

BE - W } nd

The Evolution Of Wind is here EOW-Series



Introduction: 2024 Revision.

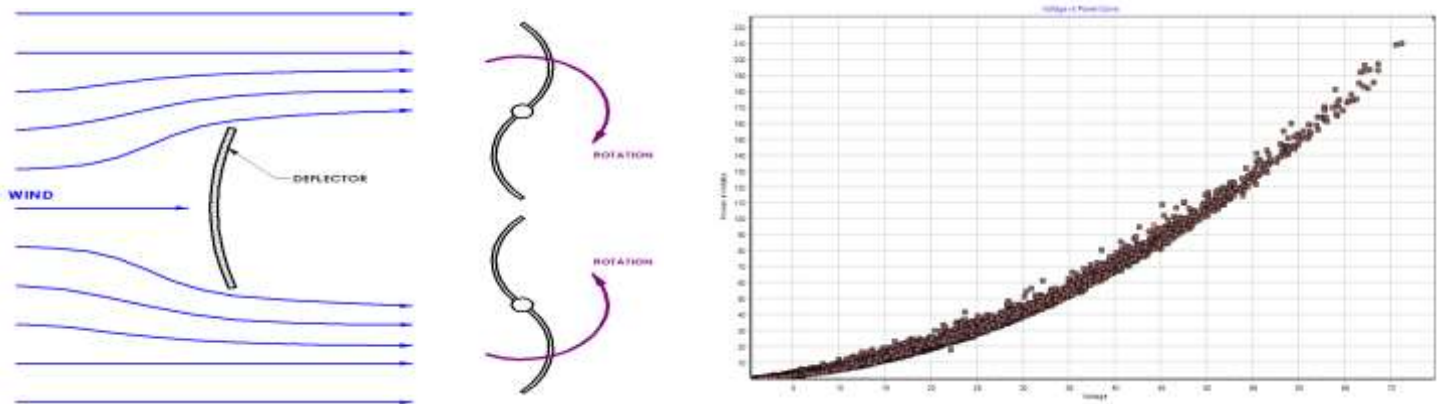
Thank you for requesting information on BE-WIND products.

The BE-WIND product line was founded and developed from the aerospace industry. Over 10 years in development and testing, using the state of art Design software and manufacturing process. We ourselves spent many years researching the requirements and concerns of invested people in the small wind market. As well we spent time reviewing many research documents and thesis on Wind technology. Having set high goals to produce a product that was efficient and durable.

The result was our patented Dual Axis Vertical turbine with a diversion and accelerator for a front shield. The forward shield not only prevents the wind force on the back side of the rotating blades, but also accelerates air flow to the production side of the blades. The second turbine gives us balance and redundancy. The system automatically aligns itself to always be focused directly into the wind

to ensure best performance.

The self-alignment is an automatic design feature and can handle large wind gusts and sustained wind speeds of over 50 m/s and more. Yet able to have a kick in speed of only 1.5 m/s and extractable useable power, starting at 3 m/s.



Our focus is to supplement your power needs as best as possible. Either trying to reduce dependency from the grid and the increasing energy costs. Or support for battery systems for remote or backup power applications. We have taken the next step forward in our new MPPT wind charge controller. We make no claims to remove 100% of your power consumption, but we hope to put a reasonable dent into it.

If Off grid is your requirement, we can support Storage systems and join with Solar and Hydrogen to offer a Hybrid approach to maintain a possible 24-hour power source. We offer one of the best Warranties in the business and stand behind our US manufactured product. We continue to develop and test new innovative ways to make our technology more robust and less expensive and maintenance free, in many ways, without sacrificing quality and durability.

We are focused around to 2 product sizes that have been our flagship design since day one. The EOW-200 Bamboo / Composite and our EOW-400 Composite Turbine.

The New EOW-200 Eco Bamboo system is the same design as our most popular EOW-200 Composite Turbine, except this system will be at a much lower introductory cost. This turbine will offer A new lower cost main structure, white Gel coated fiberglass or black composite blades and shield, Main structure composed of high strength laminated Bamboo, coated for protection like a Wooden Boat hull. Lower cost components and will support only a 2-year warranty. It will support the latest 2 x 500-watt generators for a total 1-kw hour turbine.

Our technology has been recognized around the world and is currently the only Dual production system in the world designed for the Urban environment and individual low-cost power production.





DEPARTMENT OF THE AIR FORCE
AIR FORCE WARFIGHTING INTEGRATION CAPABILITY



Washington, DC

October 20, 2020

Re: Letter of Support for Micro grid energy and StorageBE-WIND IIc

To Whom It May Concern:

Micro grid energy and StorageBE-WIND IIc competed with over 800 other companies in the 2020 AFWERX Space Challenge looking for innovative solutions to support **Reimagining Fixed and Mobile Energy Generation**.

Subject matter experts from the government have carefully evaluated this submission and ranked it within the top 15% of all solution submissions. **Reimagining Fixed and Mobile Energy Generation** is therefore determined to be in possession of a solution that meets critical AF needs.

As the AFWIC Deputy Team Lead in Disruptive Technologies, I can attest to the potential this solution has to meeting critical technical needs within our Mission Area.

Our scientists and engineers in this area are interested in utilizing the products from this research effort to advance their programs and cooperate with our acquisition partners at agencies within the DoD to enable superior technologies and capabilities to ensure US energy superiority.

Nathan K. Chang

NATHAN K. CHANG, Lt Col, USAF
AFWIC Deputy Team Lead, Disruptive Technologies
nathan.chang@us.af.mil



One of the most exciting things about our technology, is the flexibility to adjust the system for most of our customer requirements, from marketing, events, special lighting, option color configurations and electrical configurations. The systems are so silent you will not even know they're running. With virtually Zero Maintenance, no other system worldwide can compare, backed again with one of the best Warranties in the market. 100 % produced and Manufacture in the USA. Our Manufacturing and Assembly plant is in Melbourne, Florida.

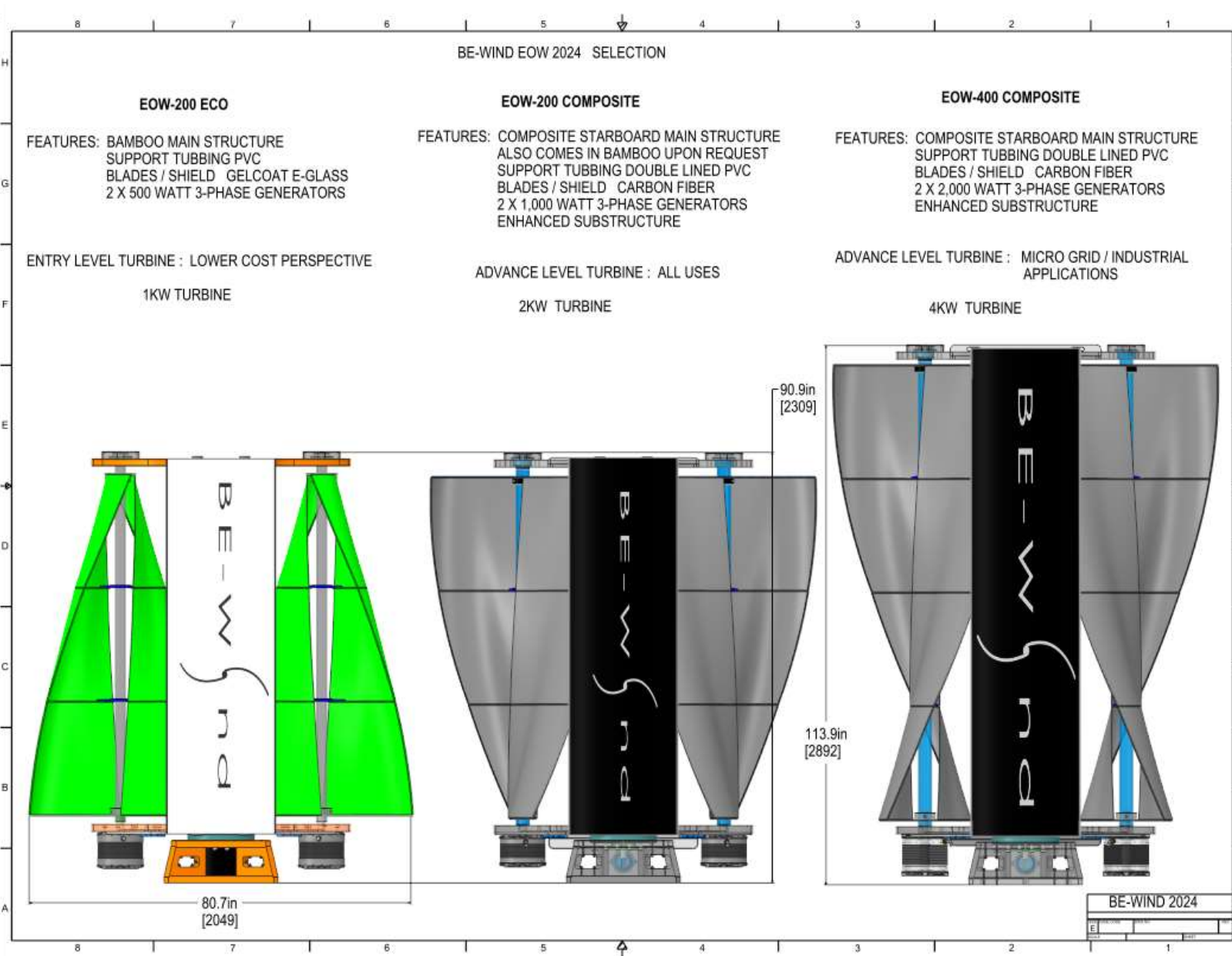
BE-WIND PRODUCTS 2024

The **EOW-Dual** systems now only come's in our 200-400 Design structure and are available in 3 options. EOW-200-**ECO**, EOW-200-Composite, EOW-400-Composite and offer power generation from 1-kw, 2 kw and 4-kw total.

In 2023 late spring and early summer we will hope to be offering a new more powerful Option for the EOW-400 only.

Generator Options will remain in 96 VAC options to allow for battery storage and Grid tie thru. hybrid inverters. Offering grid tie through inverter chargers from battery source only.

The focus is towards the ever-growing battery storage capacity. With optional options for direct Grid connection with the turbine and offering a more advanced in-house controller for power source to either battery or direct grid connection.

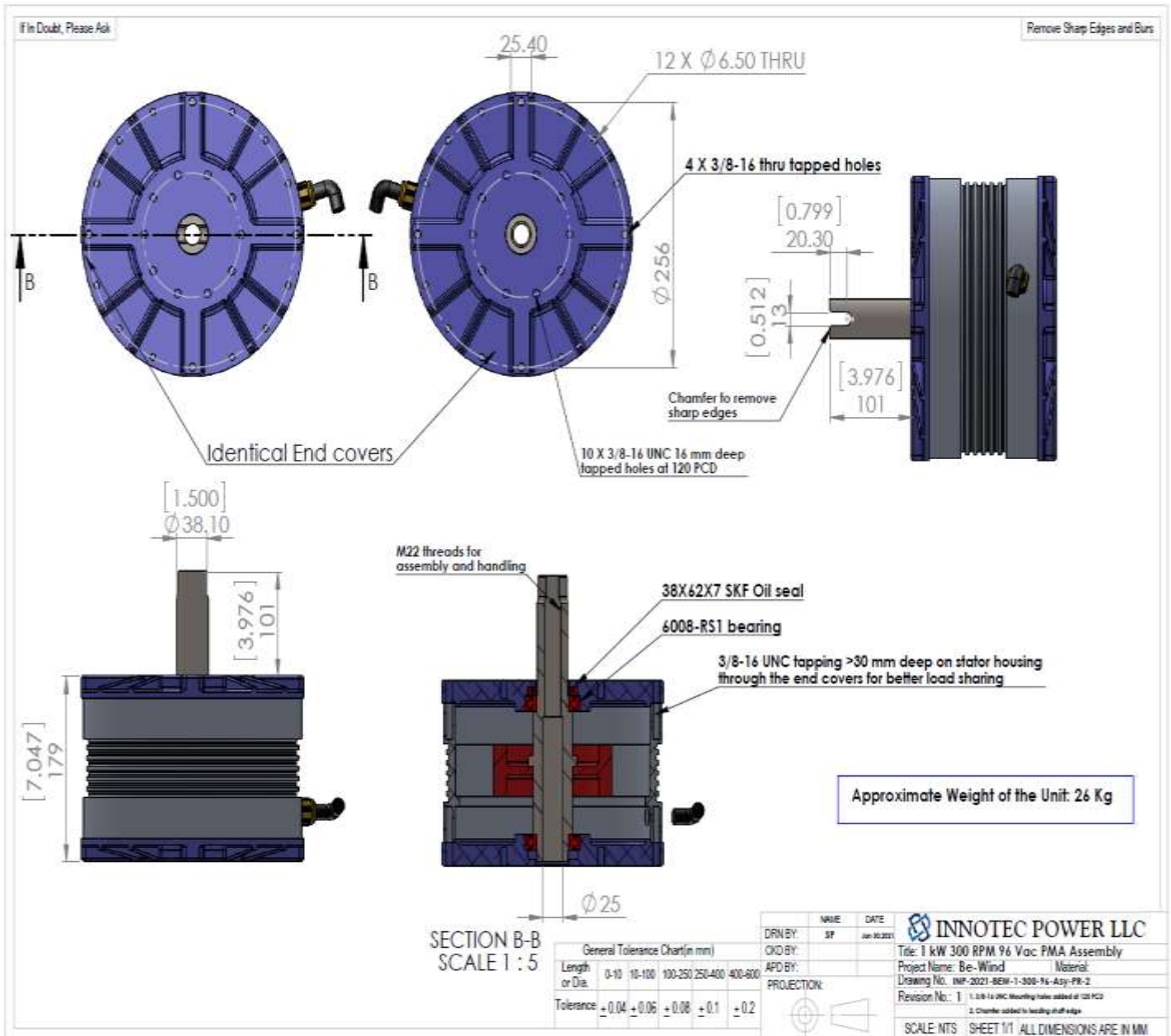


Generator technology:

Currently our generators are high performance PMG low RPM, low torque to take advantage of most optimal wind conditions. With a maximum of 400 rpm under max rated wind conditions for all 3 designs. Developed through blade gapping technology and applied directly to the aerodynamics of the system.

Please review the systems Below and feel free to contact us or any distributor to discuss. Which Options would best fit your requirements and Budget?

All generators are 3-phase 96 VAC rated at 350 rpm.



PRODUCT OVERVIEW AND DESIGN INFORMATION

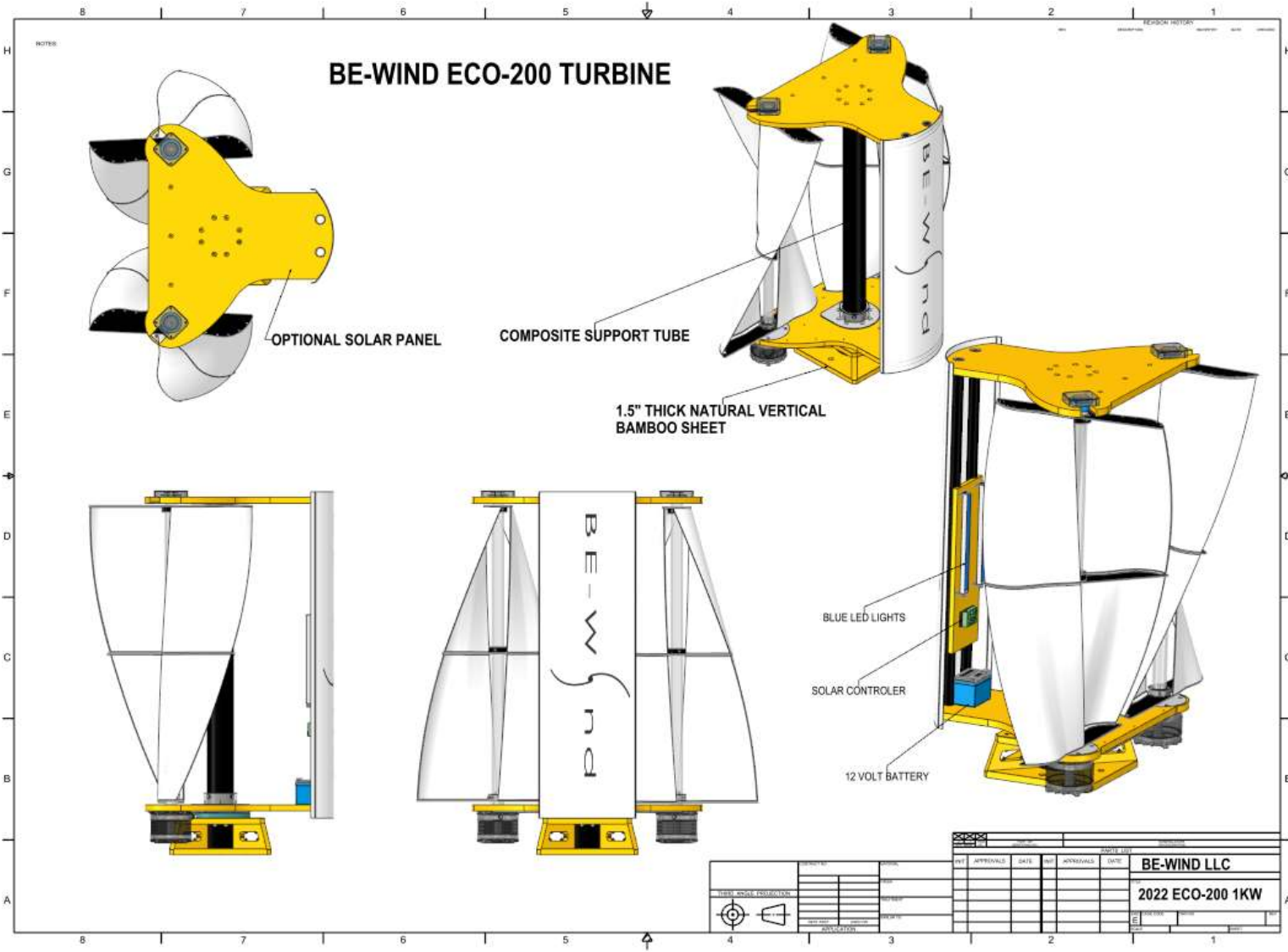
EOW-200-ECO BAMBOO SERIES NEW FOR 2024

Primary Applications: Remote small homes or cottages, tiny house construction, Container construction, remote Buildings and roof top structures.

Offering, Battery support, smaller power requirements. Power configuration is a standard 2 x 500 watt generators 96-volt VAC 3-phase Which are converted using our Custom controller to DC for most storage applications. Or off the shelf Wind MPPT charge controllers. This system is focused on Battery storage systems and introductory wind turbine enthusiasts. Compact and durable. This system boasts a much lower introductory Cost but maintains the BE-WIND performance.

The Bamboo structure is manufactured the same as the Composite units but require a little more maintenance. Sealed with protective weather coating. The new Fiberglass laminated blades and shield are also less costly than the Carbon fiber cloth. Yet support the structural integrity for longevity. Optional Carbon blades available. We offer simple configurations with optional lighting package.

EOW-200-ECO DUAL SYSTEM





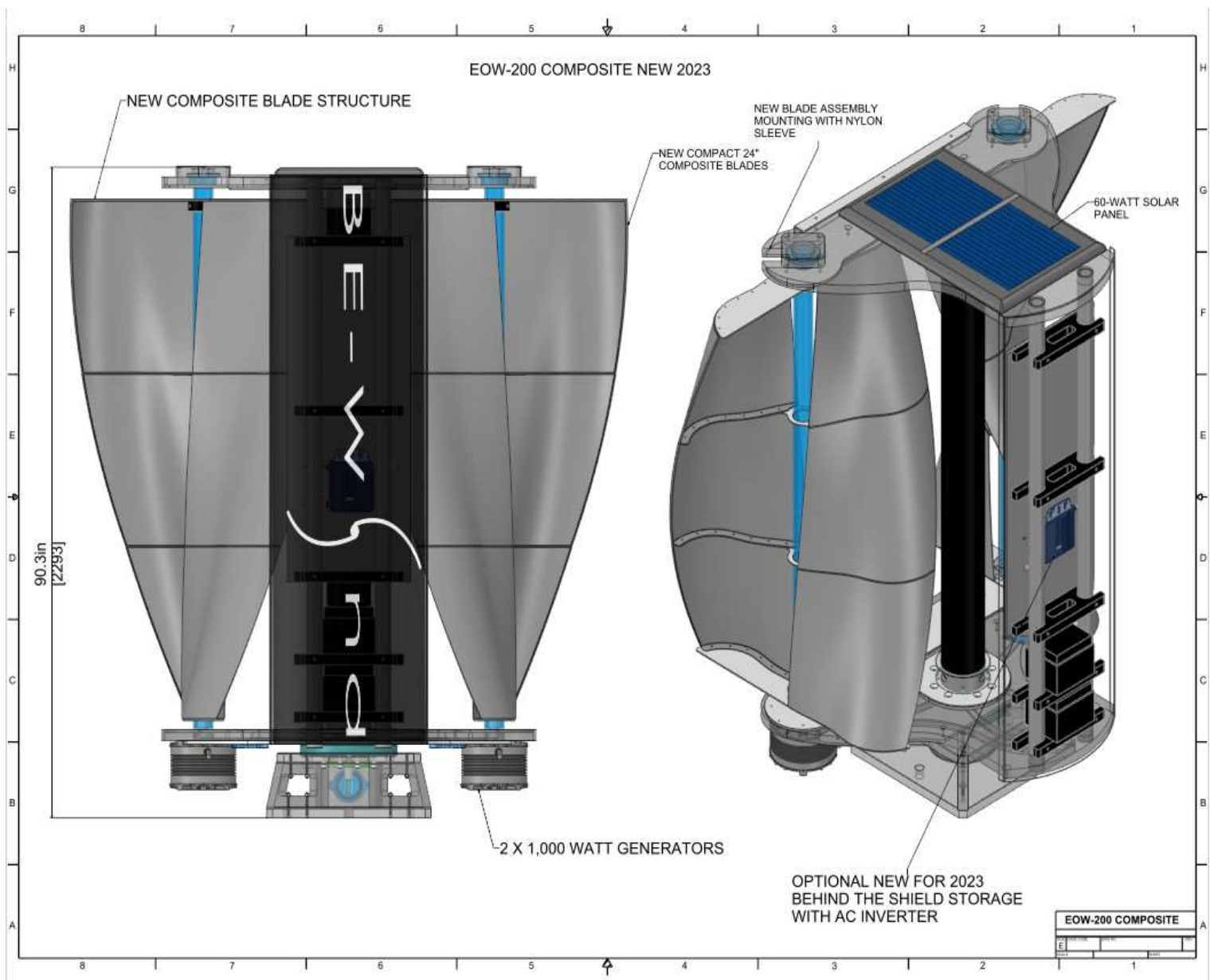
EOW-200 SERIES “Flagship Product.”

Primary Applications:

Developed for the Urban environment and small business applications. This is our most popular system. Great for Homes, Cottages, Barns, Small business
Excellent for off grid applications using 96 vac generators for 12/24/48 volt or Hybrid inverter charger for Grid connection. Supporting any type of Battery systems.
The turbines are fully customizable with colors, Decals or special lighting effects.
These units are powered by 2 x 1kw 3-phase VAC generators. Blades and shields are Carbon fiber composite for extreme strength and longevity. Internal Structural poles are PVC high strength UV schedule 80. High strength tubing. With internal structural support.

For direct Grid applications 50hz – 60hz The Victron inverters and charges convert directly from the Batteries allowing us flexibility in power output. Or low voltage Solar inverters can be used for Grid Tie applications.

EOW-200-COMPOSITE DUAL SYSTEM



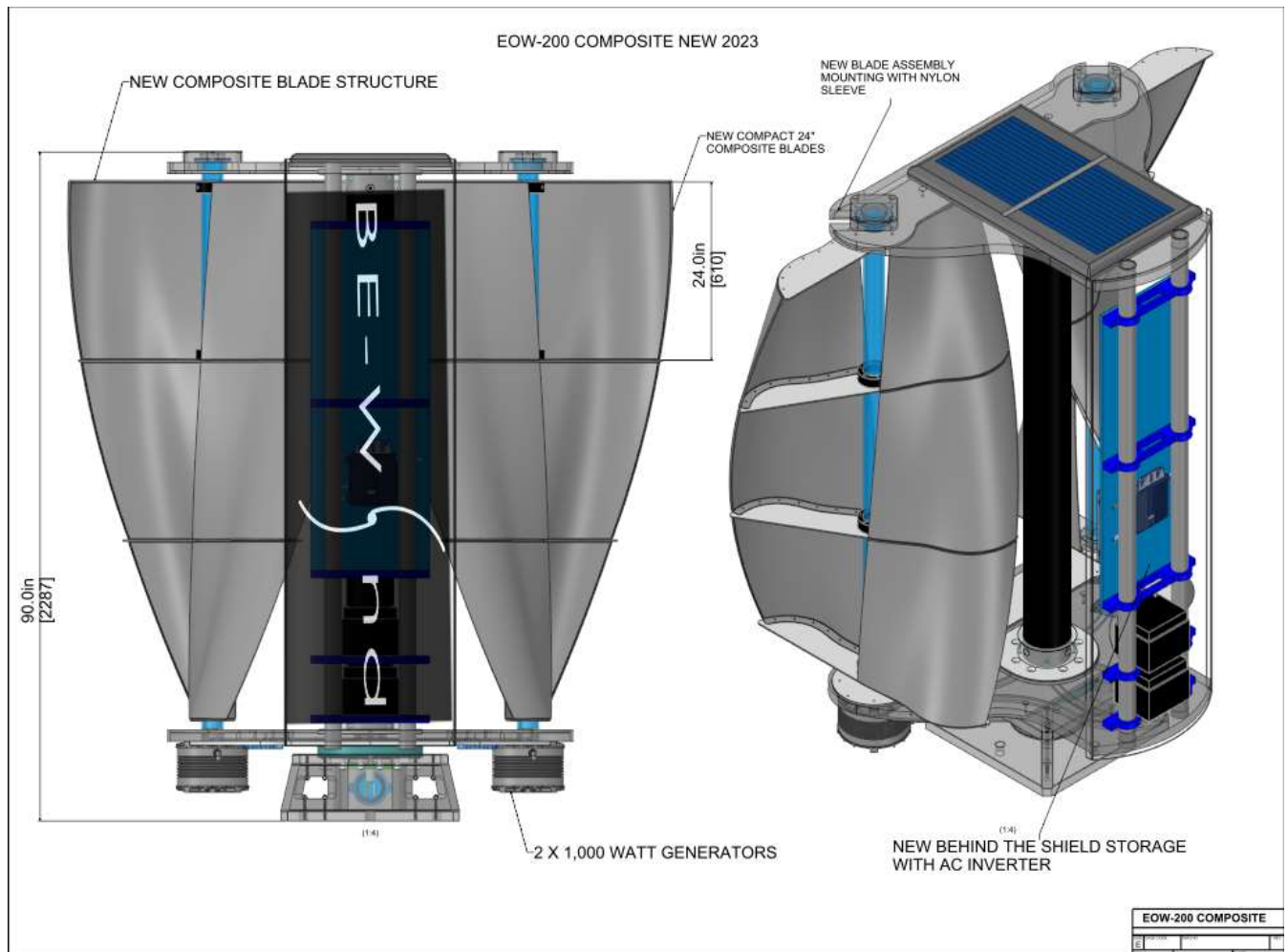
All around the EOW-200 is our most popular system to date and has been the Flagship from the start. Perfectly matched for almost any Application including Homes and small business, Farmers, Ranches and Cottages or Island homes. The design brings the most efficient wind energy in the world. 2024 series Now offers new energy packages.

As an option, Our Victron MPPT Controller is designed to work with multiple Battery Types. With Bluetooth and Wi-Fi data monitoring, along with all the other Victron features. Supporting Hybrid Wind / Solar applications.

Compact enough for easy shipping and installation, yet capable of offer the best performance and annual power production. Flexible with multiple color configurations and electrical configurations. The new 24" blade design and Top slotted structure allows for a more compact shipping solution, reducing the larger shipping crates.

This system stands alone amongst any vertical system on the market.

Designed for extreme wind conditions. This is our recommended product for most standard. Wind installations.



EOW-400 SERIES

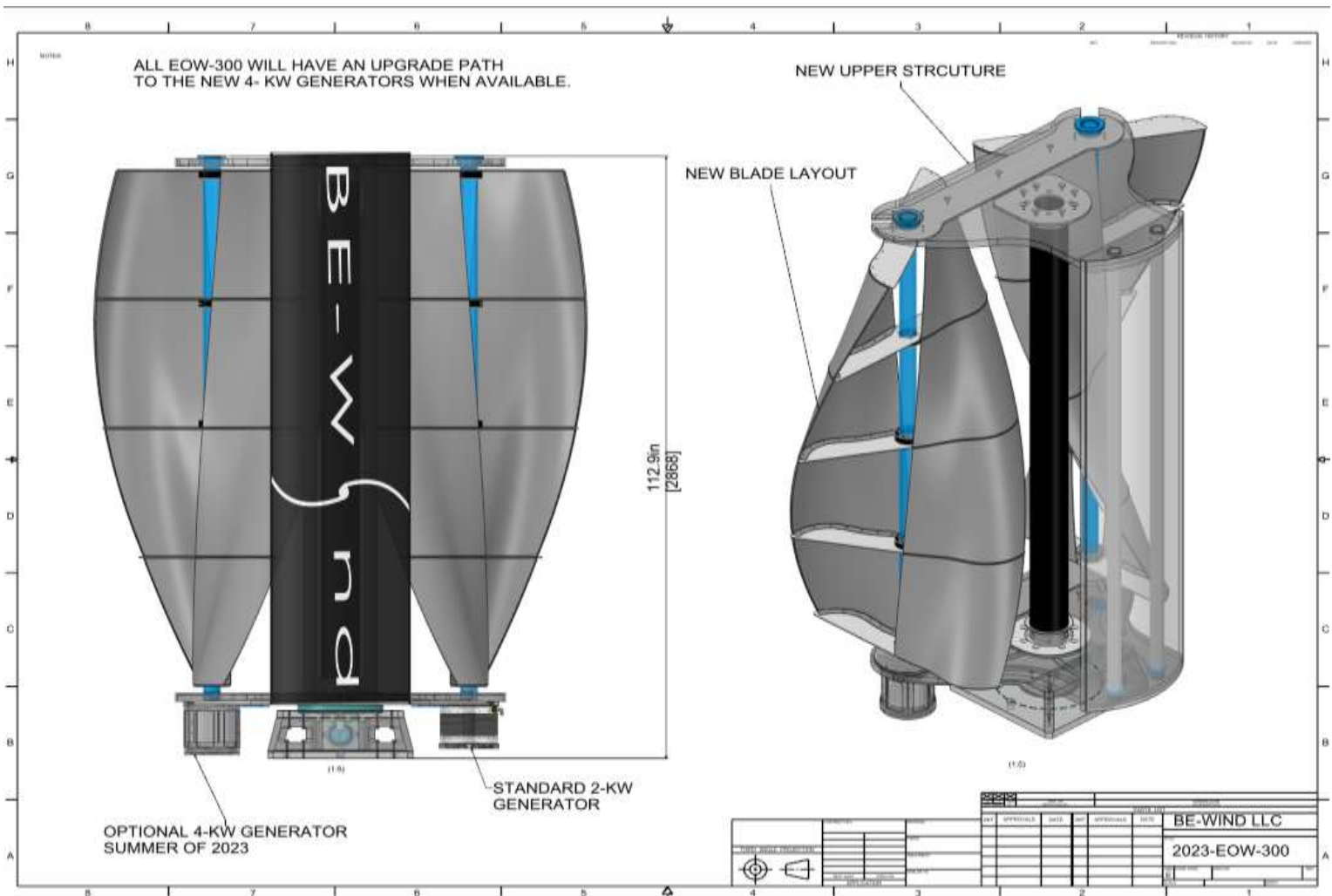
The EOW-400 (Formally the EOW-300) has been redesigned and enhanced for higher Production and Future Expansion.

The 400 is now available as a total re-design to incorporate a more powerful system That will have a specific focus and customer base.

Catered to Micro grid and higher Power applications, this is a perfect system for low-cost micro grids and hybrid systems or plainly just more power needs.

The new design offers 2x 1-kw or 2 x 2-kw, Dual blade or Triple Blade setup for lower wind conditions. This option is available on our 200-Composite series as well.

This unit was designed as a Micro grid or Hybrid solution with a similar design, but with a higher re-enforced sub structure to support the bigger generators and higher wind loads. Designed specifically for Business and Micro Grid applications, requiring larger power needs or Extreme home locations, Ground based Telecom and localized EV charging sources. along with new electronics from Victron, supporting Hybrid interaction with Solar applications and larger storage capacities.





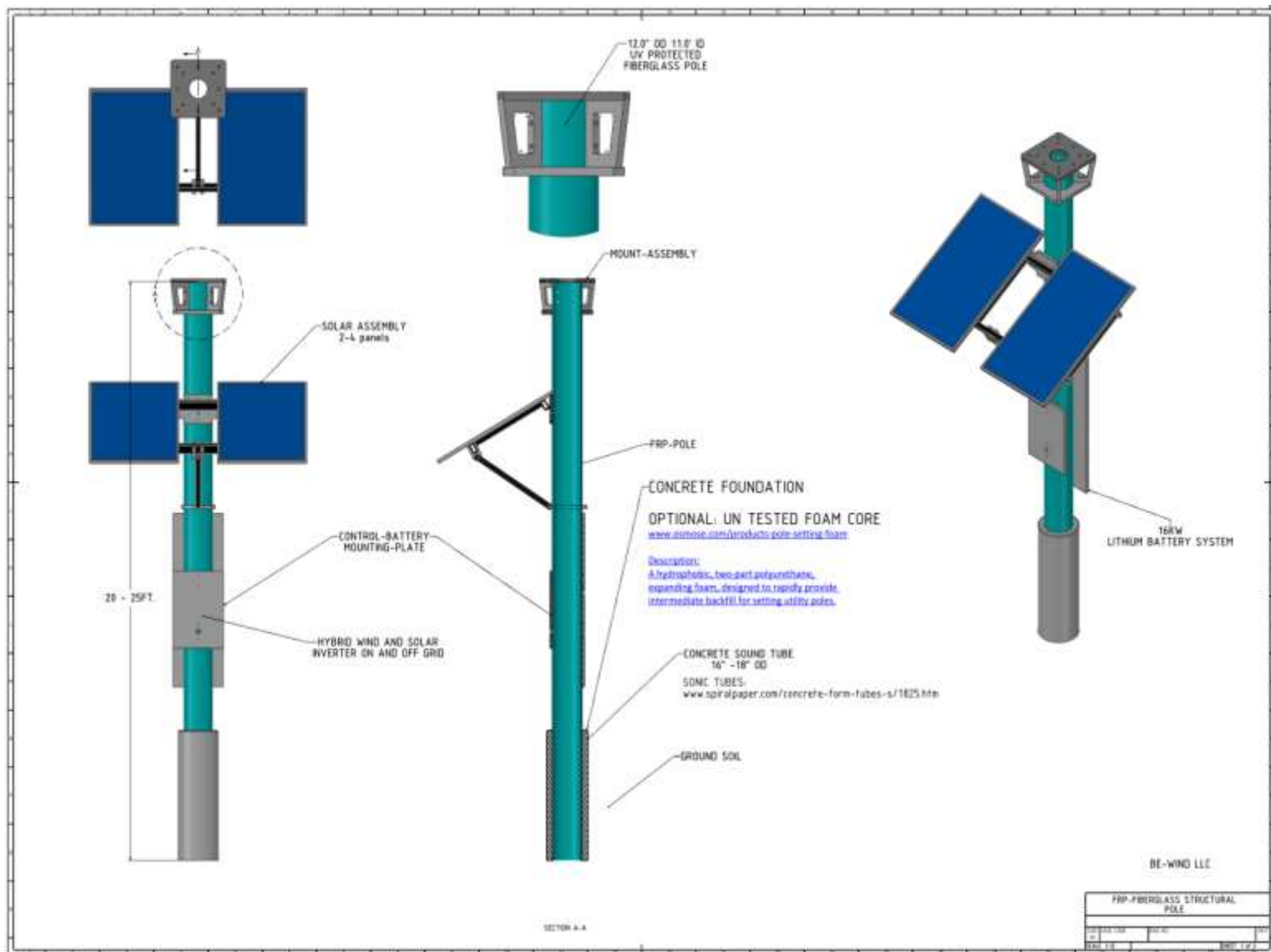
For mounting structures, we can share our designs and mounting configurations. If you wish to build your own (DIY) structure. This can save costs and shipping expenses. BE-WIND is happy to support you as much as we can. As of 2023 we will no longer offer Metal Poles as our Composite structures are more Cost beneficial and our new Composite pole mounting brackets are far more flexible. However, we can share our older metal design for DIY constructions.

MOUNTINGS AND SPECIAL APPLICATIONS

BE-WIND has developed many special mounting configurations for clients all over the world.

Our standard mounting configurations will now consist of 12” Diameter extruded FRP Composite pole or Schedule 80 PVC With several ground attachment configurations. This pole design has a standard length of 20 ft. 15 ft. from the ground base as it should be Placed at least 5ft into the ground with concrete or foam support.

Composite Structure

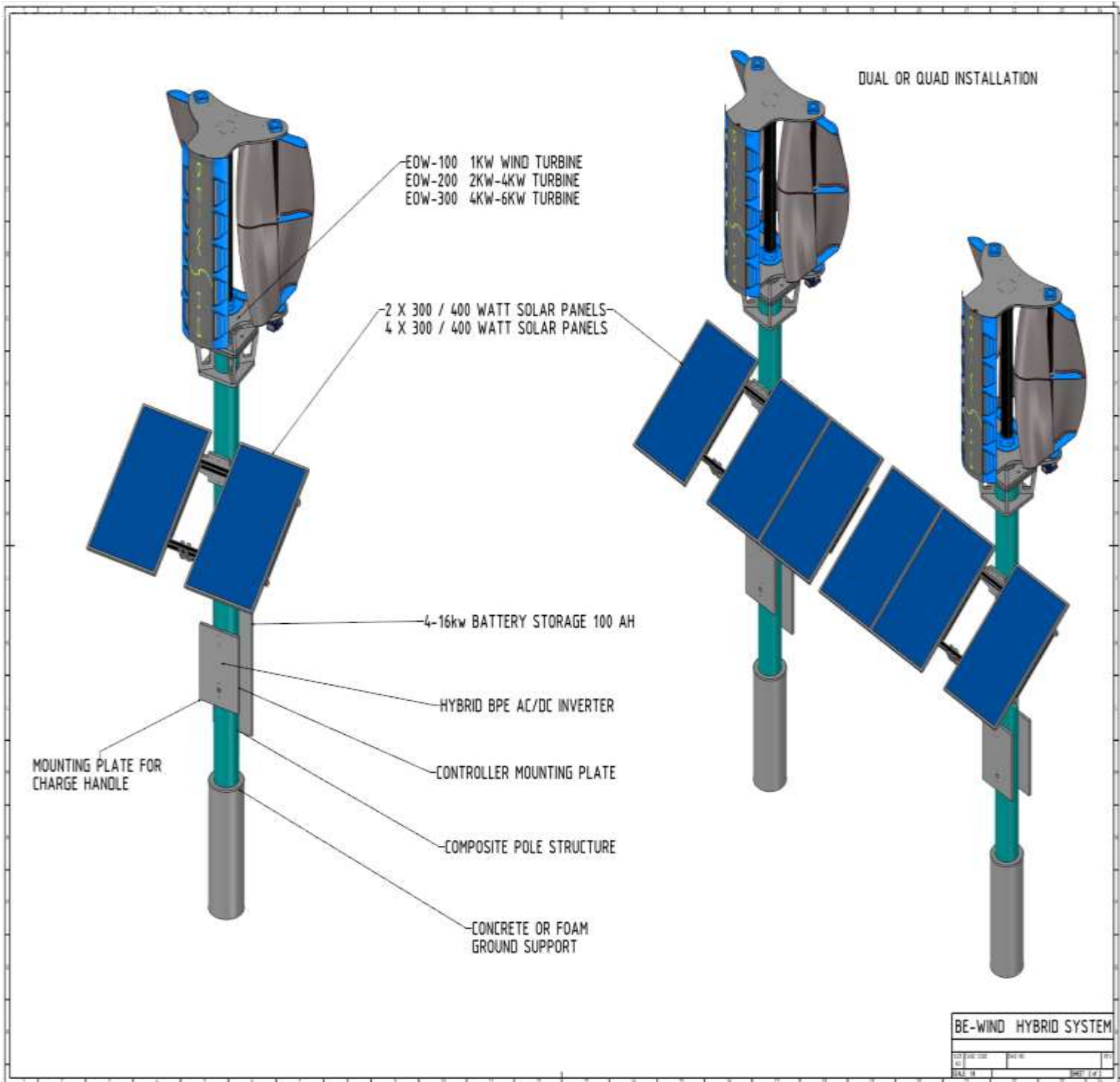


Custom configurations are available for solar mounting.

Either dual solar panel, or quad for special configurations and power requirements, can be designed into the mounting supports.

Contact the distributor or BE-WIND to discuss options and designs.

Hybrid Wind / Solar Arrays

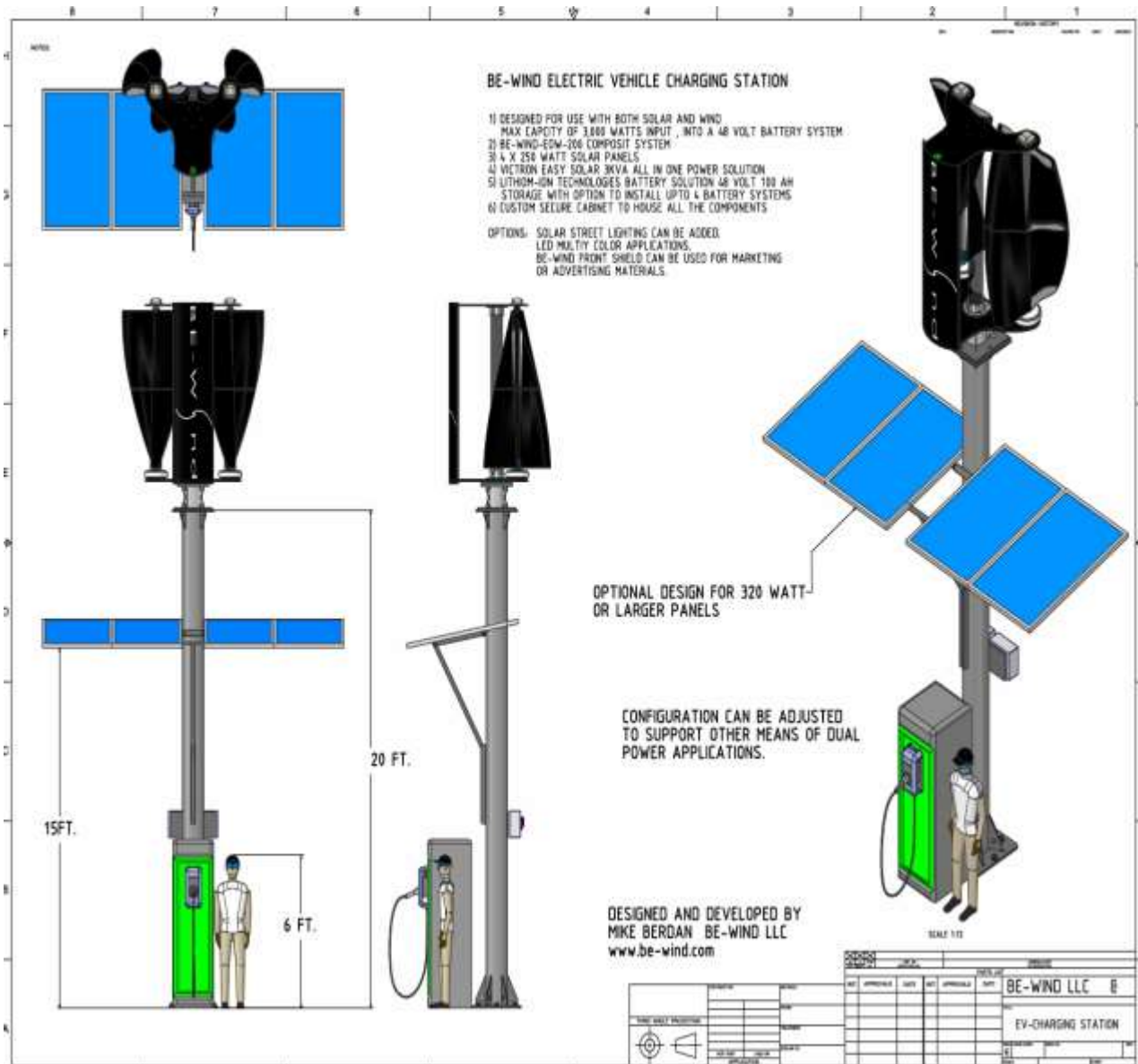


Hybrid configuration

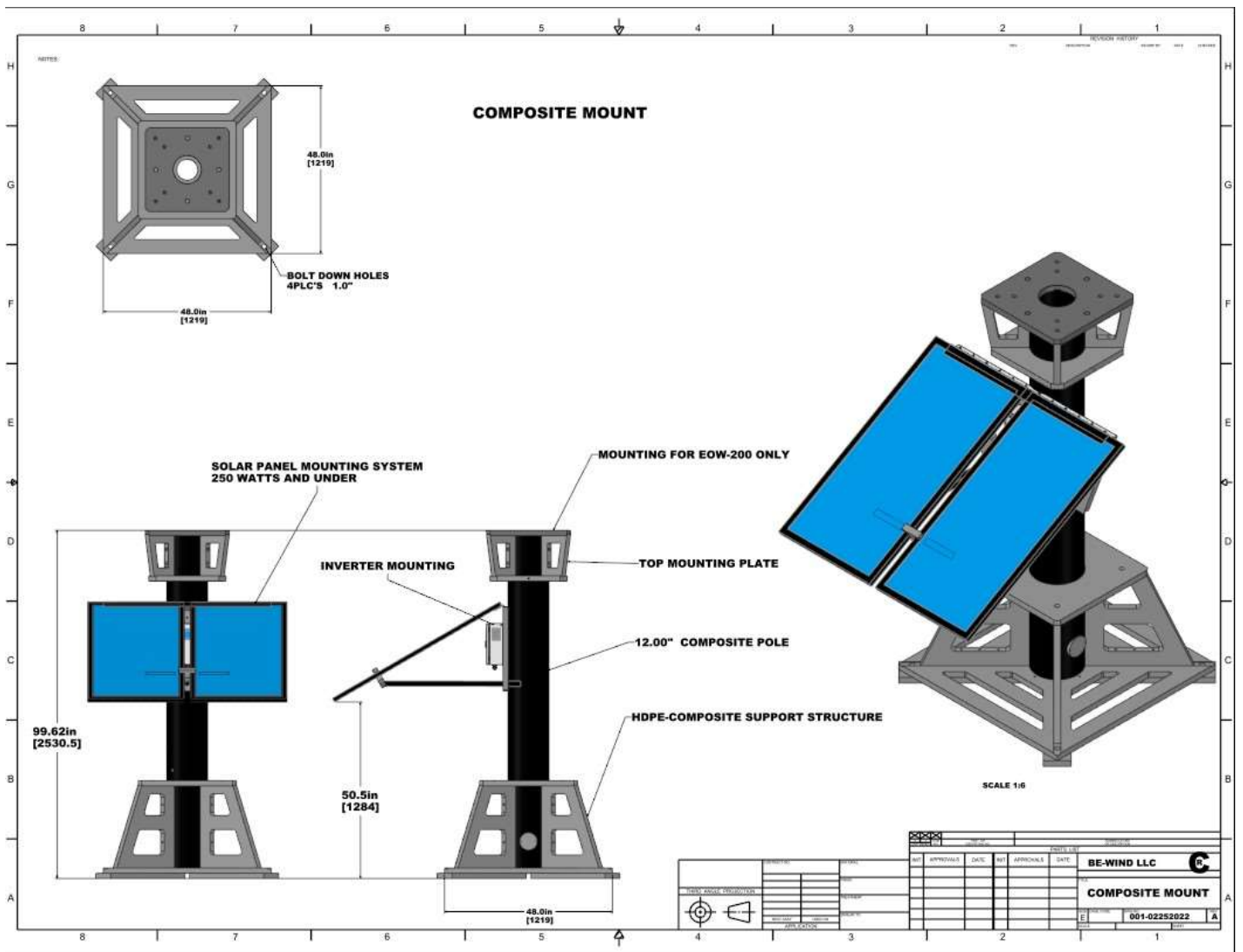
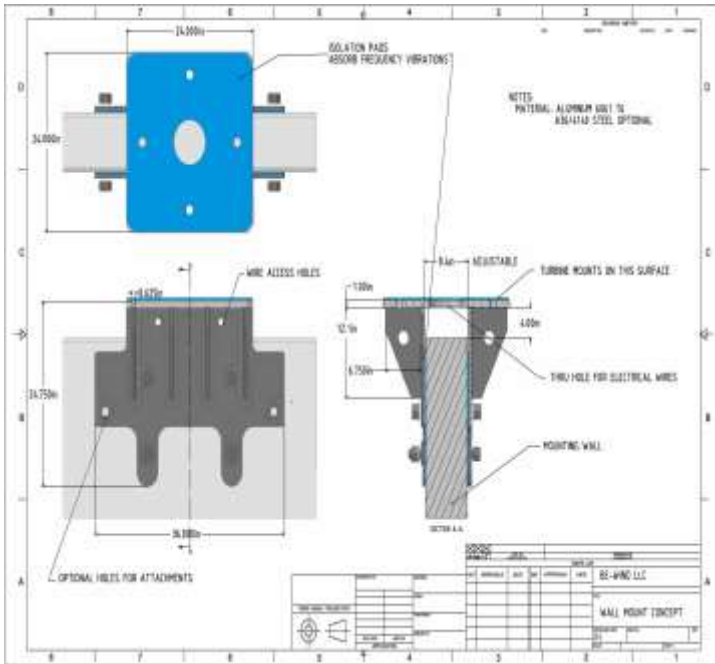
With the latest growth in Hybrid vehicles and new Electric cars, or even Clients looking for a bit of both Solar and Wind, our Hybrid systems Are designed to incorporate a little of both power options. New emerging hybrid controllers allow us to combine both power sources into a strong battery storage capacity and export directly to the grid.

EV-CAR CHARGING STATION

Taking the same hybrid configurations, we can use Car charging stations in lieu of the hybrid controllers, to store whatever power we can into a charging bank, that can be remotely installed or directly mounted to the Pole. Where Grid power is accessible or nonexistent. Combined with a solar array, we offer a hybrid storage approach.



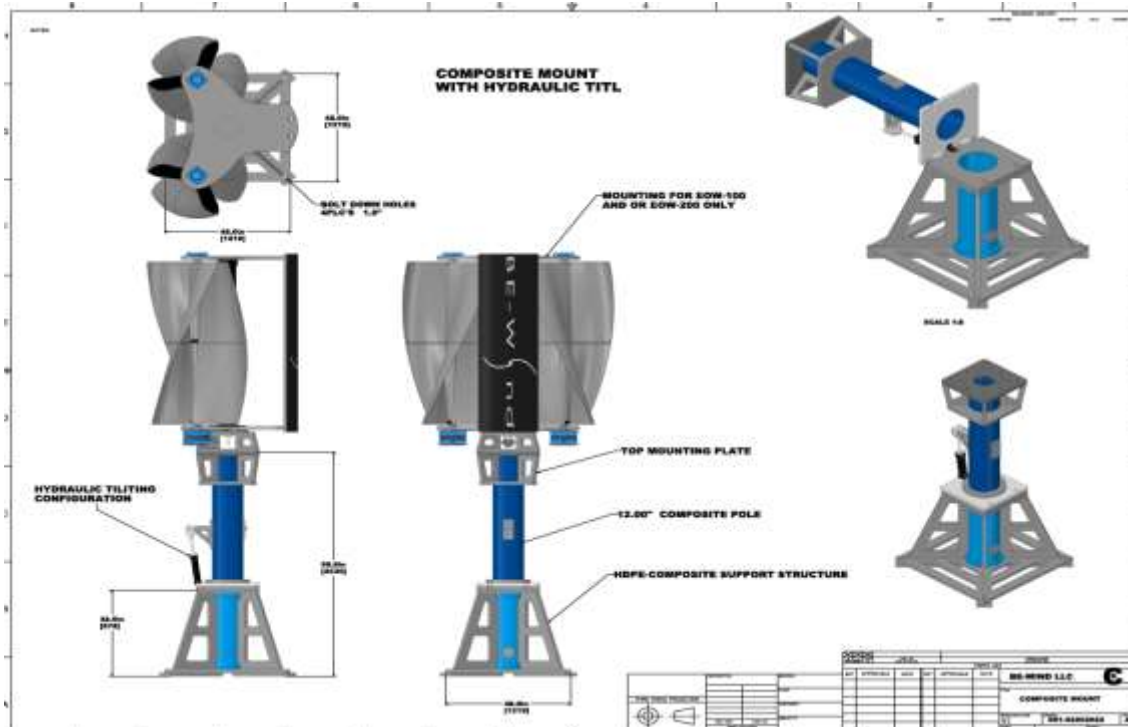
CUSTOM ROOF TOP MOUNTING



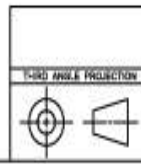
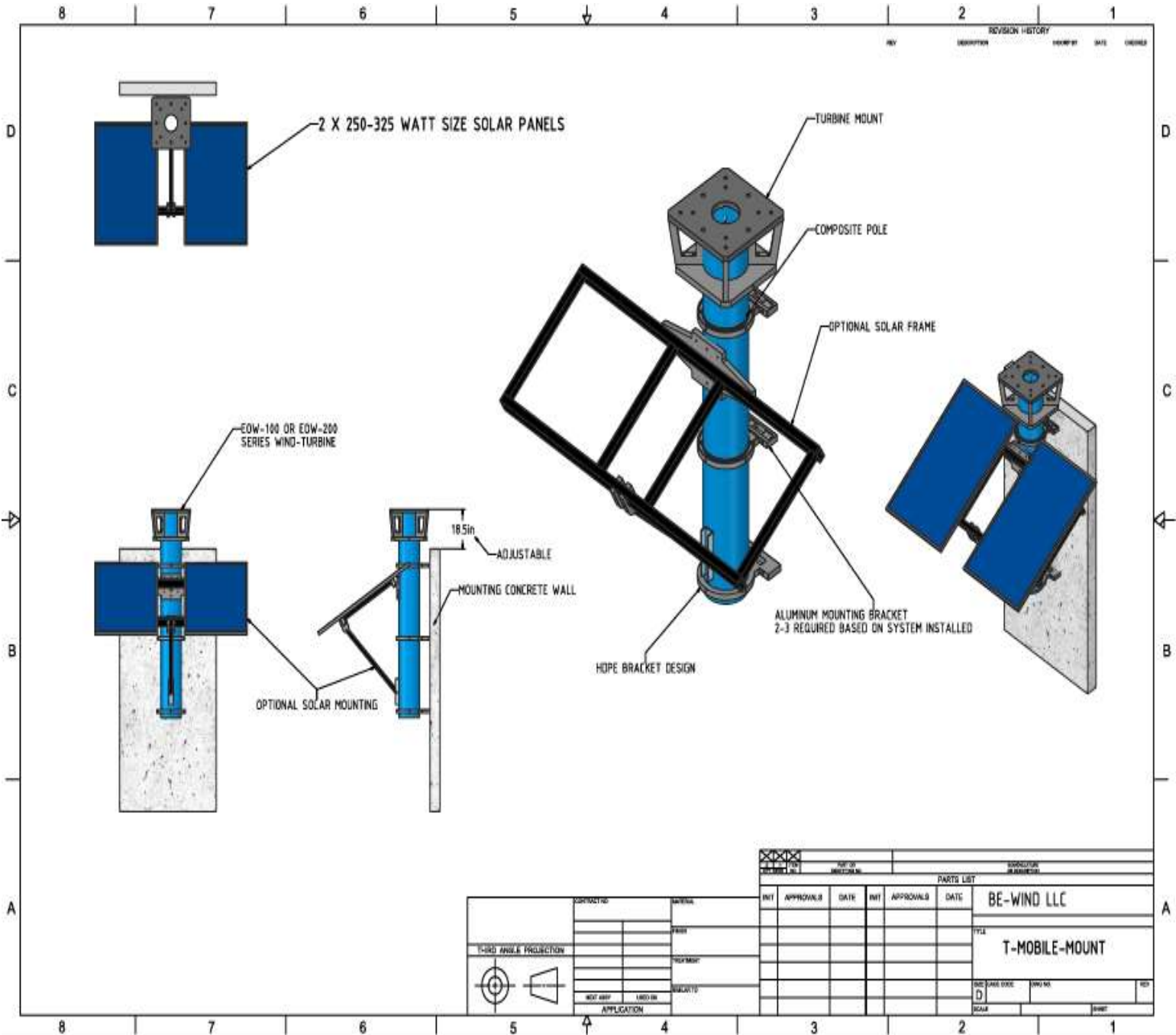
CUSTOM GROUND CONFIGURATIONS



Tilt options for Hurricane weather conditions.



Side Wall mounting Configurations.



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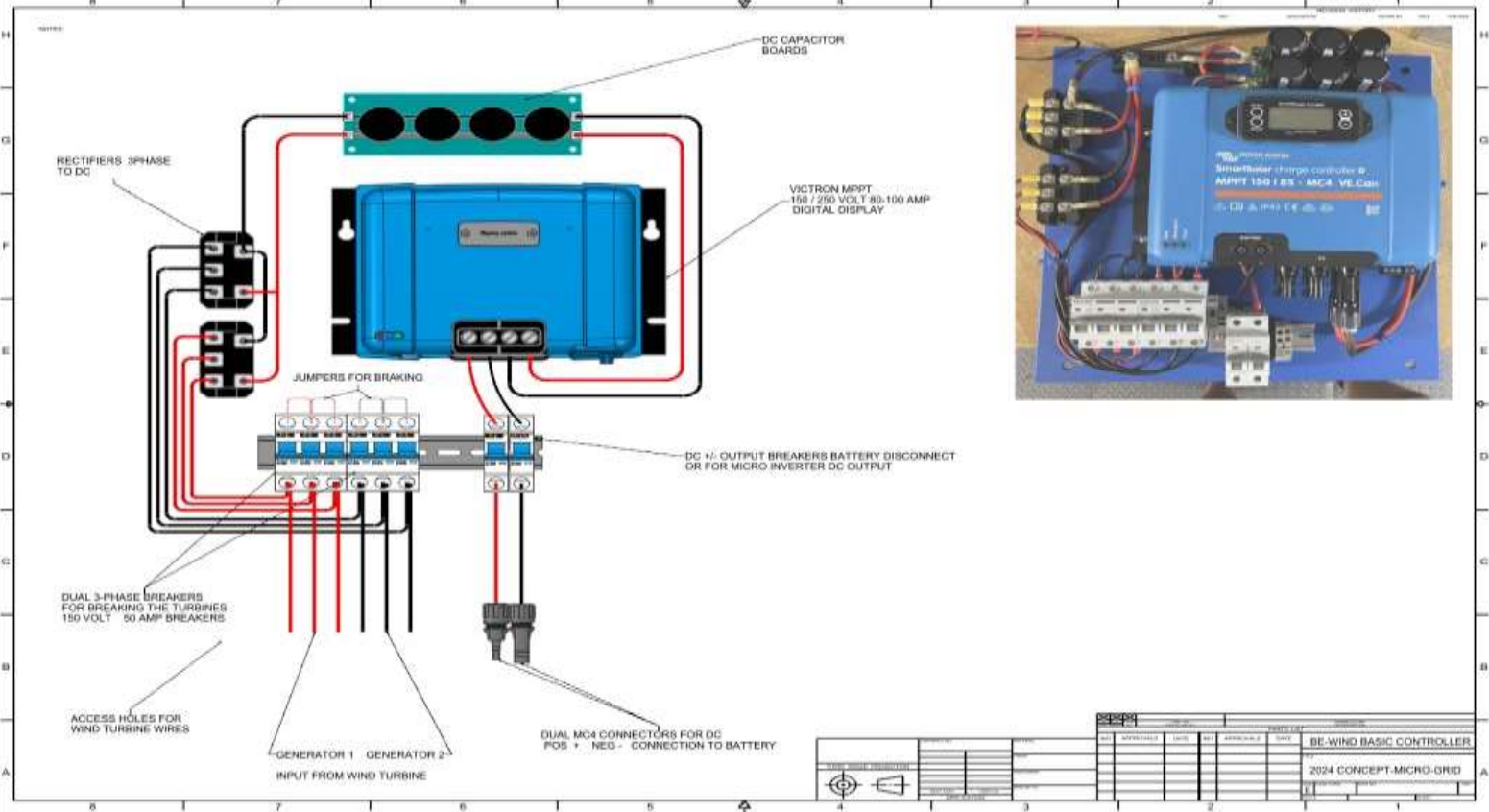
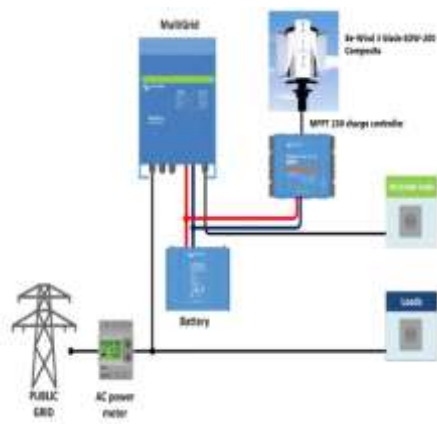


ELECTRICAL / STORAGE CONFIGURATIONS

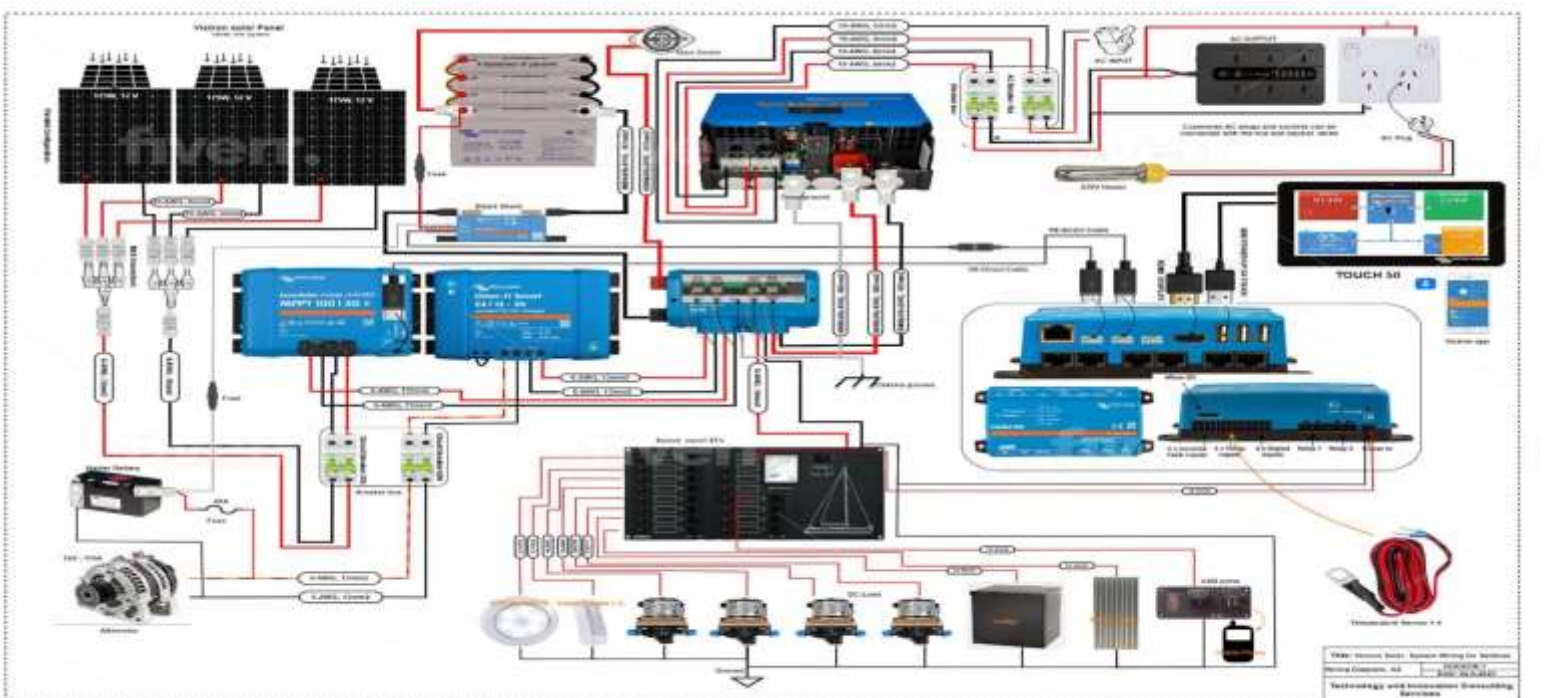
STANDARD OFF GRID CONNECTION

BE-WIND has developed its new dual Wind controller. To support direct DC output. With options to use off the shelf 12/24/48 volt MPPT charge controllers. Partnering with Victron Technology , we can not charge but invert and monitor every aspect of the Turbine. Focused on battery systems, with the most advanced Victron control. And digital monitoring system as our standard configuration.

Or we can offer simple Wind charge controllers.
To use on Grid Tie Solar inverters.



NO.	DESCRIPTION	DATE	REVISION	BY	DATE
1	BE-WIND BASIC CONTROLLER				
2	2024 CONCEPT-MICRO-GRID				



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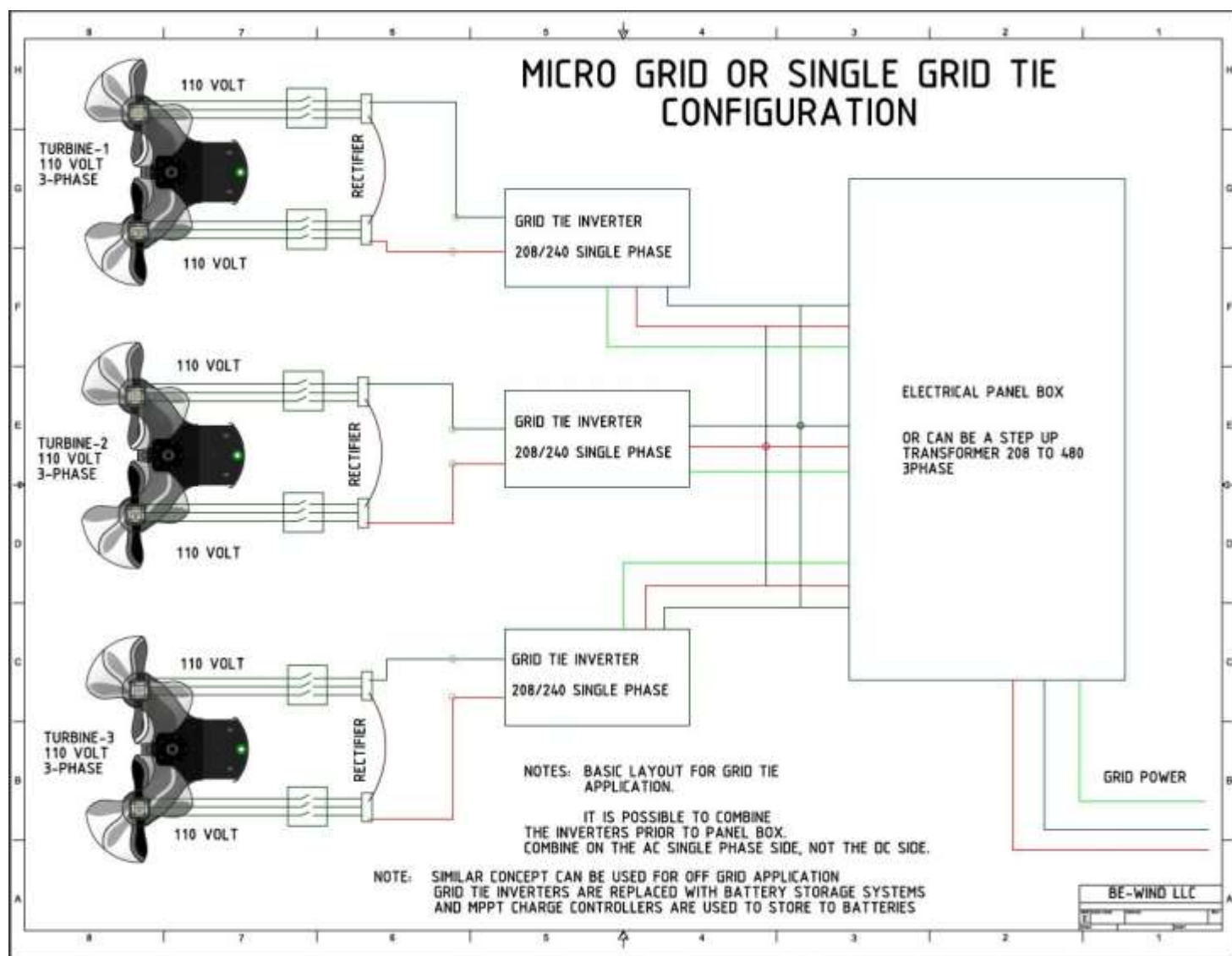
CUSTOM CONTROLLERS

BE-WIND can also be used with a multiple off the shelf controllers

For battery storage systems, or direct grid tie applications, so let us know if you have another items in mind. With other systems, we can just supply a Conversion box from VAC to VDC



SIMPLE MICRO GRID APPLICATIONS



Storage Systems

BE-WIND is compatible with all forms of Battery systems, from GEL, Lithium, Salt Water and older LED Acid technologies. But in 2024 we recognize a need to focus on a battery that fits multiple applications and supports our needs to offer a complete package solution. As well as serviced and produced in North America. In January 2024 we partnered with DragonFly technologies. <https://dragonflyenergy.com> Giving us the experience and knowledge to support your any size solution.

SHOP OUR FULL LINEUP OF LITHIUM-ION BATTERIES (LiFePO4)



Thank you for the inquiry and please don't hesitate to let any of us at BE-WIND know how you feel. About us or our technology. We have selected Vertical technology, because we discovered that it can present far more options and capability than standard horizontal systems of its same output. We promote all forms of Wind systems both Horizontal and Vertical as each can offer different solutions.

Our product was developed from years of input from Consumers and Engineers. The approach was to enable a system that can enter the Urban environment, Where Horizontal systems are not feasible and mounting can be low to ground for Service, installation and a small footprint.

The Engineering never stops at BE-WIND, we are always looking for newer and better solutions, as well as partners to help improve and refine the technology. Our Vertical system has set new standards for VAWTs all over the world. We only hope to continue to refine and enhance its capability. The **Evolution of Wind Development** began in May of 2007, we started testing products in 2010 and Patented in 2012. Our first production units were finalized for Market Ready in January of 2016 with the Introduction EOW-DUAL SERIES.

In 2019 we completely transformed the structure from aluminum to composite materials, reducing Weight and adding higher corrosion durability as well as new generator mounting and configurations. In 2021 we continued to enhance the design with new Blade mounting and upper bearing supports To ensure higher wind loading for the increase in weather conditions throughout the world. In 2024 we focused on new electronics and Structural components to allow for lower costs and easier DIY applications.

Several new designs are on the horizon for new markets and increased power performance. All thru emerging electronics, Batteries new Aerodynamics and advanced generator / alternator technology.

You can find the Contact information on our website at www.be-wind.com

Under the contact tab. Or email directly to mberdan@be-wind.com

BE-WIND LLC

<http://www.be-wind.com>

Michael Berdan

Founder/ ME. Engineer