

*PC 10/23/19*

# TOWN OF PLAINFIELD ZONING AND BUILDING PERMIT APPLICATION



**Property Owner:**

Name: Philip Burling Phone: (617) 548-5585

Street: 1010 Memorial Drive, Apt 8A Email: pburling@me.com

City State Zip: Cambridge, MA 02138

**Project:** Permit Type: (Check one)  Building  Zoning

Street Address: 208 Hayward Road

Tax Map: 260 Lot Number: 34 Lot Acreage: 35 Zoning District: Rural Residential (RR)

Proposed project distances to property lines (in feet): Front: 840' Rear: 1591' Side: 305' Side: 1291'

State Approved Septic Design #: \_\_\_\_\_ Driveway Permit #: \_\_\_\_\_

Please provide a written description of the project including appropriate dimensions: Installation of 3 dual axis ground mounted PV trackers with trenching back to house.

**Contractor Information:**

<b>Builder:</b>	<b>Electrician:</b>	<b>Plumber:</b>
Name: <u>Solalect Energy/William Bender</u>	Name: <u>Greg Hance</u>	Name: <u>NA</u>
Phone: <u>(802) 649-3700</u>	Phone: <u>(802) 649-3700</u>	Phone: <u>NA</u>

Applicant Signature: *Philip Burling* Date: Oct 24, 2019

**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**

*Dawn Jensen*  
Reviewed by Building Inspector / Zoning Administrator

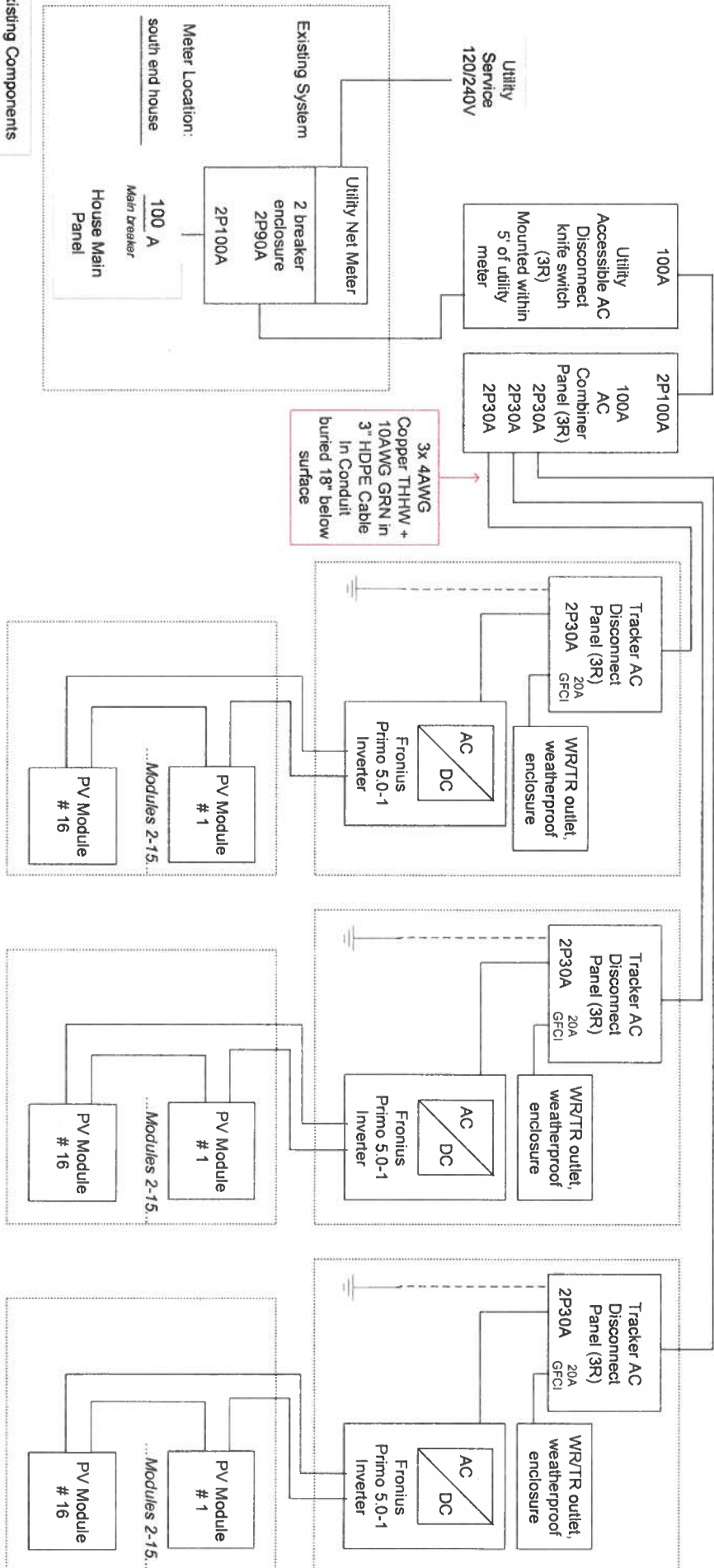
Approved       Denied

Permit # 2019-74      Date 10/28/19

Tracker Core: 5 kW System (1 of 3)

Tracker Core: 5 kW System (2 of 3)

Tracker Core: 5 kW System (3 of 3)



Existing System

Utility Service  
120/240V

100A Utility Accessible AC Disconnect knife switch (3R) Mounted within 5' of utility meter

2P100A AC Combiner Panel (3R)  
2P30A  
2P30A  
2P30A

Utility Net Meter

2 breaker enclosure  
2P90A  
2P100A

Meter Location:  
south end house

100 A Main Breaker  
House Main Panel

PV Module Description:

STC Wattage per mod: 370

Manuf: LG

Model #: LG370Q1-V5

□ Stand-alone SE P320 optimizers bolted onto frame

Total DC STC load: 17,760

REV	Date	Description
0	10/24/19	Initial release

**SOLAELECT ENERGY**  
Norwich, VT 05055 (802) 281 4284

One Line Diagram  
Solidlect Tracker with Fronius Primo 5.0-1 Inverter

DATE: 10/24/19

DRAWN: DL

DRWG NUMBER: SF-xxxx

**Fronius Primo 5.0-1 Inverter data**  
Max DC load: 6750 WDC STC per inverter  
DC Ratings per inverter  
Max Voltage: 500 V DC  
Max Circuit Current: 24 A DC

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approximate location  
of 3 trackers

CORNISH

## **Attachment: description of excavation**

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 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 ft wide by 2 ft deep between array and garage, then backfilled.

## Attachment: list of master electrician subcontractors

### Primary Electrician:

Gregory P Hance  
NH Lic # 13015M  
326 Main Street, Ste 4  
Norwich, VT 05055  
(802) 649-3700  
ghance@solaflect.com

### Alternate electrical subcontractors:

Chris Snider  
NH Lic # 13893M  
Simple Energy  
112 N. Main St.  
West Lebanon, New Hampshire 03784  
(603) 298-7200

OR

Richard Electric  
NH Lic # 8366M  
PO Box 999  
Wilder, Vermont 05088  
(802) 295-3894

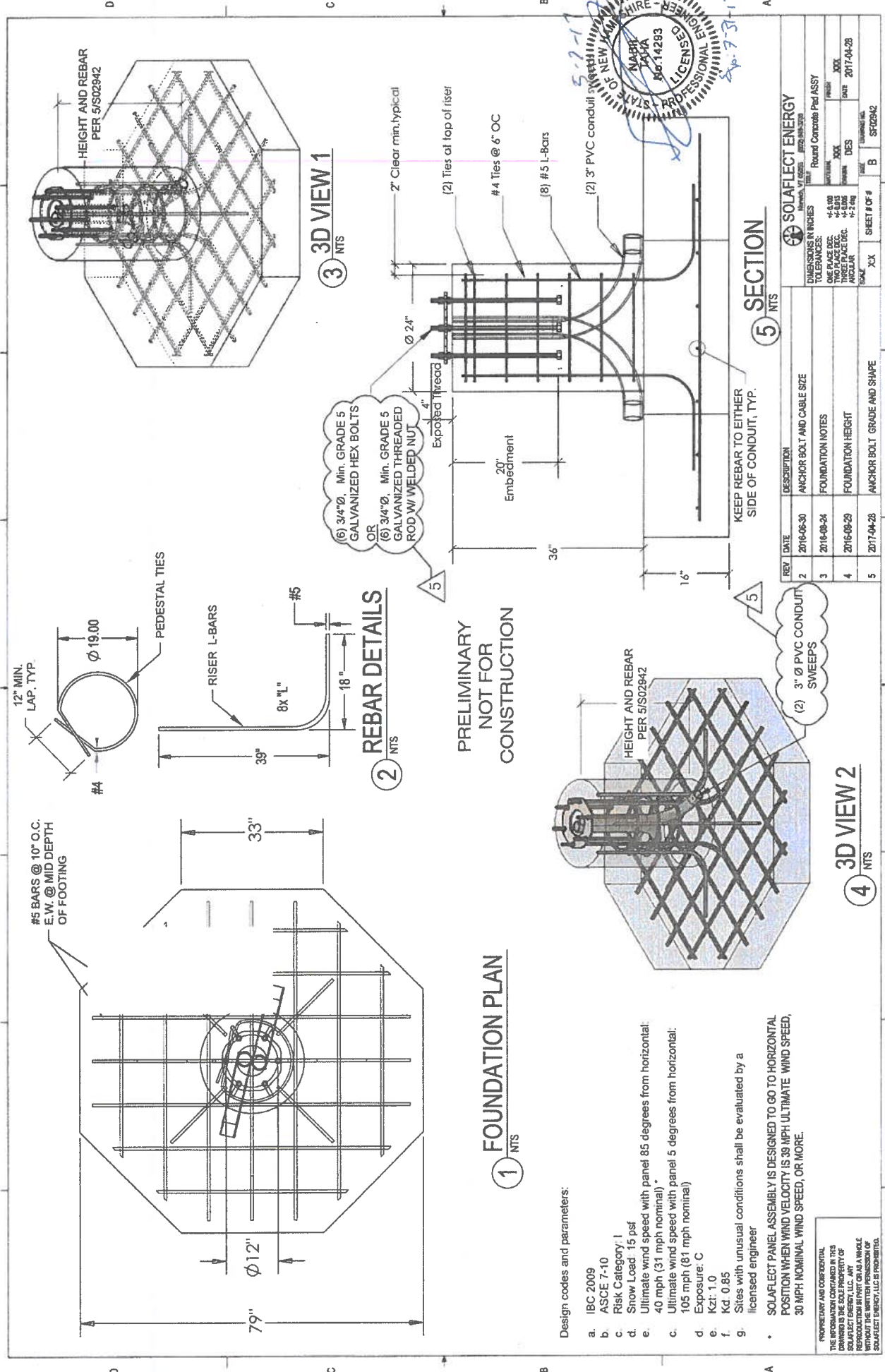
OR

Don Dompier  
NH Lic # 1755  
230 Elliot St.  
Brattleboro, Vermont 05301  
(802) 254 4581  
Email: N/A  
Fax: N/A

Reginald Cramer  
Cramer Electric Co., Inc.  
NH Lic # 4063M  
VT Lic # EM-2325  
461 Lake Morey Rd, #3  
Fairlee, VT 05045  
(802) 333-4144

OR

Gray Electric  
30 Plateau Acres  
Bradford, VT 05033  
NH Lic # 0387C (Corporate License)  
Robert Kruse - Master Electrician  
(802) 222-1592 /  
kruserobert25@gmail.com



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) \*
- f. Ultimate wind speed with panel 5 degrees from horizontal: 105 mph (81 mph nominal)
- g. Exposure: C
- h. Kzt: 1.0
- i. Kd: 0.85
- j. 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 89 MPH ULTIMATE WIND SPEED, 30 MPH NOMINAL WIND SPEED, OR MORE.

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

DIMENSIONS IN INCHES		TOLERANCES:	
1-4: 1/8"	5-8: 1/4"	1-4: 1/8"	5-8: 1/4"
ONE PLACE DEC.		TWO PLACE DEC.	
ANGULAR		ANGULAR	

SCALE	SHEET # OF #
AS SHOWN	XX
DATE	2017-04-28
DESIGNER	DES
CHECKER	XX
PROJECT	XX
ISSUE	B
PROJECT NO.	SF02942



1 FOUNDATION PLAN NTS

2 REBAR DETAILS NTS

3 3D VIEW 1 NTS

4 3D VIEW 2 NTS

5 SECTION NTS

PRELIMINARY  
 NOT FOR  
 CONSTRUCTION

KEEP REBAR TO EITHER  
 SIDE OF CONDUIT, TYP.

#5 BARS @ 10" O.C.  
 E.W. @ MID DEPTH  
 OF FOOTING

HEIGHT AND REBAR  
 PER 5/SO2942

HEIGHT AND REBAR  
 PER 5/SO2942

(2) 3" Ø PVC CONDUIT  
 SWEEPS

(6) 3/4"Ø, Min. GRADE 5  
 GALVANIZED HEX BOLTS  
 OR  
 (6) 3/4"Ø, Min. GRADE 5  
 GALVANIZED THREADED  
 ROD W/ WELDED NUT

2" Clear min. typical

(2) Ties at top of riser

#4 Ties @ 6" OC

(8) #5 L-Bars

(2) 3" PVC conduit

Ø 24"

Exposed Thread

20"

Embedment

36"

16"

12" MIN.  
 LAP, TYP.

#4

PEDESTAL TIES

RISER L-BARS

#5

39"

8x 1/2"

18"

33"

Ø 12"

79"

D

C

B

A

B

7

6

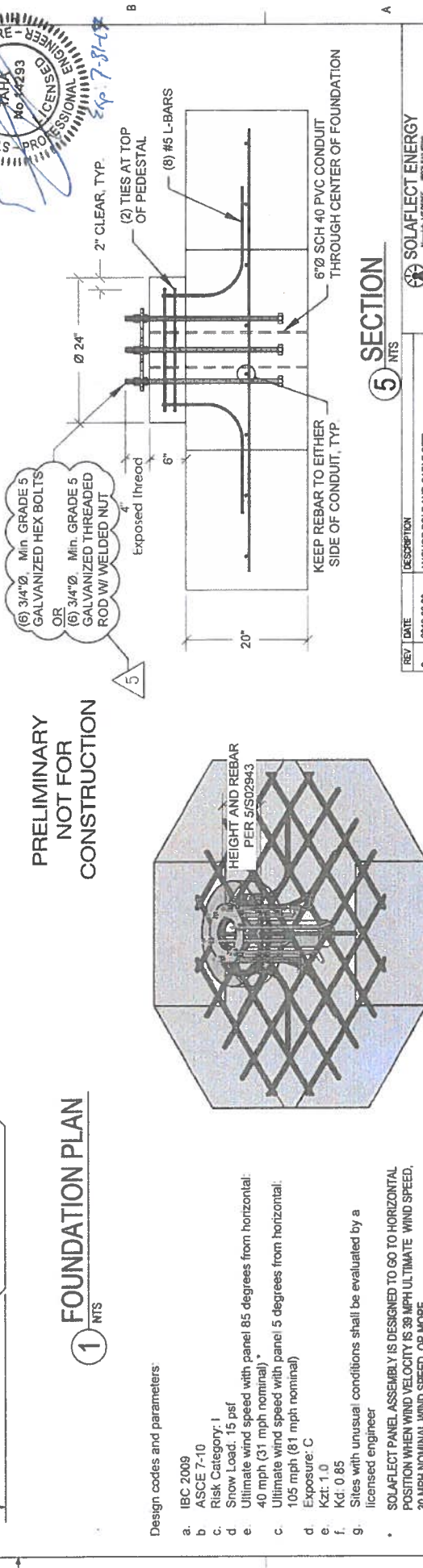
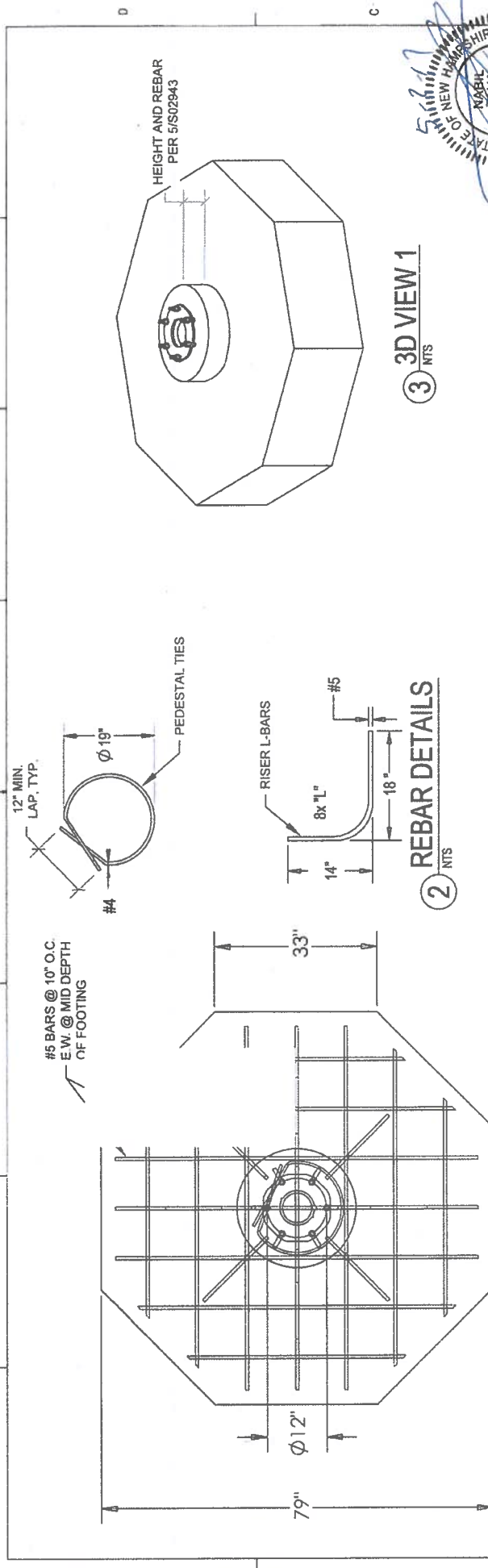
5

4

3

2

1



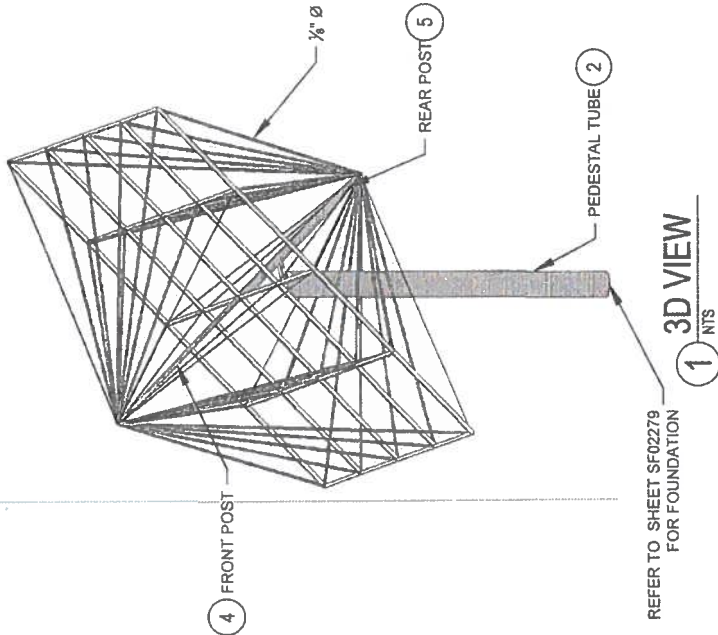
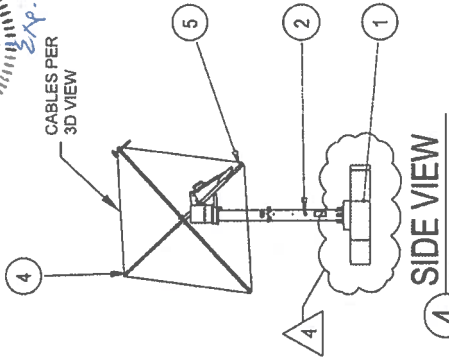
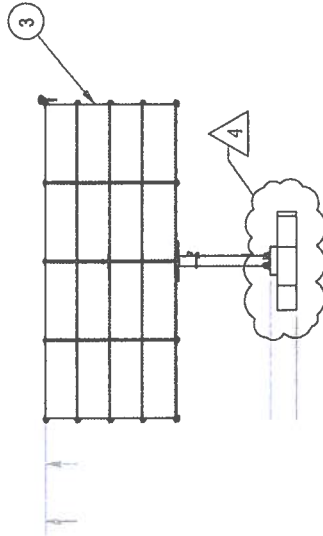
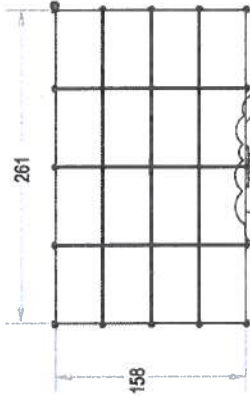
STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER  
NABH TASHA  
No. 54293  
Exp 7-31-18

- Design codes and parameters:
- IBC 2009
  - ASCE 7-10
  - Risk Category: I
  - Snow Load: 15 psf
  - Ultimate wind speed with panel 85 degrees from horizontal: 40 mph (31 mph nominal)
  - Ultimate wind speed with panel 5 degrees from horizontal: 105 mph (81 mph nominal)
  - Exposure: C
  - Kzt: 1.0
  - Kd: 0.85
  - Sites with unusual conditions shall be evaluated by a licensed engineer
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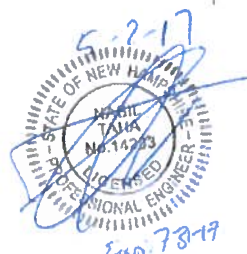
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3	2016-08-24	FOUNDATION NOTES
4	2016-09-25	FOUNDATION HEIGHT
5	2017-04-28	ANCHOR BOLT GRADE AND SHAPE

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ITEM NO.	PART NUMBER	QTY.
1	SF02279 Round Concrete Pad ASSY	1
2	SF02716 Structural ASSY 6.2 - Pedestal Tube: 10" O.D. x 0.25" or 10" Schedule 40	1
3	SF02441 PV Array ASSY v6.1 R	1
4	SF02439 Front Post ASSY v6.1 PV - 1.50" O.D. x 0.25"	1
5	SF02758 Rear Post ASSY v6.2 - 2.00" O.D. x 0.25"	2



PRELIMINARY  
NOT FOR CONSTRUCTION



REV	DATE	DESCRIPTION
2	2016-08-30	ANCHOR BOLT AND CABLE SIZE
3	2016-08-24	FOUNDATION NOTES
4	2016-08-28	FOUNDATION HEIGHT
5	2017-04-21	ANCHOR BOT GRADE AND SHAPE

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SOLAFLLECT ENERGY  
NEW HAMPSHIRE  
DIMENSIONS IN INCHES  
TOLERANCES:  
± 0.005  
± 0.003  
± 0.002  
± 0.001  
± 0.0005  
± 0.0002

SHEET # OF #  
B SP0279.1



**EARTHWORK**

1. EXISTING UTILITIES: LOCATE BY HAND EXCAVATION AND PROVIDE PROTECTION FROM DAMAGE. COOPERATE WITH OWNER AND UTILITY COMPANIES FOR MAINTAINING SERVICES.
2. PROTECTIONS: PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES IN AREAS OF WORK. BARRICADE OPEN EXCAVATIONS AND PROVIDE SAFE WORKING CONDITIONS. COMPLY WITH REGULATIONS FOR ALL EXCAVATION AND BACK FILLING.
3. SATISFACTORY SOIL MATERIALS: DEFINED AS WELL-SORTED AND SP AND MEETS OR EXCEEDS THE ASSUMED BEARING CAPACITY LISTED IN THIS DRAWING FOR FOUNDATION DESIGN.
4. ENGINEERED FILL: ENGINEERED FILL SHALL MEET THE REQUIREMENTS CALLED OUT FOR ITEM 704.08 OF THE VERMONT AGENCY OF TRANSPORTATION (VTTRANS) SPECIFICATIONS FOR CONSTRUCTION.
5. SITE MUST BE WELL-DRAINED SO THAT WATER DOES NOT INTRODUCE POTENTIAL FOR FREEZING BENEATH FOOTING. IF WATER TABLE IS HIGH, FOOTING MUST BE LOWERED BELOW FROST LINE.
6. FOOTINGS: PLACE FOOTINGS ON UNDISTURBED SATISFACTORY SOIL OR COMPACTED STRUCTURAL FILL. ASSUMED BEARING CAPACITY FOR FOUNDATION DESIGN IS A MINIMUM OF 1,500 POUNDS PER SQUARE FOOT.

**1 EARTH WORK NOTES**  
NTS

PRELIMINARY  
NOT FOR  
CONSTRUCTION



ACCEPTABLE		MAJOR DIVISIONS	GROUP SYMBOL	GROUP NAME
COURSE GRAINED SOILS MORE THAN 50% RETAINED ON OR ABOVE NO. 200 SIEVE	GRAVEL >50% OF COURSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL <5% SMALLER THAN #200 SIEVE	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
	SAND ≥ 50% OF COURSE FRACTION PASSES NO. 4 SIEVE	GRAVEL WITH .12% FINES	GM	POORLY GRADED GRAVEL
HIGHLY ORGANIC SOILS			GC	SILTY GRAVEL
			SW	CLAYE GRAVE (NOT ACCEPTABLE)
		SP	WELL-GRADED SAND, FINE TO COARSE SAND	
		SM	POORLY GRADED SAND	
		SC	SILTY SAND	
				CLAYE SAND (NOT ACCEPTABLE)

NOT ACCEPTABLE		MAJOR DIVISIONS	GROUP SYMBOL	GROUP NAME
FINE GRAINED SOILS 50% OR MORE THAN 50% PASSING THE NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT < 50	INORGANIC	ML	SILT
			CL	CLAY OF LOW PLASTICITY, LEAN CLAY
			OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY LIQUID LIMIT ≥ 50	ORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
			OH	ORGANIC CLAY, ORGANIC SILT
		Pt	PEAT	

LETTER	DEFINITION
G	GRAVEL
S	SAND
M	SILT
C	CLAY
O	ORGANIC

LETTER	DEFINITION
P	POORLY GRADED (UNIFORM)
W	PARTICLE SIZE
H	WELL-GRADED (OVERSIZED)
L	PARTICLE SIZES
	HIGH PLASTICITY
	LOW PLASTICITY

**1 SOIL TYPES**  
NTS

REV	DATE	DESCRIPTION
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5	2017-04-21	ANCHOR BOLT GRADE AND SHAPE

SOLALECT ENERGY DIMENSIONS IN INCHES DIMENSIONS IN METERS FOUNDATION NOTES DIMENSIONS IN INCHES: 1/4" = 3/16" (1:4) 1/2" = 3/8" (1:2) 3/4" = 1/2" (1:1.5) 1" = 3/4" (1:1.33) 1 1/4" = 1" (1:1.25) 1 1/2" = 1 1/4" (1:1.2) 2" = 1 1/2" (1:1.33) 3" = 2" (1:1.5) 4" = 3" (1:1.33) 6" = 4" (1:1.5) 8" = 5" (1:1.6) 10" = 6" (1:1.67) 12" = 7" (1:1.71) 18" = 10" (1:1.8) 24" = 12" (1:2) 30" = 15" (1:2.25) 36" = 18" (1:2.4) 48" = 24" (1:3) 60" = 30" (1:3.5) 72" = 36" (1:4) 96" = 48" (1:4.8) 120" = 60" (1:6)		DIMENSIONS IN METERS: 1/4" = 6mm (1:25) 1/2" = 12mm (1:50) 3/4" = 19mm (1:75) 1" = 25mm (1:100) 1 1/4" = 32mm (1:133) 1 1/2" = 38mm (1:150) 2" = 50mm (1:150) 3" = 75mm (1:225) 4" = 100mm (1:300) 6" = 150mm (1:450) 8" = 200mm (1:600) 10" = 250mm (1:750) 12" = 300mm (1:900) 18" = 450mm (1:1350) 24" = 600mm (1:1800) 30" = 750mm (1:2250) 36" = 900mm (1:2700) 48" = 1200mm (1:3600) 60" = 1500mm (1:4500) 72" = 1800mm (1:5400) 96" = 2400mm (1:7200) 120" = 3000mm (1:9000)
ONE PLACE DECIMALS TWO PLACE DECIMALS THREE PLACE DECIMALS ANGULAR: 1/4° = 15' 1/2° = 30' 3/4° = 45' 1° = 60' 1 1/4° = 90' 1 1/2° = 135' 2° = 180' 3° = 270' 4° = 360' 6° = 540' 8° = 720' 10° = 900' 12° = 1080' 15° = 1350' 18° = 1620' 24° = 2160' 30° = 2700' 36° = 3240' 45° = 3960' 60° = 5040' 72° = 6048' 90° = 7560' 108° = 9072' 144° = 12096' 180° = 16128' 216° = 19368' 270° = 24480' 324° = 29376' 360° = 35424' 432° = 42516' 480° = 50400' 540° = 59400' 600° = 69120' 720° = 82944' 900° = 100800' 1080° = 120960' 1260° = 143664' 1440° = 168144' 1620° = 194512' 1800° = 226800' 2160° = 272160' 2520° = 320640' 3060° = 381744' 3600° = 450000' 4320° = 515520' 4800° = 585000' 5400° = 660480' 6000° = 736800' 7200° = 845760' 8100° = 954000' 9000° = 1062000' 10080° = 1178880' 11250° = 1305000' 12600° = 1471440' 14400° = 1664640' 16200° = 1881000' 18000° = 2107200'		
SCALE	SHEET # OF #	TITLE
XX	XX	B
XX	XX	SFOZZO, I

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