

Pine Ridge RV Resort - Simple Single-Panel Example

Address: Sample project - United States	Prepared: 7/19/2026	Prepared For: Sample RV park project	Prepared By: Southern Electrical Solutions
Default RV-site status: New · explicit per-site overrides modeled	Code Basis: 2023 NEC · 551.73 · Table 551.73(A)	Mode: Single Distribution Panel mode models one panel serving RV site circuits and park loads. The service disconnect and branch distribution are combined in one service/main panel.	System: 120/240V, 1 phase, 3 wire

RV SITES 1	DEMAND FACTOR 100%	RV SITE DEMAND 12 kVA	EQUIPMENT + OTHER 0 VA	SERVICE DEMAND 12 kVA
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RV Site Equipment Compliance

The project default is New; each explicit per-site status overrides that default. New and existing 50A minimums are rounded and checked independently. The 30A-capable minimum is based on all non-tent sites.

50A subgroup	Eligible sites	Required percentage	Minimum	Provided	Status
New sites	1	40%	1	1	Pass

30A-capable project total: 1 provided / 1 minimum (70% of 1 non-tent sites) · Pass.

Calculation Status

No automated action items. None were found for the represented inputs; review Applied Calculation Notes for the bases used.

Required Protective Features

Automatic triggers use a valid entered Park Equipment Actual OCPD when one is available; otherwise they use the calculated minimum OCPD. The installed device type, frame, adjustment, configuration, and project-specific conditions can add requirements; a boundary below an automatic threshold is not a declaration that no protective feature is required.

One-Line tag	OCPD boundary	Applicable OCPD / basis	Required feature / NEC basis
No automatic protection threshold was triggered. 2 applicable OCPD boundaries were evaluated; this does not establish that the final installed equipment requires no additional protective feature.			

Applied Calculation Notes

This is the source-to-first-OCPD service segment, so no load-side equipment grounding conductor is installed with these service conductors. Service grounding, bonding, grounded-conductor routing, and the grounding-electrode conductor remain separate service requirements.
Applies to: Panel A Service / Main

The service grounding planning result uses the equivalent area of 6 copper ungrounded service conductors for one phase. The general Table 250.66 result is 8 copper for the grounding electrode conductor at Panel A Service / Main, and the wire-type main bonding jumper planning minimum is 8 copper under Table 250.102(C)(1). No load-side EGC is added to the source-to-first-OCPD segment. Service supply-side bonding jumpers, bonding fittings, and parallel-raceway bonding under 250.92 and 250.102(C) depend on the actual utility, meter, enclosure, and raceway topology and are not automatically sized. Electrode-specific allowances are not applied; confirm the installed electrode system, bonding means, conductor material restrictions, and equipment listing.

Applies to: Panel A Service / Main

The 5% combined downstream planning check adds each physical panel feeder and the applicable load branch. A radial destination uses its cumulative run voltage drop through that pedestal. Combined single-panel and MDP-direct branches begin at their local source OCPD and therefore contain the branch segment only. The utility/source-to-first-OCPD service segment is excluded. Supported panel-feeder, branch, and uniform radial-route conductor arrangements are jointly selected on a minimum installed conductor-area basis while every terminal branch or radial route remains within 3% and every modeled source-to-load path remains within 5%. Each applicable phase leg or line pair is evaluated as one consistent path. Modeled physical phase and neutral-current phasors are used where the load basis is resolved; continuous-load and motor factors remain ampacity/load adjustments rather than physical voltage-drop current, and uncertain power-factor cases retain a conservative physical-current fallback.

Applies to: All modeled source-to-load paths

Service Phase Loading

Relative phase balance: 0% maximum spread.

Phase	Calculated current	Calculated load / basis
A	50 A	6 kVA
B	50 A	6 kVA

Service / Main Panel Summary

One-Line tag: SVC-01
One-way utility-to-first-OCPD run: 0 ft
Terminal / ambient basis: 60°C terminal basis · 26-30°C ambient
Service grounding at Panel A Service / Main: GEC 8 AWG Cu · Table 250.66; wire-type main bonding jumper 8 AWG Cu · Table 250.102(C)(1)
Supply-side raceway / enclosure bonding: actual service topology required; 250.92 / 250.102(C) jumpers and fittings are not auto-sized.

Demand	Maximum phase / neutral	Calculated minimum service / main panel rating	Conductors / CCC / corrected ampacity	Neutral	Service EGC / boundary	Wiring method / raceway	VD
12 kVA	50 A	50/2P	6 AWG Cu 3 CCC — neutral counted conservatively 55 A corrected ampacity	Full-size for RV site distribution	No EGC on source side of first OCPD; service grounding/bonding and GEC remain required	3/4 in. PVC Schedule 80 · THHN/THWN-2 fill basis	0% · pass

Combined Downstream Voltage-Drop Paths

The 5% planning check adds only modeled conductor segments that are physically in series from the applicable source OCPD through each load branch. RVParkCalc jointly evaluates supported transformer-primary, modeled remote-secondary, panel-feeder, terminal-branch, direct-pedestal, and uniform radial-run arrangements, then selects the least installed conductor area that keeps every terminal branch or cumulative radial route at or below 3% and every complete downstream path at or below 5%. Ampacity, protection, EGC, full-neutral, complete-set, raceway-fill, and 750 kcmil individual-conductor constraints remain enforced. Utility/source-to-first-OCPD service conductors and transformer internal regulation are excluded. An action item remains only when no supported arrangement satisfies the planning limits.

Serving equipment	Load path	Included modeled conductor segments	Combined VD
Panel A	RV-1 direct pedestal supply	RV-1 direct-pedestal supply 0.51% Excluded: utility/source-to-first-OCPD service segment	0.51% · pass 5% target

Direct-Fed and Radial Pedestal Supplies

Direct-Fed Pedestal Schedule

Panel / feeder / pedestal	Arrangement / RV sites	Connected / common-supply demand	Distance basis	Pedestal supply planning result	Notes / routing
Panel: Panel A One-Line: P01-RV-1 Feeder: RV-1 Pedestal: PED-1	Single-sided pedestal RV-1: 50A + 30A + 20A RV site: New site Submeter: No Phase: A-B	Connected: 12 kVA Demand factor: 100% Common supply: 12 kVA	Distance: 25 ft Panel to pedestal	OCPD: 50/2P Conductors: 6 AWG Cu Neutral: 6 Cu neutral EGC: 10 Cu EGC Raceway: 1 in. PVC Schedule 80 · THHN/THWN-2 fill basis Current-carrying conductors: 3 CCC — neutral counted conservatively Ampacity: 55 A corrected ampacity Terminal / ambient: 60°C terminal basis · 26-30°C ambient Voltage drop: 0.51% · pass Combined modeled path: 0.51% · pass Supply basis: One common supply result serves this pedestal.	

Shared Pedestal / Feed-Through Segment Schedule

No shared pedestal or feed-through RV-site runs entered.

Individual RV Site Assignment Detail

Panel	Circuit / site	Topology / path	Equipment / phase / basis	Distance interpretation	Site status / submeter / notes
Panel A	RV-1 · RV-1	Direct-fed pedestal PED-1 · one direct supply	50A + 30A + 20A RV site A-B · 12 kVA	25 ft panel-to-pedestal Combined modeled path: 0.51% · pass	New site Submeter No

Park Equipment Schedule

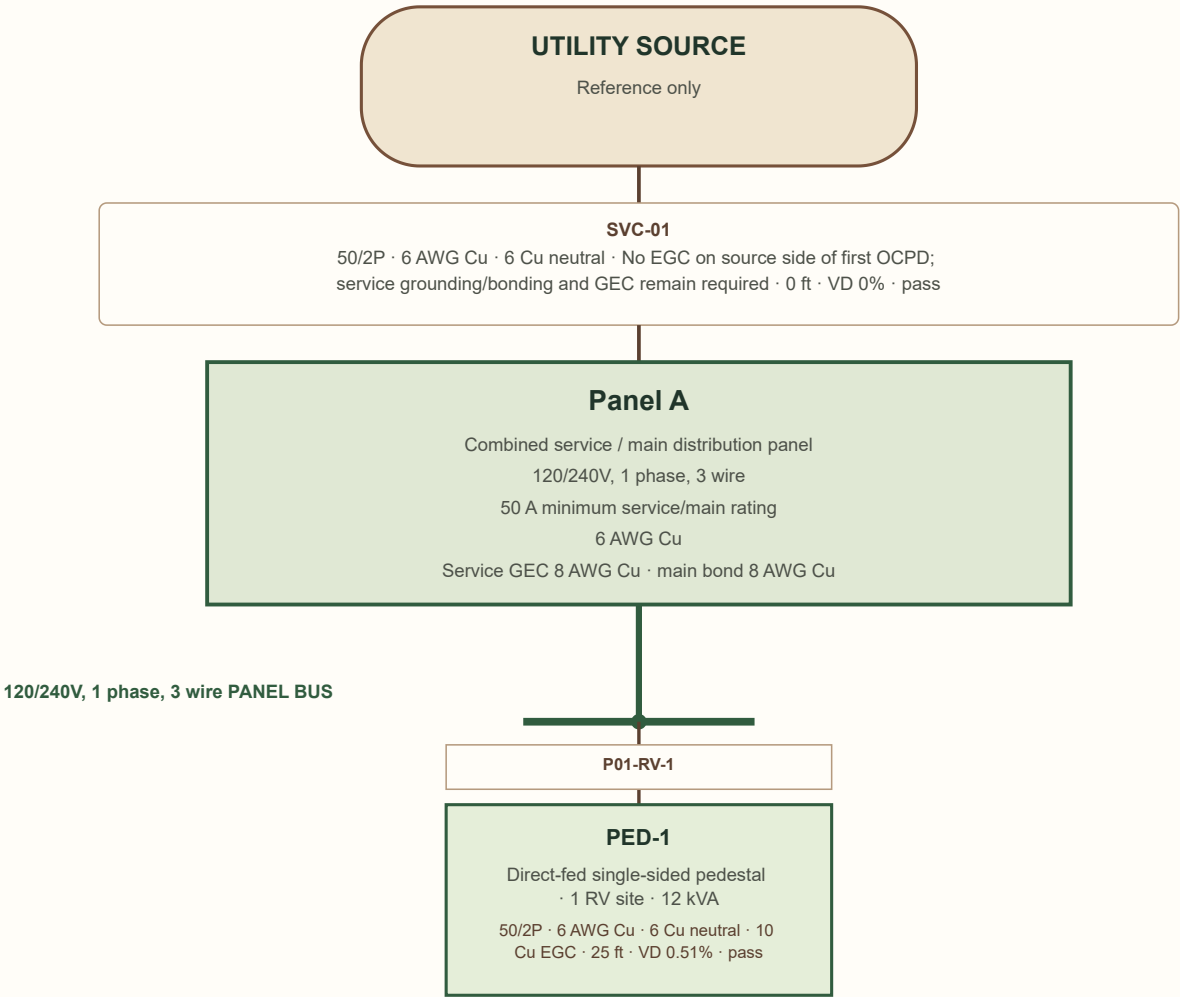
No dedicated equipment entered.

Other Calculated Loads

No other loads entered.

Tagged Source-to-Load Diagram

Panel A Service and Branch One-Line



Tagged planning one-line. Direct dual-sided pedestals use one common supply; radial segments remain ordered; downstream panel main-device configuration is not assumed.

Calculation Assumptions and Legal Notice

RV site bases and demand factors use 551.73 and Table 551.73(A). A 50A site is modeled as 6,000 VA on each of two line-to-neutral legs. Every direct-fed entry represents one physical pedestal and one panel-to-pedestal route. A single-sided pedestal contains one separately counted RV site; a dual-sided pedestal contains two separately counted RV sites and receives one common-supply calculation using the two-site demand factor. A continuing radial run recalculates demand from the raw sites downstream of every ordered segment, and voltage drop accumulates to each pedestal. One uniform conductor and source OCPD result is shown for an uninterrupted radial run. Local pedestal/receptacle OCPD, equipment bus/service rating, listed feed-through lugs, conductor transitions, taps, branching trees, closed rings, and double-ended feeds require separate engineering and equipment-listing review. Other park loads are calculated separately and added at their entered or adjusted load. RV-site distribution neutrals are not reduced, and neutrals are counted conservatively as current-carrying conductors for ampacity adjustment in v1. Three-phase neutral-current summaries show only the vector sum of modeled linear fundamental phase currents; harmonic and nonlinear-load neutral current is not modeled. Voltage-drop percentages are informational planning targets, not guarantees of compliance.

Downstream wiring basis: Individual conductors in raceway. Parallel MHF spacing basis: not confirmed; parallel MHF results are blocked. Four-wire MHF is limited to modeled underground, compatible 120/240V single-phase routes and only the supported full-neutral constructions; every included aluminum EGC, parallel set, terminal, burial condition, and exact product listing requires verification. Aboveground routes require individual conductors in an approved raceway. Unspecified cable assemblies are not calculated.

Service supply-side bonding boundary: The displayed service GEC and wire-type main bonding jumper do not separately size every supply-side bonding jumper, meter/enclosure bond, or bonding fitting under 250.92 and 250.102(C). Confirm those items from the actual utility, meter, enclosure, and raceway topology.

Service-source basis: Service conductors in raceway. Parallel service URD spacing basis: not confirmed; parallel service URD results are blocked. Aluminum URD has no load-side EGC and is confined to the utility/source-to-first-OCPD boundary. The report calculates the general Table 250.66 copper GEC and wire-type main bonding jumper at the first service OCPD from the final service-conductor equivalent area; confirm the installed electrode and bonding system.

Service equipment arrangement: Panel A is modeled as the combined service/main distribution panel; no separate panel feeder is implied.

RVParkCalc is provided as an informational calculation aid. It is not a licensed design professional and does not create sealed, permit-ready, procurement-ready, construction-ready, or energization-ready documents. Verify every input, adopted code edition, local amendment, utility requirement, equipment listing, conductor, cable, and raceway condition, neutral loading, voltage drop, overcurrent protection, fault-current rating, grounding and bonding detail, and manufacturer instruction through qualified professional and AHJ review before use.