Carson City Building Division

Kevin Gattis, Chief Building Official

WIND ELECTRICAL SYSTEMS
PLAN SUBMITTAL REQUIREMENTS

Scope:

This information is applicable to wind machine(s) and wind energy conversion system(s) installations used to convert mechanical or kinetic energy into electrical energy. These requirements are applicable to both residential and commercial installations.

General Information:

- These permits shall be issued to one of the following. An Electrical Contractor possessing a Nevada State Contractors Board (NSCB) licensing type C-2. **OR** a General Contractor, with his/her Electrical Sub-contractor noted on the plan cover sheet. **OR** residential installations being issued to an owner/builder in compliance with the requirements of Nevada Revised Statute (NRS) 624.031. **OR** issued to a contractor or party approved at the discretion of the Chief Building Official.

- Due to Carson City's snow and wind loads, the design of the supporting tower or structure supporting the wind machine shall be designed by a Nevada registered Engineer, with the structural design and supporting calculations sealed in compliance with State law.

- All ground mounted systems, and all commercial roof mounted systems shall comply with the requirements of the Carson City Planning Division. For additional information, please contact the Carson City Planning Division at (775) 887-2180.

- Plans shall be on **11″ x 17″ or larger** paper sizes, and all design sheets within the plan set should be the same size. The plans shall be designed to comply with applicable minimum approved scale. In addition, the plan cover sheet shall allow enough space on the cover sheet to allow staff to insert the necessary approvals, which translate to a blank area roughly 4" x 8 ½".

- Plans **shall be photocopies, or original blue or black ink drawings**. The use of colored ink, other than blue or black, or the use of colored ink beyond that which is used for licensing seals and/or original signatures on plan sets, would constitute grounds for an automatic rejection of the application. Plans with original pencil drawings or notes will be rejected.

- Plans shall be fully dimensioned, and drawn to an **approved architectural scale 1/4″=1′-0″ minimum**, with plan **details and elevations prepared using a 1/2″=1′-0″ or greater scale**. The scale shall be indicated on each page, and separate detail or elevation. **Site plans** shall be fully dimensioned and drawn to one of the following **approved engineering scales: 1"=10', 1"=20' & 1"=30'**

- **When plans are prepared by an Owner/Builder**, in compliance with Nevada Revised Statute (NRS), the plan set must have the owner's name and address printed under the heading of "Designer" the cover sheet. Below this information shall be an original signature with date of signing. To avoid confusing this signature with a copy or facsimile, Carson City Building Division staff recommends that this signature be in colored ink. (Some color other than black)

- **Plans prepared by a Nevada licensed Design/Build Contractor** shall have the following information printed on the Cover Sheet of the plan set:

  - Business Name

- Business Address
- Bid Limit
- License Classification Type
- License Number
- License Expiration Date
- Name of Qualified Employee, with an original signature

- **Plans prepared by a Nevada Registered Design Professional** (Architect, Residential Designer, or Mechanical Engineer) shall comply with the applicable Nevada Administrative Code (NAC) for their licensure

Submittal

- A minimum submittal shall include the following items. Incomplete plan submittals will not be accepted:
  - **Two (02)** complete sets of plans **for Residential Systems** or **Three (03)** complete sets **for Commercial Systems** – which shall include the following, as applicable:
    - **Cover Sheet –** Indicate the project address, contractor(s) contact information, code(s) used, Seismic Zone, Wind Load, Snow Load, and allow area for Carson City Building Division approval stamps and red-line comments.
    - **Site Plan (Ground mounted systems only)** – The Site Plan shall indicate the location of the wind machine, with all underground electrical conduit(s) including material type and sizes (Ex.: 3″ PVC, 2 ½" RMC, etc.). Show the location of the electrical main service panel with amperage (100 Amp, 200 Amp, etc.), voltage and phasing identified. Also, indicate the transfer switch type (automatic versus manual) at the service.

      NOTE: For residential properties on well and/or septic <u>one (01) additional site plan</u> shall be submitted for review by the Carson City Health & Human Services Dept. (HHS)

      For Site Plan design requirements, please refer to the following Carson City Building Division handouts, as applicable: <u>*COMMERCIAL SUBMITTAL REQUIREMENTS: New Construction & Additions*</u> or <u>*RESIDENTIAL PLAN SUBMITTAL REQUIREMENTS: One & Two Family Dwellings and Accessory Structures*</u>
    - **Foundation Plan (Ground mounted systems)** – This is a dimensioned plan view of the footing location, with details showing the footing design.
    - **Tower or supporting structure design –** This is the structural design of the frame or tower supporting the wind machine.
    - **Elevation View** – This is a scaled and dimensioned view of the wind machine, propeller(s), and tower or supporting structure. This is used to verify the height of wind machine tower or supporting structure.
    - **Floor Plan –** This is a scaled **Electrical Floor Plan** of the electrical equipment room or building used to house the batteries, inverter and any applicable equipment installed as a part of the system design. The Floor Plan must include the type, location and size of all vents used to vent the gases from the battery banks.
    - **Electrical One-Line Diagram –** This is a line drawing, which shows the components of the system, and their relationship to each other in the installation. This is not a scaled

drawing, but is merely a conceptual representation of the system design used to verify compliance. The one-line diagram shall show the wind machine, the Over Current Protection Device (OCPD) type rating and size (circuit breaker, fuse, etc.), the conductor sizes/types and the wiring method used, with panel voltage, phasing, and size in amperes. Show the inverter type and rating along with the type and size of all system batteries.

- Two (02) copies of the **manufacturer's specifications** for the wind machine, panels, inverter, DC voltage panels, with Over Current Protection Device (OCPD), etc

  NOTE: This information may be 8 ½" x 11" copies, submitted as supplemental supporting documents to the plans, which are 11" x 17" minimum.