TOWN OF PLAINFIELD
ZONING AND BUILDING PERMIT APPLICATION

Property Owner:

Name: John A Devittori
Phone: (603) 686-2604
Street: 130 Willow Brook Road
Email: adevittori2@gmail.com
City State Zip: Plainfield, NH 03781

Project:

Permit Type: (Check one) ☒ Building ☐ Zoning

Street Address: 130 Willow Brook Road

Tax Map: 233 Lot Number: 3 Lot Acreage: 28.4 Zoning District: Rural Residential (RR)

Proposed project distances to property lines (in feet): Front: 245 Rear: 617 Side: 182 Side: 974

State Approved Septic Design #: Driveway Permit #:

Please provide a written description of the project including appropriate dimensions: Solar array uses pre-cast concrete foundation as described in attached spec sheet. Foundation is set at depth of 4 feet. Excavation is square hole at approximately 8 ft x 8 ft, to depth, then backfilled over/around foundation. Solar array wiring to run in trench as shown in attached map. Trench is approximately 2' wide and 2' depth between array and house, then backfilled.

Contractor Information:

Builder:	**Electrician:**	**Plumber:**
Name: Solaflect Energy	Name: See attached list	Name:
Phone: (802) 649-3700	Phone:	Phone:

Applicant Signature: _____ Date: 5/20/20

Required Attachments:

Please provide a copy of plans detailing the project. Hand-drawn plans can be used if necessary.
Permits cannot be issued without receipt of the proper fee. If you are unsure of the amount due or have any questions about your application, contact the town office (603-469-3201).

TOWN USE:

Current Use: Yes / No **ZBA:** Yes / No **PB:** Yes / No

BOARD OF SELECTMEN ACTION

_____

Reviewed By Building Inspector or Zoning Administrator

X Approved _____ Denied

Permit #: 2020-25 Date: 6/1/2020


Willow Brook Rd
ROAD
Willow Brook Rd
182’
245’
617’
974’
Tracker location is directly in front of pole mounted array with ~140’ trench back to house. Excavator access from road via path indicated by dashed white line
3
28.4 Ac

Tap for solar occurs :
□ On service conductors in main panel
□ In outdoor meter-breaker
☑ Other: line-side tap

Solar production conductors terminate on upper terminals in gross production meter

Existing System

Tracker Core: 6 kW System

PV Array (16 modules)

Utility Service 120/240V

Utility Net Meter

Grid tap

Primary AC Disconnect 2P40A

Main breaker at meter? NA A

Meter Location:

West side of garage

100 A
Main breaker

House Main Panel

Tracker AC Disconnect Panel (3R)
2P40A 20A GFCI

WR/TR outlet, weatherproof enclosure

Gross Production Meter *(if applicable)*

AC / DC

Fronius Primo 6.0-1 6.0 kW Inverter

PV Module # 1

PV Module # 2

...Modules 3-15...

PV Module # 16

3x 6AWG Copper THHW + 10AWG GRN in ¾" HDPE Cable In Conduit buried 18" below surface

Max DC load: 9300 WDC STC
Posted DC Disconnect Ratings
Max Voltage: 600 V DC
Max Circuit Current: 36 A DC

PV Module Description:

STC Wattage per mod: 375

Manuf: LG

Model #: LG LG375Q1C-V5

Total DC STC load: 6,000

Existing Components

New Components

Conductor notes

REV	Date	Description
0	05/26/20	Initial release

SOLAFLECT ENERGY
Norwich, VT 05055 (802) 281 4284

DIMENSIONS IN INCHES
TOLERANCES:
ONE PLACE DEC. +/- 0.100
TWO PLACE DEC. +/- 0.015
THREE PLACE DEC. +/- 0.005
ANGULAR +/- 2 deg

TITLE
One Line Diagram Devittori

DRAWN DL | DATE 05/26/20

DRAWING NUMBER SFxxxxx

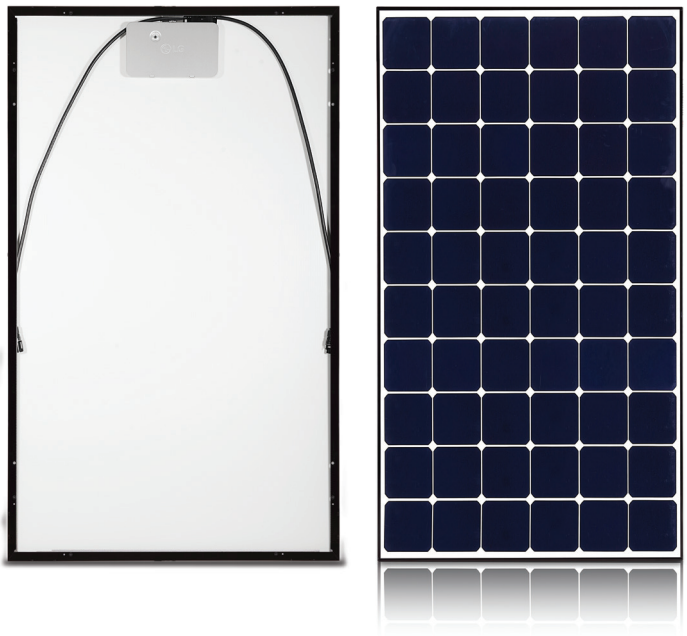
LG NeON®R ACe

60

LG370A1C-V5 | LG375A1C-V5 | LG380A1C-V5

370W | 375W | 380W

LG NeON® ACe is a high-power AC module based on our premium NeON® R series. The NeON® ACe is a smart AC module that is easy to install and monitor, provides increased flexibility for array design and is an excellent solution for home installation.



25 YEAR
PARTS • PERFORMANCE • LABOR
WARRANTY

Features

High Output and Efficiency

The LG NeON® R series has been designed for high-power output making it efficient even in limited space.

25-Year Warranty

The NeON® R series offers a 25-year limited warranty for performance, product and labor At 25 years, the modules are guaranteed to produce at least 90.8% of their labeled power output.

Roof Aesthetics

The LG NeON® R series has been designed with aesthetics in mind; with no electrodes on the front, the modules have a sleek, modern appearance.

Flexible Array Design

The LG NeON® R ACe provides flexibility in array design, with simple accessories and cable connections.

Excellent Performance on Hot Days

The LG NeON® R series performs well on hot days due to a low temperature coefficient.

Easy Monitoring

LG NeON® R Ace connects quickly and easily to the Internet. Registering the modules onto the system is a simple process.

When you go solar, ask for the brand you can trust: LG Solar

About LG Electronics

LG Electronics is a global leader in electronic products in the clean energy markets by offering solar PV panels and energy storage systems. The company first embarked on a solar energy source research program in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry and materials industries. In 2010, LG Solar successfully released its first MonoX® series to the market, which is now available in 32 countries. The NeON® (previous MonoX® NeON), NeON®2, NeON®2 BiFacial won the "Intersolar AWARD" in 2013, 2015 and 2016, which demonstrates LG's leadership and innovation in the solar industry.

LG Solar

LG NeON®R ACe

LG370A1C-V5 | LG375A1C-V5 | LG380A1C-V5

Preliminary

General Data

Cells	6 x10
Cell Vendor	LG
Cell Type	Monocrystalline/N-type
Cell Dimensions	161.7 x 161.7 mm/6 inches
Number of Busbars	30 EA (Multi Wire Busbar)
Dimensions (L x W x H)	1,700 x 1,016 x 40 mm
Weight	19.0 kg
Mechanical Test Load*	5,400Pa (Front)/4,000Pa (Rear)
Cooling	Natural Convection - No Fans
Enclosure Environmental Rating	Outdoor - NEMA 250 type 6 (Micro Inverter)
Operating Ambient Temperature	-40 ~ +65°C (-40 ~+149°F)
Storage Temperature	-40 ~ +90°C (-40 ~+194°F)
Glass	High Transmission Tempered Glass
Frame	Anodized Aluminium
Inverter Model (Grid Support Utility Interactive)	LM320UE-A2

*Mechanical Test Load 5,400pa/4,000pa based on IEC 61215 - 2:2016
(Test Load = Design Load x Safety Factor (x1.5))

Certifications and Warranty

Certifications	UL1741*, UL1703*, IEEE1547*
	FCC Part 15 Class B*
Module Fire Performance	Type 1 (UL 1703)*
Solar Module Product Warranty	25 years
Micro Inverter Warranty	25 Years
Output Warranty of Pmax (DC) (Measurement Tolerance ± 3%)	Linear Warranty**

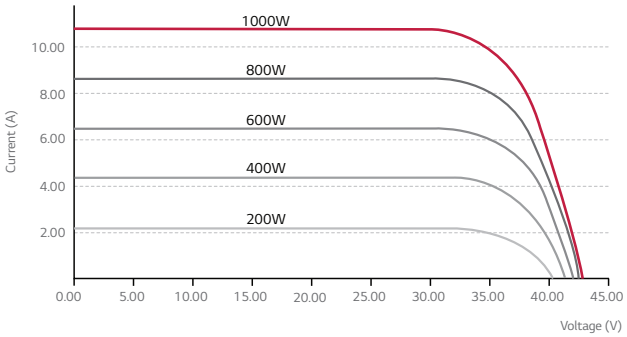
*In progress
**Improved: 1st year 98%, from 2-24th year: 0.3%/year down, after 25th year: 90.8%

DC Temperature Characteristics

NOCT*	[°C]	44±3
Pmax	[%/°C]	-0.3
Voc	[%/°C]	-0.24
Isc	[%/°C]	0.037

*NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s

Characteristic Curves



DC Electrical Properties (STC*)

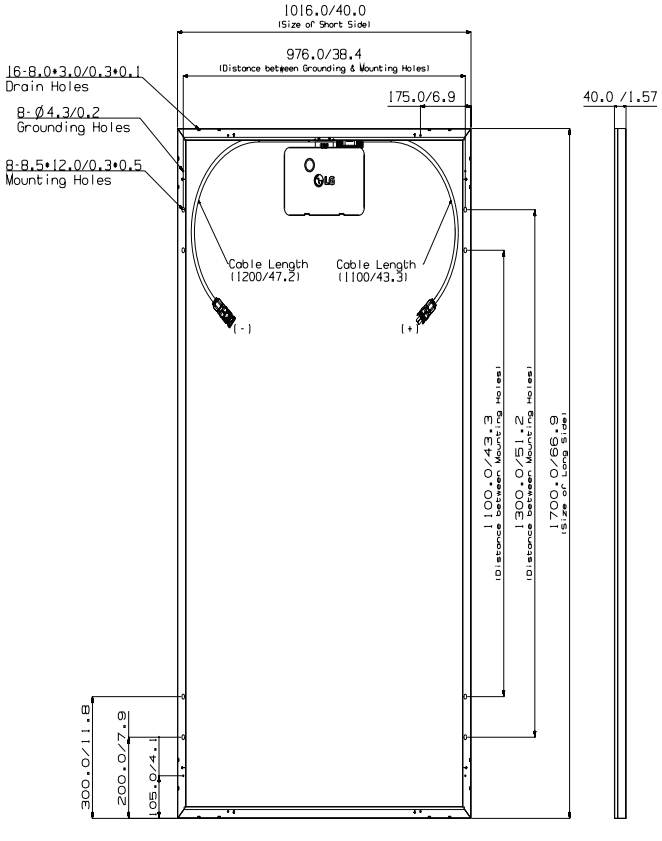
Model		LG370A1C-V5	LG375A1C-V5	LG380A1C-V5
Maximum Power (Pmax)**	[W]	370	375	380
Module Efficiency	[%]	21.4	21.7	22.0
Power Tolerance	[%]	0 ~+3		

*STC (Standard Test Condition): Irradiance 1000 W/m², Cell temperature 25°C, AM 1.5
**Measurement Tolerance of Pmax: ±3%

AC Electrical Properties

		@240VAC	@208VAC
Max. Continuous Output Power	[VA]	320	
Nominal Voltage/Range	[V]	240/211~264	208/183~229
Nominal Output Current	[A]	1.33	1.54
CEC Weighted Efficiency	[%]	97.0	96.5
Cable Length (only cable length)	[mm]	Cable 1 : 1,200	Cable 2 : 1,100
Number of Max. AC Modules	[EA]	12	10
Nominal Frequency/Range	[Hz]	60.0 / 59.3~60.5	
Power Factor/Adjustable		1/0.8leading...0.8lagging	
Max. Branch Circuit Over Current Protection	[A]	20	

Dimensions (mm/inch)



*The distance between the center of the mounting/grounding holes.

LG Electronics Inc.
Solar Business Division
2000 Millbrook Drive
Lincolnshire, IL 60069

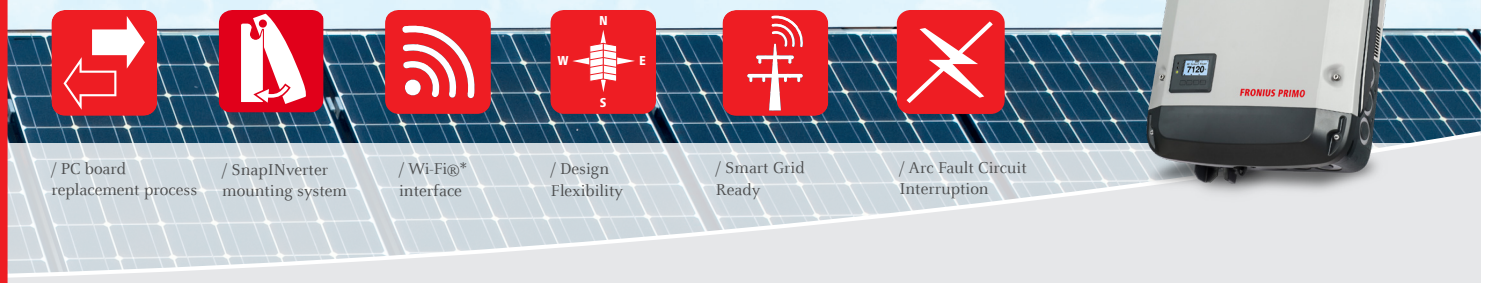
www.lg-solar.com

Product specifications are subject to change without notice.
LG370-380A1C-V5.pdf

/ Perfect Welding / Solar Energy / Perfect Charging

FRONIUS PRIMO

/ Solutions for a brighter tomorrow.



/ PC board replacement process

/ SnapINverter mounting system

/ Wi-Fi®* interface

/ Design Flexibility

/ Smart Grid Ready

/ Arc Fault Circuit Interruption

/ With power categories ranging from 3.8 kW to 15.0 kW, the transformerless Fronius Primo is the ideal compact single-phase inverter for residential applications. The sleek design is equipped with the SnapINverter hinge mounting system which allows for lightweight, secure and convenient installation. The Fronius Primo has several integrated features that set it apart from competitors including dual powerpoint trackers, high system voltage, a wide input voltage range, Wi-Fi* and SunSpec Modbus interface, and Fronius' online and mobile monitoring platform Fronius Solar.web. The Fronius Primo also works seamlessly with the Fronius Rapid Shutdown Box as a reliable rapid shutdown solution outside the PV Array boundary.

TECHNICAL DATA FRONIUS PRIMO

GENERAL DATA	FRONIUS PRIMO 3.8 - 8.2	FRONIUS PRIMO 10.0-15.0
Dimensions (width x height x depth)	16.9 x 24.7 x 8.1 in.	20.1 x 28.5 x 8.9 in.
Weight	47.29 lb.	82.5 lbs.
Protection Class	NEMA 4X	
Night time consumption	< 1 W	
Inverter topology	Transformerless	
Cooling	Variable speed fan	
Installation	Indoor and outdoor installation	
Ambient operating temperature range	-40 - 131°F (-40 - 55°C)	-40 - 140°F (-40 - 60°C)
Permitted humidity	0 - 100 %	
Elevation	4000m (13123 ft)	
DC connection terminals	4x DC+ and 4x DC- screw terminals for copper (solid / stranded / fine stranded) or aluminum (solid / stranded)	4x DC+1, 2x DC+2 and 6x DC- screw terminals for copper (solid / stranded / fine stranded) or aluminum (solid / stranded)
AC connection terminals	Screw terminals 12 - 6 AWG	
Revenue Grade Metering	Optional (ANSI C12.1 accuracy)	
Certificates and compliance with standards	UL 1741-2010 Second Edition (incl. UL1741 Supplement SA 2016-09 for California Rule 21 and Hawaiian Electric Code Rule 14H), UL1998 (for functions: AFCI, RCMU and isolation monitoring), IEEE 1547-2003, IEEE 1547.1-2003, ANSI/IEEE C62.41, FCC Part 15 A & B, NEC 2017 Article 690, C22. 2 No. 107.1-16, UL1699B Issue 2 -2013, CSA TIL M-07 Issue 1 – 2013	UL 1741-2010 Second Edition (incl. UL1741 Supplement SA 2016-09 for California Rule 21 and Hawaiian Electric Code Rule 14H), UL1998 (for functions: AFCI, RCMU and isolation monitoring), IEEE 1547-2003, IEEE 1547.1-2003, ANSI/IEEE C62.41, FCC Part 15 A & B, NEC 2017 Article 690, C22. 2 No. 107.1-16, UL1699B Issue 2 -2013, CSA TIL M-07 Issue 1 -2013

PROTECTIVE DEVICES	STANDARD WITH ALL PRIMO MODELS
DC reverse polarity protection	Yes
Anti Islanding	Internal; in accordance with UL 1741-2016-09, IEEE 1547-2003 and NEC 2017
Over temperature protection	Output power derating/ Active cooling
AFCI	Yes
Rapid shutdown compliant	Per Sect. 690.12 of 2014 (of NEC 2017 prior to Jan 2019)
Ground Fault Protection with Isolation Monitor Interrupter	Yes
DC disconnect	Yes

INTERFACES	STANDARD WITH ALL PRIMO MODELS
USB (A socket)	Datalogging and inverter update possible via USB
2x RS422 (RJ45 socket)	Fronius Solar Net, interface protocol
Wi-fi*/Ethernet LAN	Wireless standard 802.1 1 b/g/n/Fronius Solar.web, SunSpec Modbus TCP, JSON
Datalogger and Webserver	Included
Serial RS485	SunSpec Modbus RTU or meter connection
6 inputs or 4 digital inputs/outputs	Load management; signaling, multipurpose I/O

*The term Wi-Fi® is a registered trademark of the Wi-Fi Alliance.

TECHNICAL DATA FRONIUS PRIMO

INPUT DATA	PRIMO 3.8-1	PRIMO 5.0-1	PRIMO 6.0-1	PRIMO 7.6-1	PRIMO 8.2-1
Recommended PV power (kWp)	3.0 - 6.0 kW	4.0 - 7.8 kW	4.8 - 9.3 kW	6.1 - 11.7 kW	6.6 - 12.7 kW
Max. usable input current (MPPT 1/MPPT 2)	18 A / 18 A				
Max. usable input current (MPPT 1+MPPT 2)	36 A				
Max. array short circuit current (1.5* Imax) (MPPT1/MPPT2)	27 A / 27 A				
Nominal input voltage	410 V	420 V	420 V	420V	420 V
Operating voltage range	80 V - 600 V				
DC startup voltage	80 V				
MPP Voltage Range	200-480 V	200-400 V	240-480 V	250-480 V	270-480 V
Max. input voltage	600 V (1000 V optional[1])				
Admissible conductor size DC	AWG 14 - AWG 6 copper (solid / stranded / fine stranded)(AWG 10 copper or AWG 8 aluminium for overcurrent protective devices up to 60A, from 61 to 100A minimum AWG 8 for copper or AWG 6 aluminium has to be used) , AWG 6 - AWG 2 copper(solid / stranded) MultiContactWiringable with AWG 12				
Number of MPPT	2				

OUTPUT DATA		PRIMO 3.8-1	PRIMO 5.0-1	PRIMO 6.0-1	PRIMO 7.6-1	PRIMO 8.2-1
Max. output power	208 V/240 V	3800 VA/3800 VA	5000 VA/5000 VA	6000 VA/6000 VA	7600 VA/7600 VA	7900 VA/8200 VA
Output configuration		208/240 V				
Frequency range (adjustable)		45.0 - 55.0 Hz / 50 - 66 Hz				
Operating frequency range default for CAL setups		–/ 58.5 - 60.5 Hz				
Operating frequency range default for HI setups		–/ 57.0 - 63.0 Hz				
Nominal operating frequency		60 Hz				
Admissable conductor size AC		AWG 14 - AWG 6				
Total harmonic distortion		< 5.0 %				
Power factor range		0.85-1 ind./cap				
Max. continuous output current	208 V	18.3 A	24.0 A	28.8 A	36.5 A	38.0 A
	240 V	15.8 A	20.8 A	25.0 A	31.7 A	34.2 A
OCPD/AC breaker size	208V	25 A	30 A	40 A	50 A	50 A
	240 V	20 A	30 A	35 A	40 A	45 A
Max. Efficiency		96.7 %	96.9 %	96.9 %	96.9 %	97.0 %
CEC Efficiency		95.0 %	95.5 %	96.0 %	96.0 %	96.5 %

INPUT DATA	PRIMO 10.0-1	PRIMO 11.4-1	PRIMO 12.5-1	PRIMO 15.0-1
Recommended PV power (kWp)	8.0 - 12.0 kW	9.1 - 13.7 kW	10.0 - 15.0 kW	12.0 - 18.0 kW
Max. usable input current (MPPT 1/MPPT 2)	33.0 / 18.0 A			
Max. usable input current (MPPT 1+MPPT 2)	51 A			
Max. array short circuit current (1.5 * Imax)	49.5 A/ 27.0			
Nominal input voltage	655 V	660 V	665 V	680 V
Operating voltage range	80 V - 1,000 V			
DC startup voltage	80 V			
MPP Voltage Range	220-800 V	240-800 V	260-800 V	320-800 V
Max. input voltage	1000 V			
Admissible conductor size DC	AWG 14 - AWG 6 copper direct, AWG 6 aluminum direct (AWG 10 copper or AWG 8 aluminium for overcurrent protective devices up to 60A, from 61 to 100A minimum AWG 8 for copper or AWG 6 aluminium has to be used), AWG 4 - AWG 2 copper or aluminum with optional input combiner			
Number of MPPT	2			
Integrated DC string fuse holders	4- and 4+ for MPPT 1 / no fusing required on MPPT 2			

OUTPUT DATA		PRIMO 10.0-1	PRIMO 11.4-1	PRIMO 12.5-1	PRIMO 15.0-1
Max. output power	208 V/240 V	9995 VA/9995 VA	11400 VA/11400 VA	12500 VA/12500 VA	13750 VA/15000 VA
Output configuration		1-NPE 208/240 V			
Frequency range (adjustable)		45-55 Hz / 50-66 Hz			
Operating frequency range default for CAL setups		–/ 58.5 - 60.5 Hz			
Operating frequency range default for HI setups		–/ 57.0 - 63.0 Hz			
Nominal operating frequency		60 Hz			
Admissible conductor size AC		AWG 10- AWG 2 copper (solid/stranded/fine stranded)(AWG 10 copper or AWG 8 aluminum for overcurrent protective devices up to 60 A, from 61 to 100A minimum AWG 6 aluminum has to be used), AWG 6-AWG 2 copper (solid/stranded) Multi Contact Wiring able with AWG 12			
Total harmonic distortion		< 2.5 %			
Power factor range		0-1 ind./cap.			
Max. continuous output current	208 V	48.1 A	54.8 A	60.1 A	66.1 A
	240 V	41.6 A	47.5 A	52.1 A	62.5 A
OCPD/AC breaker size	208 V	70 A	70 A	80 A	90 A
	240 V	60 A	60 A	70 A	80 A
Max. Efficiency		96.7 %			
CEC Efficiency 600 V/ 1000 V	240 V	96.0 % / 96.5 %			96.5 % / 97.0 %

[1] inverter rated for up to 1000 V open-circuit. Nominal, Operating, and MPP voltages based on 600 V system design. Actual DC system voltage is dependent on PV string-sizing, not inverter input capacity.

/ Perfect Welding / Solar Energy / Perfect Charging

THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 3,800 employees worldwide and 1,242 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

Further information about all Fronius products and our global sales partners and representatives can be found at **www.fronius.com**

v08 Aug 2017 EN

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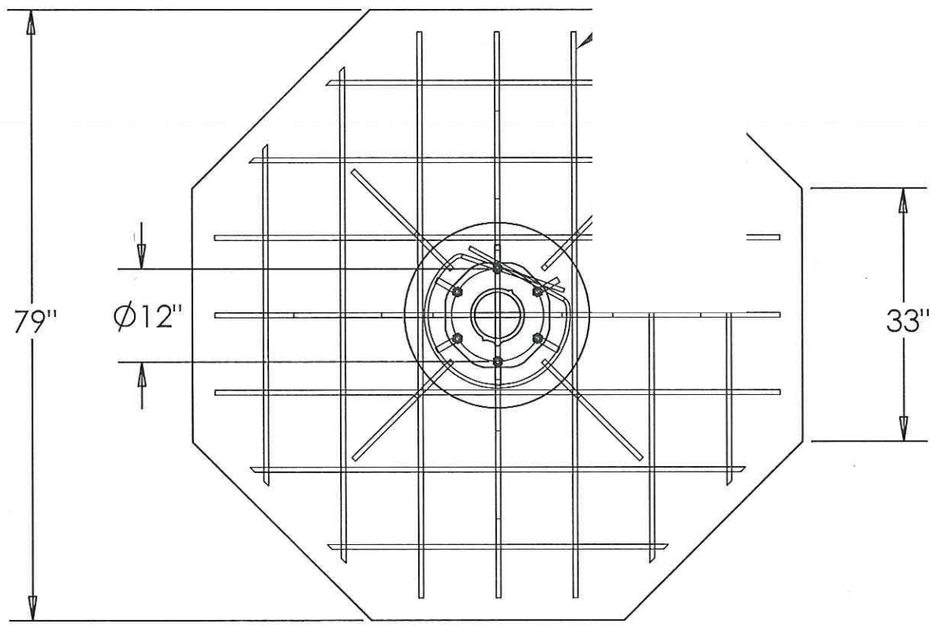
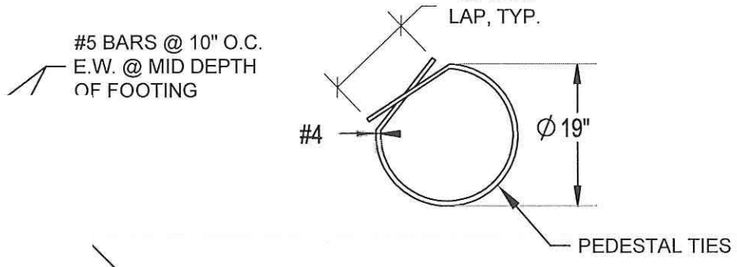
Portage, IN 46368 USA
pv-support-usa@fronius.com
www.fronius-usa.com

SUNSPEC ALLIANCE

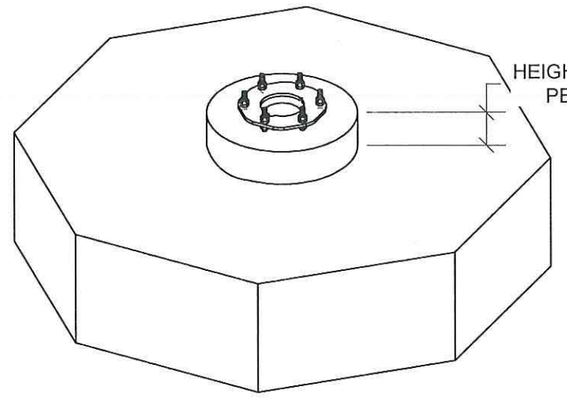
C US



1 FOUNDATION PLAN
NTS



2 REBAR DETAILS
NTS



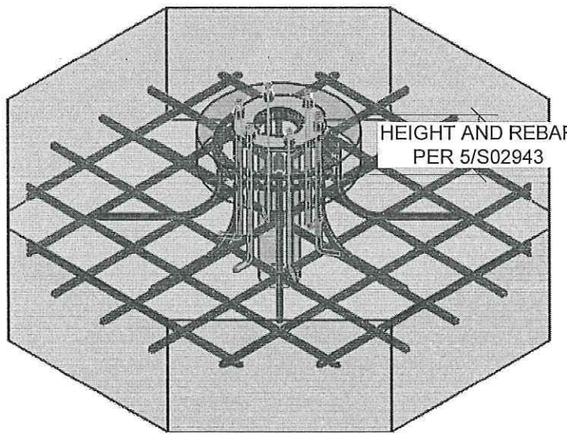
3 3D VIEW 1
NTS

PRELIMINARY
NOT FOR
CONSTRUCTION

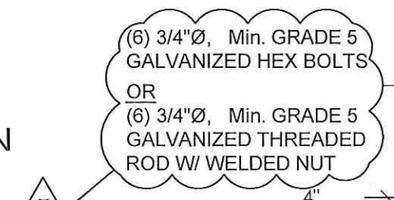
Design codes and parameters:

a. IBC 2009
b. ASCE 7-10
c. Risk Category: I
d. Snow Load: 15 psf
e. Ultimate wind speed with panel 85 degrees from horizontal: 40 mph (31 mph nominal) *
c. Ultimate wind speed with panel 5 degrees from horizontal: 105 mph (81 mph nominal)
d. Exposure: C
e. Kzt: 1.0
f. Kd: 0.85
g. Sites with unusual conditions shall be evaluated by a licensed engineer

* SOLAFLECT PANEL ASSEMBLY IS DESIGNED TO GO TO HORIZONTAL POSITION WHEN WIND VELOCITY IS 39 MPH ULTIMATE WIND SPEED, 30 MPH NOMINAL WIND SPEED, OR MORE.



4 3D VIEW 2
NTS



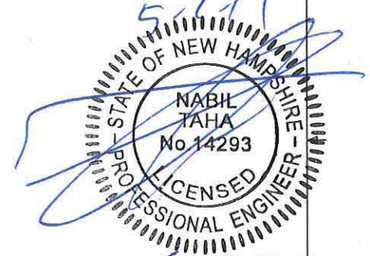
5 SECTION
NTS

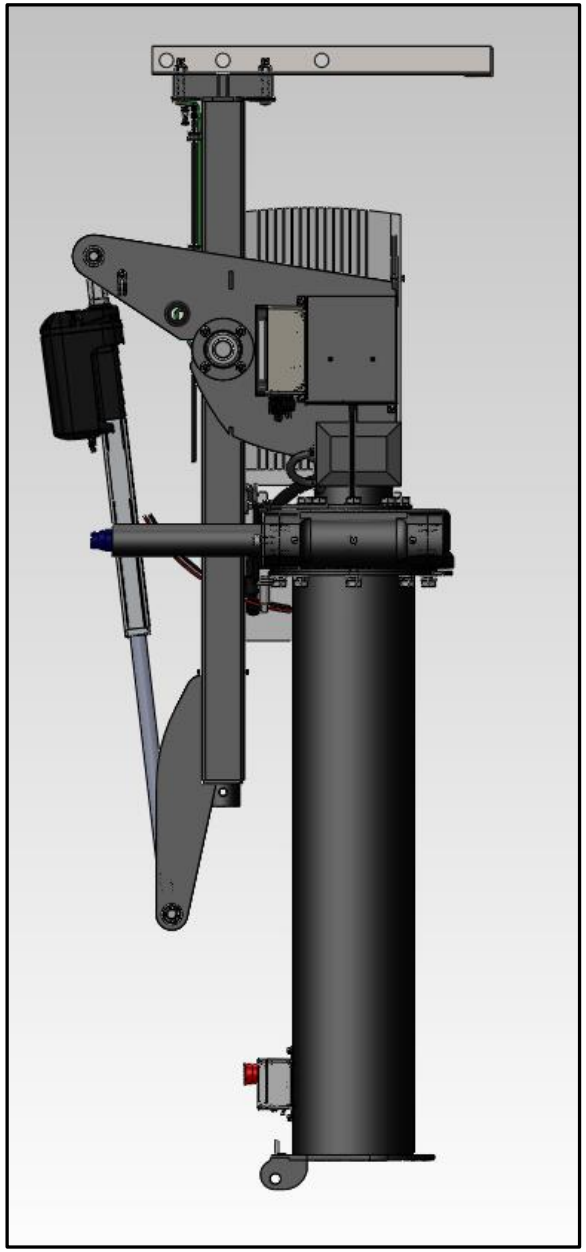
REV	DATE	DESCRIPTION
2	2016-06-30	ANCHOR BOLT AND CABLE SIZE
3	2016-08-24	FOUNDATION NOTES
4	2016-09-29	FOUNDATION HEIGHT
5	2017-04-28	ANCHOR BOLT GRADE AND SHAPE

SOLAFLECT ENERGY
Norwich, VT 05055 (802) 649-3700

DIMENSIONS IN INCHES
TOLERANCES:
ONE PLACE DEC. +/- 0.100
TWO PLACE DEC. +/- 0.015
THREE PLACE DEC. +/- 0.005
ANGULAR +/- 2 deg

TITLE: Round Concrete Pad ASSY
MATERIAL: XXX
FINISH: XXX
DRAWN: DES
DATE: 2017-04-28
SCALE: X:X
SHEET # OF #
SIZE: B
DRAWING NO.: SF02943





TECHNICAL SPECIFICATION

	Residential	Commercial
Output	6.0kW DC, 240 V AC single-phase	4.08 kW DC, 208/480 V AC three-phase
Inverter (single tracker)*	Fronius Primo 6.0-US (6 kW AC)	n/a
Inverter (multi-tracker)*	Fronius Primo 6.0-US (6 kW AC)	SolarEdge SE10KUS (10 kW AC) and SE20KUS (20 kW AC)
Modules*	16 LG375A1C-V5 PV Modules	16 CanadianSolar CS6P-255P (255 W)
Optimizer*		8 SolarEdge P600 (600W)
Power monitoring	or Fonius Monitoring portal (website)	
Tracking type	Dual axis with automatic wind stow (>25 mph)	
Drive system	LINAK LA37 sealed electric linear actuator (IP66, maintenance free), Kinematics Manufacturing ZKE9C sealed electric slew drive zero-backlash (IP66, maintenance free)	
Control system	Solaflect Tracking Controller utilizing NREL Solar Position Algorithm, network enabled	
Materials	Powder coated steel, reinforced concrete	
Dimensions	Height 17 ft, swing radius 11.5 ft	
Maximum wind speed^	105 MPH Ultimate Wind Speed	
Codes and standards	NEC, UL, NEMA, CE, FCC	
Patents	Patents and patents pending	

*Flexibility in module and inverter choice, please inquire at info@solaflect.com

^Inquire about specifics at info@solaflect.com


13'
22'
3'