m²)
Weight	22.7 kg
Origin	Made in Singapore



Specifications subject to change without notice.

ELECTRICAL DATA

PRODUCT CODE: RECXXXAA PURE-RX

	450	460	470
Power Output - P _{max} (Wp)	450	460	470
Watt Class Sorting - (W)	0/+10	0/+10	0/+10
Nominal Power Voltage - V _{MPP} (V)	54.3	54.9	55.4
Nominal Power Current - I _{MPP} (A)	8.29	8.38	8.49
Open Circuit Voltage - V _{oc} (V)	65.6	65.8	65.9
Short Circuit Current - I _{sc} (A)	8.81	8.88	8.95
Power Density (W/m²)	216	221	226
Panel Efficiency (%)	21.6	22.1	22.6

STC

PMOT

Power Output - P _{max} (W _p)	343	350	358
Nominal Power Voltage - V _{MPP} (V)	51.2	51.7	52.2
Nominal Power Current - I _{MPP} (A)	6.70	6.77	6.86
Open Circuit Voltage - V _{oc} (V)	61.8	62.0	62.1

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread, with a tolerance of P_{max} V_{oc} & I_{sc} ±3% within one watt class. Nominal module operating temperature (PMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, wind speed 1 m/s). * Where xxx indicates the nominal power class (P_{max}) at STC above.

MODULE RATINGS

Module Operating Temperature (T98) ⁶	70°C
Min. Environmental Temperature	-40°C
System Voltage	1000 V
Maximum Test Load (4 Point Mounting, Front) ⁶	+7000 Pa (714 Kg/m²)
Maximum Test Load (4 Point Mounting, Rear) ⁶	-4000 Pa (408 Kg/m²)
Maximum Test Load (6 Point Mounting, Front) ⁶	+8000 Pa (816 Kg/m²)
Maximum Test Load (6 Point Mounting, Rear) ⁶	-6000 Pa (612 Kg/m²)
Max Series Fuse Rating	25 A
Max Reverse Current	25 A

Design load = Test load / 1.5 (safety factor)

⁶ 99th percentile operating temperature

* IEC 61730/UL 61730 certified. Refer to installation manual.

** Internal testing. Refer to installation manual.

TEMPERATURE RATINGS*

Nominal Module Operating Temperature	44 ± 2°C
Temperature coefficient of P _{max}	-0.24%/°C
Temperature coefficient of V _{oc}	-0.24%/°C
Temperature coefficient of I _{sc}	0.04%/°C

* The temperature coefficients stated are linear values.

CERTIFICATIONS

ISO 14001, ISO 9001, IEC 45001, IEC 62941	
IEC 61215-2021/IEC 61730-2023/UL 61730	
ISO 11925-2 Ignitability (EN 135 01-1 Class E)	
IEC 62716 Ammonia Resistance	
IEC 61701 Salt Mist (SM6)	
IEC 61215-2016 Hailstone (35 mm)	
UL 61730 Fire Type 2	



WARRANTY

	Standard	REC ProTrust
Installed by an REC Certified Professional	No	Yes
System Size	All	<25 kW 25-500 kW
Product Warranty (yrs)	20	25
Power Warranty (yrs)	25	25
Labor Warranty (yrs)	0	10
Power in Year 1	98%	98% 98%
Annual Degradation	0.25%	0.25% 0.25%
Power in Year 25	92%	92% 92%

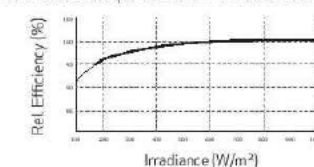
REC ProTrust Warranty applies only for REC panels installed by an REC Certified Solar Professional, and if panels have been registered by the installer, with REC. Subject to System Size and further conditions. See www.recgroup.com for details.

DELIVERY INFORMATION

Panels per Pallet	33
Panels per 40 ft GP/high cube container	594 (18 Pallets)
Panels per 13.6 m truck	660 (20 Pallets)

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



REC-PM-DS-12-06-RE-V4.3/0 IEC EN 12 7024

Available from:



Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

REC Solar PTE LTD.
20 Tuas South Ave. 14
Singapore 637312
post@recgroup.com
www.recgroup.com



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RESOURCE DOCUMENT

DATE: 06/25/2026

CHECKED BY:

REVISIONS

R-001.00

450 - 470W
HETEROJUNCTION
TECHNOLOGY

226 W/M² POWER DENSITY
>92% POWER IN YEAR 25
-0.24%/°C TEMPERATURE
COEFFICIENT OF P_{MAX}



ELIGIBLE

1
2
3
4
5
6

A B C D E F G H

Powerwall 3

Power Everything

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

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing up to 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads rated up to 185 LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 Expansions make it easier and more affordable to scale up customers' systems to meet their current or future needs. Powerwall 3 is designed for fast and efficient installations, modular system expansion, and simple connection to any electrical service.



2024

Powerwall 3 Technical Specifications

Solar Technical Specifications	Maximum Solar STC Input	20 kW
	Withstand Voltage	600 V DC
	PV DC Input Voltage Range	60 – 550 V DC
	PV DC MPPT Voltage Range	60 – 480 V DC
	MPPTs	6
	Maximum Current per MPPT (I _{mp})	13 A ¹
	Maximum Short Circuit Current per MPPT (I _{sc})	15 A ¹
	¹ Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A I _{mp} / 30 A I _{sc} .	

Environmental Specifications	Operating Temperature	-20°C to 50°C (-4°F to 122°F) ¹
	Operating Humidity (RH)	Up to 100%, condensing
	Storage Temperature	-20°C to 30°C (-4°F to 86°F), up to 95% RH, non-condensing, State of Energy (SOE); 25% initial
	Maximum Elevation	3000 m (9843 ft)
	Environment	Indoor and outdoor rated
	Enclosure Rating	NEMA 3R
	Ingress Rating	IP67 (Battery & Power Electronics) IP55 (Wiring Compartment)
	Pollution Rating	P03
	Operating Noise @ 1 m	< 50 dB(A) typical < 62 dB(A) maximum
	¹ Performance may be de-rated at operating temperatures above 40°C (104°F).	

Compliance Information	Certifications	UL 1741, UL 9540, UL 9540A, UL 3741, UL 1741 PCS, UL 1741 SA, UL 1741 SB, UL 1973, UL 7698B, UL 7698, CSA C22.2 No. 0.8, CSA C22.2 No. 107.1, CSA C22.2 No. 330, CSA 22.3 No. 9, IEEE 1547, IEEE 1547A, IEEE 1547.1, CA Rule No. 21
	Grid Connection	United States and Canada
	Emissions	FCC Part 15 Class B, ICES 003
	Environmental	RoHS Directive 2011/65/EU
	Seismic	AC156, IEEE 683-2005 (high)
	Fire Testing	Meets the unit level performance criteria of UL 9540A

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Powerwall 3 Datasheet

Powerwall 3 Technical Specifications

System Technical Specifications	Model Number	1707000-v0-v
	Nominal Grid Voltage (Input & Output)	120/240 VAC
	Grid Type	Split phase
	Frequency	60 Hz
	Nominal Battery Energy	13.5 kWh AC ¹
	Nominal Output Power (AC)	5.8 kW 7.8 kW 10 kW 11.5 kW
	Maximum Apparent Power	5,800 VA 7,800 VA 10,000 VA 11,500 VA
	Maximum Continuous Current	24 A 31.7 A 41.7 A 48 A
	Overcurrent Protection Device ²	30 A 40 A 60 A 60 A
	Configurable Maximum Continuous Discharge Power Off-Grid (PV Only, -20°C to 25°C)	15.4 kW ³
	Maximum Continuous Charge Current / Power (Powerwall 3 only)	20.8 A AC / 5 kW
	Maximum Continuous Charge Current / Power (Powerwall 3 with up to (3) Expansion units)	33.3 A AC / 8 kW
	Output Power Factor Rating	0 – 1 (Grid Code configurable)
	Maximum Output Fault Current (1 s)	160 A
	Maximum Short-Circuit Current Rating	10 kA
	Load Start Capability	185 LRA
	Solar to Battery to Home/Grid Efficiency	89% ⁴
	Solar to Home/Grid Efficiency	97.5% ⁴
AC Metering Protections	Power Scalability	Up to 4 Powerwall 3 units supported
	Energy Scalability	Up to 3 Expansion units (for a maximum total of 7 units)
	Supported Islanding Devices	Gateway 3, Backup Switch, Backup Gateway 2
	Connectivity	Wi-Fi (2.4 and 5 GHz), Ethernet, Cellular (LTE/4G/L)
	Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
	AC Metering	Revenue Grade (+/- 0.5%, ANSI C12.20)
	Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
	Customer Interface	Tesla Mobile App
	Warranty	10 years
	¹ Values provided for 25°C (77°F), at beginning of life, 3.3 kW charge/discharge power.	
	² See Powerwall 3 Installation Manual for fuse requirements if using fuse for overcurrent protection.	
	³ If enabling the 15.4 kW off-grid maximum continuous discharge power, Powerwall 3 must be installed with an 80 A breaker and appropriately sized conductors.	
	⁴ Typical solar shifting use case.	
	⁵ Tested using CEC weighted efficiency methodology.	
	⁶ The customer is expected to provide internet connectivity for Powerwall 3; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.	

¹ Values provided for 25°C (77°F), at beginning of life, 3.3 kW charge/discharge power.
² See [Powerwall 3 Installation Manual](#) for fuse requirements if using fuse for overcurrent protection.
³ If enabling the 15.4 kW off-grid maximum continuous discharge power, Powerwall 3 must be installed with an 80 A breaker and appropriately sized conductors.
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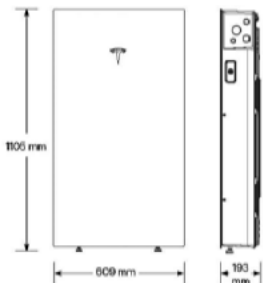
Powerwall 3 Datasheet

2

Powerwall 3 Technical Specifications

Mechanical Specifications	Dimensions	1105 x 609 x 193 mm (43.5 x 24 x 7.6 in) ¹
	Total Weight of Installed Unit	132 kg (291.2 lb)
	Weight of Powerwall 3	124 kg (272.5 lb)
	Weight of Glass Front Cover	6.5 kg (14.5 lb)
	Weight of Wall Bracket	1.9 kg (4.2 lb)
	Mounting Options	Floor or wall mount

¹ These dimensions include the glass front cover being installed on Powerwall 3.



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Powerwall 3 Datasheet

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83638

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Gateway 3

Tesla Gateway 3 controls connection to the grid in a Powerwall system, automatically detecting outages and providing seamless transition to backup power. It provides energy monitoring that is used by Powerwall for solar self-consumption, time-based control, and backup operation.

Performance Specifications

Model Number	1841000-x1-y	AC Meter	+/- 0.5%
Nominal Grid Voltage	120/240 V AC	Communication	CAN
Grid Configuration	Split phase	User Interface	Tesla App
Grid Frequency	60 Hz	Backup Transition	Automatic disconnect for seamless backup
Continuous Current Rating	200 A	Overcurrent Protection Device	100–200 A Service entrance rated Eaton CSR, BWH, or BW, or Square D QOM breakers
Maximum Supply Short Circuit Current	22 kA with Square D or Eaton main breaker 25 kA with Eaton main breaker ¹⁶	Internal Panelboard	200 A 8-space/16 circuit breakers Eaton BR, Siemens QP, or Square D HOM breakers rated to 10–125A
IEC Protective Class	Class I	Warranty	10 years
Overvoltage Category	Category IV		
¹⁶ Only Eaton CSR or BWH main breakers are 25 kA rated.			

Environmental Specifications

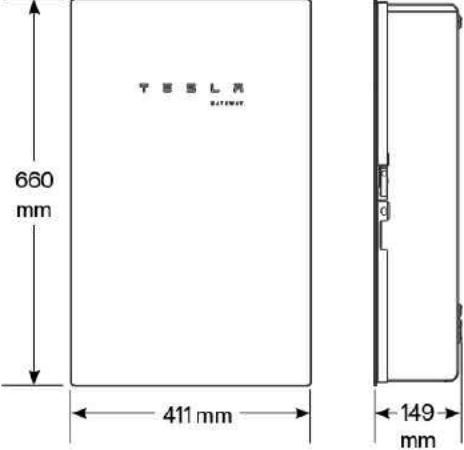
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

Compliance Information

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS, CSA 22.2 1071, CSA 22.2 29
Emissions	FCC Part 15, Class B, ICES 003

Mechanical Specifications

Dimensions	660 x 411 x 149 mm (26 x 16 x 6 in)
Weight	16.3 kg (36 lb)
Mounting options	Wall mount



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Solar Shutdown Device Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is integral to the rapid shutdown (RSD) function required for rooftop PV systems in accordance with Article 690 of the NEC. When paired with Powerwall 3, solar array shutdown is initiated by an External System Shutdown Switch or the On/Off Enable switch located on Powerwall 3. Systems not subject to rapid shutdown requirements must still install one or more MCIs for functional purposes; see the Powerwall 3 installation manual for details.

Electrical Specifications

Model	MCI-1	MCI-2	MCI-2 High Current
Nominal Input DC Current Rating (I _{MP})	13 A	13 A	15 A
Maximum Input Short Circuit Current (I _{SC})	19 A	17 A	19 A
Maximum System Voltage	600 V DC	1000 V DC ¹⁴	1000 V DC ¹⁴
Maximum Disconnect Voltage ¹⁵	600 V DC	165 V DC	165 V DC

¹⁴ Maximum System Voltage is limited by Powerwall to 600 V DC.
¹⁵ Maximum Disconnect Voltage is the maximum voltage allowed across each MCI in the open position (Rapid Shutdown Initiated). An individual MCI-2 has a voltage rating of 165V but in combination (connected in the same string) their voltage ratings are additive.

RSD Module Performance

Maximum Number of Devices per String	5
Control	Power Line Excitation
Passive State	Normally Open
Maximum Power Consumption	7 W
Warranty	25 years

Environmental Specifications

Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)	-30°C to 70°C (-22°F to 158°F)
Enclosure Rating	NEMA 4X / IP65	

Mechanical Specifications

Electrical Connections	MC4 Connector	
Housing	Plastic	
Dimensions	125 x 150 x 22 mm (5 x 6 x 1 in)	173 x 45 x 22 mm (6.8 x 1.8 x 1 in)
Weight	350 g (0.77 lb)	120 g (0.26 lb)
Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip

Compliance Information

Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch

UL 3741 PV Hazard Control (and PVRSA) Compatibility

See [UL 3741 Application Addendum](#)



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Flush Mount System

Datasheet



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.

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 3/4" 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



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S-5!®

The Right Way!®

S-5-U Clamp

The S-5-U clamp is by far our most popular and most versatile clamp. It fits about 85% of the standing seam profiles manufactured in North America—including most structural and architectural profiles. It can be used on vertically oriented seams and, by rotating the clamp 90 degrees, it can also be used on most horizontal 2" seam profiles.

Its simple design, generous dimensioning, and multiple hole orientations are what make the S-5-U clamp so versatile for use with the S-5!® snow retention products, such as ColorGard®, as well as with other heavy-duty applications.

Installation is as simple as setting the specially patented round-point setscrews into the clamp, placing the clamp on the seam, and tightening them to the specified tension. Then, affix ancillary items using the bolt provided with the product. Go to www.S-5.com/tools for information and tools available for properly attaching and tensioning S-5! clamps.

S-5-U Mini Clamp

The S-5-U Mini is a bit shorter than the S-5-U and has one setscrew rather than two. The mini is the choice for attaching all kinds of rooftop accessories: signs, walkways, satellite dishes, antennas, rooftop lighting, lightning protection systems, solar arrays, exhaust stack bracing, conduit, condensate lines, mechanical equipment—just about anything!®

*S-5! mini clamps are not compatible with, and should not be used with S-5! SnoRail™/SnoFence™ or ColorGard® snow retention systems.

The S-5-U clamp is our most popular and versatile clamp, fitting about 85% of the standing seam profiles in North America.

S-5-U and S-5-U Mini

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S-5!®

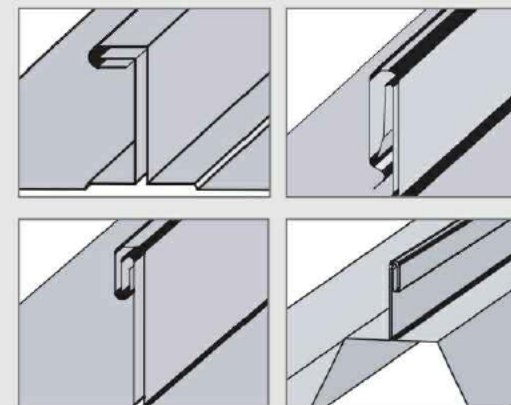
The Right Way!®

The strength of the S-5-U clamp is in its simple design. The patented setscrews will slightly dimple the metal seam material but not pierce it—leaving the roof manufacturer's warranty intact.

The S-5-U and S-5-U Mini clamps are each furnished with the hardware shown to the right. Each box also includes a bit tip for tightening setscrews using an electric screw gun. A structural aluminum attachment clamp, the S-5-U is compatible with most common metal roofing materials excluding copper. All included hardware is stainless steel. Please visit www.S-5.com for more information including CAD details, metallurgical compatibilities and specifications.

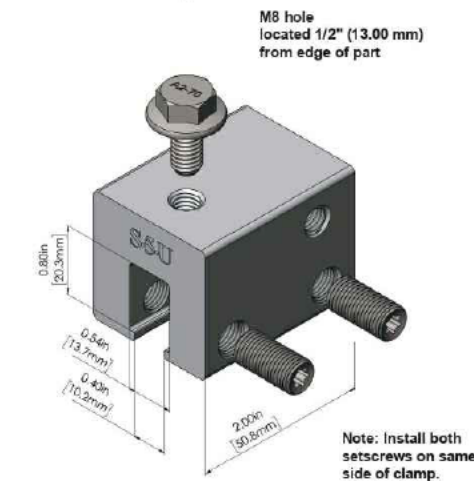
The S-5-U clamp has been tested for load-to-failure results on most major brands and profiles of standing seam roofing. The independent lab test data found at www.S-5.com can be used for load-critical designs and applications. S-5!® holding strength is unmatched in the industry.

Example Profiles

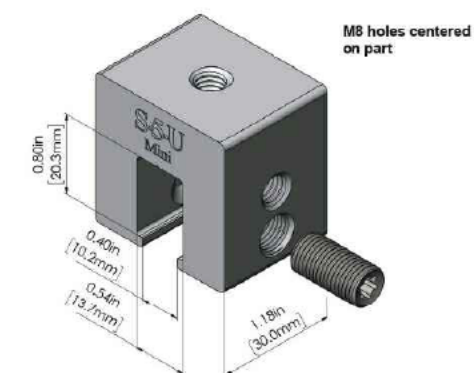


For horizontal seams under 0.65", do not use this clamp. Visit www.S-5.com for more detailed information and proper clamp usage.

S-5-U Clamp



S-5-U Mini Clamp



S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. Visit the website at www.S-5.com for complete information on patents and trademarks. For maximum holding strength, setscrews should be tensioned and re-tensioned as the seam material compresses. Clamp setscrew tension should be verified using a calibrated torque wrench between 160 and 180 inch pounds when used on 22ga steel, and between 130 and 150 inch pounds for all other metals and thinner gauges of steel. Consult the S-5! website at www.S-5.com for published data regarding holding strength.

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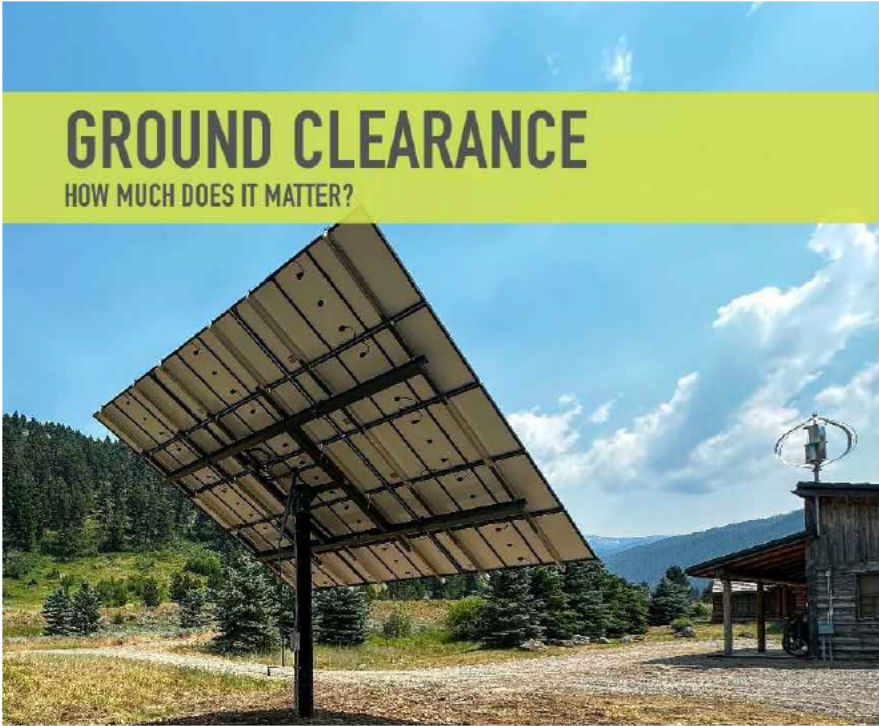
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GROUND CLEARANCE

HOW MUCH DOES IT MATTER?



EASIER MAINTENANCE
Higher ground clearance keeps arrays clear of tall grass and other plants that are allowed to grow freely below the mount. There's no need to use harsh vegetation control methods or any special measures outside of standard ground maintenance. Snow and leaves will slide off the array and can be allowed to accumulate on the ground without obstructing modules.

DUAL USE OF LAND
Higher ground clearance lets you use your land as you choose. You can keep the original function of your space and change it as you please without your mount being an obstruction. Your solar mount can even enhance the way you use your property by adding shade and cover.

SAFETY AND SECURITY
Higher ground clearance can bypass the need for fences, barriers, and other requirements affecting systems with exposed wiring below eight feet. This keeps installations simpler and less expensive. Keeping the array out of reach also prevents vandalism, theft, and accidental damage. Even stray rocks that might be kicked up when using lawn equipment won't be likely to dent or crack modules that are far off the ground.

BROADER ADJUSTABILITY
Higher ground clearance allows for a broader range of adjustability. The array can be positioned 90 degrees, making it easier to clean the modules or move them out of the way as needed for ground maintenance.

BETTER MODULE EFFICIENCY
When more air can circulate below the mount, module temperatures are reduced, which improves their efficiency and energy output. Heat can be reduced even more if plants are allowed to grow below the mount, as they reduce ground temperatures and add a natural evaporative cooling effect. Arrays are also more productive when they are above shadows cast by surrounding objects. Even shade cast by tall trees can be bypassed by raising arrays.

THE HIGH COST OF LOW CLEARANCE MOUNTS

Mounts that keep arrays low to the ground carry some vulnerabilities. If you are planning to install a solar mount with limited ground clearance, you may want to account for the following:



Unsustainable, Limited Land Use - Low clearance mounts limit land usability. Space that's solely dedicated to solar mounts can't be used for much else. If the ground is kept natural, vegetation will need to be controlled by frequent mowing or with herbicides that harm the environment. Alternatively, the natural ground will need to be permanently sterilized using chemicals.

Smaller Return on Investment - Because low ground clearance mounts don't allow for dual use of the land, the returns you can get from your property are also limited. Conversely, high ground clearance mounts can add energy generation to spaces that are already in use, like drive-ways, sidewalks, gardens, and crop fields.

Greater Potential for Theft and Damage - Even security fences can be breached by thieves. Accidental damage caused by animals, people, or vehicles is also harder to prevent when modules are closer to the ground.



Higher Maintenance - In general, solar mounts that are closer to the ground mean more frequent maintenance and increased O&M costs. Any grass below the mount needs to be consistently controlled so it doesn't interfere with output. If snow and leaves build up around the mount, they must be consistently cleared away. Mounts will also demand more frequent cleaning when they're closer to the ground, otherwise, dust, dirt, and pollen will accumulate, which can hinder output and potentially damage system components.

Limited Output Potential - Unlike higher clearance mounts, which can be positioned above shadows by cast surroundings, lower clearance mounts can lose energy output if taller objects shade modules. Lower clearance mounts may limit or lock the adjustability of your array, which can curb your ability to position it to an optimal angle for the season or to make adjustments for maintenance. If air cannot freely circulate between the modules and the ground, efficiency and output will be hindered.



SNOW SLIDES OFF



DUAL USE OF SPACE



NO FENCING REQUIRED



LESS MAINTENANCE (LOW O&M)

How High?

MT Solar recommends a minimum of ground clearance of five feet. Leaving more space between the array and the ground adds up to a lot of benefits.



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