

TOWN OF MILFORD, NEW HAMPSHIRE OFFICE OF COMMUNITY DEVELOPMENT

1 UNION SQUARE, MILFORD, NH 03055

TEL: (603)249-0620

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STAFF MEMO

Date: July 12, 2021

To: Town of Milford Planning Board

From: Jason Cleghorn, Town Planner

Subject: SP2021-18 Duncan Solar Array, 47 Ball Hill Rd., Map 47, Lot 63-2. Public Hearing for a minor site plan and conditional use permit for a solar array larger than 500 sf in the Residence R zoning district.

BACKGROUND:

The applicant is requesting approval of a minor site plan and Conditional Use permit for the construction of a solar array (540sf) in excess of the 500 square feet allowed under the Zoning Ordinance's description of Residential Solar. The array will be placed in the rear yard of the parcel.

LOT AREA:

1.28 acres

NOTICES:

Notices were sent to all property abutters on July 7, 2021.

ZONING DISTRICT/INFORMATION:

The subject property is within the Residence "R" Zoning District. <u>At issue is that the Zoning Ordinance defines</u> <u>Residential Solar as being less than 500 sf.</u> For purposes of this application, Office of Community Development Staff is considering this array under Commercial Solar since it is larger than 500 sf. It is not exporting power and will solely provide power for the single family residence. This application is before the Planning Board because it was 40 square feet too large to be considered Residential Solar.

7.11.4 District Regulations

A. Table of Uses:

| | Residential R | Residential A, B | Commercial / Limited Commercial | ICI | ICI2 / Industrial |
|-----------------------------------|------------------|---------------------|---------------------------------------|-----|-------------------|
| Residential Solar | Р | Р | Р | Р | Р |
| Community Solar | Р | х | Р | Р | Р |
| Accessory Agricultural Solar | Р | х | Р | Р | Р |
| Primary Agricultural Solar | CUP | х | Р | Р | Р |
| Commercial Solar | CUP | х | х | CUP | CUP |
| Large Commercial Solar | CUP | х | х | CUP | CUP |
| Industrial Solar | х | х | х | CUP | CUP |
| Utility Solar | х | х | х | х | CUP |
| Solar Power Generation Station | x | x | х | х | CUP |

X = Use prohibited.

EXISTING CONDITIONS:

Map 47 Lot 63-2 is a 1.28 acre Residence R lot with a single family residence on it. The parcel is directly abutted to the north and south by similar rural residential lots. The property lines are heavily wooded on both of these sides. The rear of the lot is also heavily wooded. It is not anticipated that either abutting residential property will be able to see the panel.

STAFF RECOMMENDATIONS:

Barring any/all input and recommendations from the Board, Staff recommends approval with the following condition:

1. A positive finding regarding the overall Conditional Use Permit Criteria.



APPROVED

MILFORD, NH PLANNING BOARD SITE PLAN #: _ DATE APPROVED: SIGNED: _____





COMPANY INFORMATION

ALL ENERGY SOLAR, INC 1264 ENERGY LANE ST PAUL, MN 55108 (800) 620-3370 INFO@ALLENERGYSOLAR.COM

CLIENT INFORMATION

CHRIS DUNCAN 47 BALL HILL RD MILFORD, NH 03055 PO 44311

Panel Type

LG 435

of Panels

28

System Size (kW)

12.18

GROUND MOUNT

NOTES:

1. (28) ENPHASE IQ7PLUS INVERTER(S)

2. ARRAY 1: 35° TILT, 180° AZIMUTH

AZIMUTH



REVISIONS LAST: 05/7/21 BX

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CLIENT INFORMATION

CHRIS DUNCAN 47 BALL HILL RD MILFORD, NH 03055 PO 44311

SYSTEM DETAILS

NOTES:

1. (28) ENPHASE IQ7PLUS INVERTER(S) = 8.12kW AC

2. ARRAY 1: 180° AZIMUTH, 35° TILT (28) LG 435W = 12.18kW

ACCOUNT: 5626 524 1034 PREMISE: 47 METER: S71100989

AZIMUTH



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NOTES:

- 1. MAX DENOTES MAXIMUM PERMISSIBLE DIMENSIONS.
- PIPE IS DESIGNED TO TELESCOPE IN AND OUT OF SCREW/AUGER FOR FIELD ADJUSTABILITY. 12" IS RECOMMENDED.





NOTES: UNLESS OTHERWISE SPECIFIED

- 1. THIS DRAWING IS NOT FOR CONSTRUCTION UNTIL ENGINEERING HAS REVIEWED AND STAMPED THIS FOR K10342-001 IS AN ACCEPTABLE SUBSTITUTE FOR K10342-001 PIPE SPLICE KIT DOCUMENT.
- 2. DIMENSIONS SHOWN ARE INCHES.
- 3. THE SELF-BONDING SYSTEM AND SINGLE GROUND LUG IS FOR USE WITH PV MODULES THAT HAVE A MAXIMUM SERIES FUSE RATING OF 30A.
- 4. MATERIALS ARE AS SPECIFIED OR EQUIVALENT: HARDWARE: 304 STAINLESS STEEL FABRICATED EXTRUDED PARTS: 6005-T5 ALUMINUM ALLOY FABRICATED DIE CAST PARTS: ANSI/AA A380 ALUMINUM ALLOY STEEL PIPE: SCHEDULE 40 GALVANIZED ALUMINUM PIPE: SCHEDULE 10 ANODIZED
- 5. THE MAXIMUM PERMISSIBLE LENGTH OF ANY STRUCTURE SHALL BE 200 FT. FOR SYSTEMS USING A SHARED RAIL CONFIGURATION, A THERMAL BREAK IS REQUIRED IN THE RAIL EVERY 40 FT. PER THE DRAWING DETAILS.
- 6. 4LX7-35DEG-STR-GSM-AGM-BGM-PGM
- 7. APPROVED RAIL PROFILES VARY BASED ON ENGINEERING REQUIREMENTS, CONFIRM SELECTION WITH STRUCTURAL ENGINEER. SEE BOM IN BOTTOM RIGHT CORNER.
- 8. K10224-XXX END CLAMP KIT OR K10299-XXX ADJ. END CLAMP KIT.
- 9. FOUNDATION TYPES: GSM = GROUND SCREW GROUND MOUNT AGM = HELICAL AUGER GROUND MOUNT PGM = POST-IN-CONCRETE GROUND MOUNT BSM = BALLAST GROUND MOUNT

10.1 OF 1 ARRAY TYPES 11. 1 ARRAYSTOTAL

> (15) 1 11) 6 圍

> > DETAIL A



Wind Spee Ground Sr Tilt

THIS DRAWING IS CONFIDENTIAL PROPERTY OF SUMMODO AND ITS NOT BE INSCLOSED WITHOUT THE PROPERTY OF SUMMODO AND ITS

| (28) LG LG435QAC-A6 MODUL (28) ENPHASE IQ7PLUS | ES MAX CIRCUIT LENGTH (120/240V) | 15A BREAKER | 20A BREAKER |
|---|-------------------------------------|----------------|----------------|
| INVERTER(S) | ENPHASE IQ7 | 12 | 16 |
| CIRCUITS: | ENPHASE IQ7+ | 9 | 13 |
| (2) CIRCUIT(S) OF 9 MICROS | ENPHASE IQ7X | 9 | 12 |
| (1) CIRCUIT(S) OF 10 MICROS | ENPHASE IQ7A | 8 | 11 |



| | PACKET A3 | | 2 |
|---|---|------------------------|----------|
| Model Co | de ASCE 7-16 | | |
| Exposure | Category B | | co |
| Wind Spe | ed 110 | | – |
| Ground S | now Load 60 | | А |
| Tilt | 35 | | |
| | 4LX7 ARRAY | | IN C |
| 343-002 | 2.5" AL PIPE U-BOLT KIT | 28 | |
| 342-001 | 2.5" PIPE SPLICE KIT | 8 | |
| 341-001 | 2.5" PIPE TEE KIT | 16 | |
| 222-001 | 2.5" PIPE CLAMP KIT | 2 | |
| 219-001 | 2" PIPE CLAMP KIT | 18 | i |
| 180-001 | Grounding Mid-clamp kit with T Collar Bolt and grounding base | 42 | |
| 179-001 | SELF-GROUNDING LUG KIT | 1 | |
| 164-092 | 1.5" SQ. STL TUBE BRACE | 8 | |
| 164-066 | 1.5" SQ. STL TUBE BRACE | 2 | |
| 168-112 | PIPE, HSS, 2,875" OD X 12 GAUGE | 10 | |
| 165-060 | PIPE, HSS, 2.375" OD X 12 GAUGE | 8 | |
| 165-120 | PIPE, HSS, 2.375" OD X 12 GAUGE | 8 | |
| 380-001 | 2.5" PIPE END CAP (OPTIONAL) | 4 | |
| | Panel 1,910 x1,041 x40.0mm | 28 | |
| 288-206- | Helio Rail HR300, 206" | 14 | |
| 288-206- | | | |
| 288-206- 297-001 | Rail End Cap | 28 | 1 |
| 288-206- 297-001 224-140 | Rail End Cap End Clamp Kit. Varies per note 8 | 28 28 | |
| 288-206- 297-001 224-140 | Rail End Cap End Clamp Kit. Varies per note 8 DESCRIPTION | 28 28 qty | |
| 288-206- 297-001 224-140 IT NUMBER | Rail End Cap End Clamp Kit. Varies per note 8 DESCRIPTION SunModo Corp. | 28 28 QTY | |
| 288-206- 297-001 224-140 T NUMBER M M M M M M M M M M M M M M M M M M M | Rail End Cap End Clamp Kit. Varies per note 8 DESCRIPTION Sun Modo Corp. 14600 NE 65TH STREET, VANCOUVER WA 90 CHRIS DUNCAN 44311 | 28 28 QTY 682 | |



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ACCORDANCE WITH NEC 690 AND POSTED WITH APPLICABLE WARNINGS, SIGNAGE, AND PLAQUES PER NEC 705-10, 690-17, & 690-64 (b)(5).

(1) CIRCUIT(S) OF 10 (20AMPS EACH)



*DISTANCES NOT TO SCALE

LINETAP VIA POLARIS LUGS ON LINE SIDE OF LOAD PANEL

WHOLE SERVICE DISCONNECT SEE LABEL(S) 14, 16, 40 ON FOLLOWING PAGES



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CLIENT INFORMATION

CHRIS E DUNCAN 47 BALL HILL RD MILFORD, NH 03055 PO 44311

SYSTEM DETAILS

SYSTEM SIZE: 12.18kW DC MAXIMUM POWER: 8.12 kW AC **OPERATING VOLTAGE: 120/240V** MAXIMUM CURRENT: 33.88A ACCOUNT: 5626 524 1034 PREMISE: 47 METER: S71100989

NOTES:

1. DESIGN MEETS NEC CODE AND SHALL BE INSTALLED IN ACCORDANCE WITH NEC 690 AND POSTED WITH APPLICABLE WARNINGS, SIGNAGE, AND PLAQUES PER NEC 705-10, 690-17, & 690-64 (b) (5)

2. SOLAR MODULES, INVERTERS, AND CORRESPONDING ELECTRICAL EQUIPMENT ARE LISTED.

3. INVERTERS ARE UL 1741 LISTED

4. PV INTERCONNECTION IS A SECONDARY INTERCONNECTION

> REVISIONS LAST: 05/7/21 BX

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ELECTRICAL LINE DIAGRAM

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EMERGENCY DISCONNECT SERVICE DISCONNECT





NOTICE

PV COMBINER

PANEL ONLY

NO LOADS

24

15



FOR CONDITIONAL USE PERMIT APPLICATIONS ONLY

Before the Planning Board considers the approval of an application for a Conditional Use Permit, the applicant shall prove to the satisfaction of the Planning Board that all the following conditions have been met:

| A. | Is the property in conformance with the dimensional requirements of the zone or has it been |
|----|---|
| | determined to be legally non-conforming? Yes |

| 3. | Is the proposed use consistent with the Milford Master Plan? \checkmark Yes \Box No | | | | | |
|----|---|--|--|--|--|--|
| 2. | Does the proposal meet the requirements of the ordinance under which the application is proposed? | | | | | |
| | 7.11.0: Doesn't meet definition of "residential solar", but meets all requirements of conditiona | | | | | |
| | use permit for systems not granted by right. Very wooded lot, minimal if any visual impact from abutters. | | | | | |
| Э. | Does the applicant agree there will be no significant adverse impacts resulting from the proposed use upon the public health, safety and general welfare of the neighborhood and the Town of Milford? If no, please explain. X Yes \Box No | | | | | |
| | , | | | | | |
| E. | Does the applicant agree the proposed use will not be more objectionable to nearby properties by reason of noise, fumes, vibration or inappropriate lighting than any use of the property permitted under the existing zoning district ordinances? If no, please explain. | | | | | |
| | | | | | | |
| | · · · | | | | | |
| F. | Does the applicant agree the proposed use will not adversely affect the areas of the Groundwater Protection District as defined in Section 6.010 of the Zoning Ordinance? If no, | | | | | |
| | | | | | | |

Town Hall • Union Square • Milford, NH 03055 • (603) 673-7964 • Fax (603) 673-2273



159 Front Lane Chicopee, MA 01013 <u>www.allenergysolar.com</u>

June 21st, 2021

Dear Town of Milford,

Chris Duncan lives at 47 BALL HILL RD in Milford. They are seeking to install a solar photovoltaic (PV) system on his property.

The proposed system is a ground mounted solar PV system, with a total of 28 435W solar panels. The system size of the project is 8.12 kW AC. The output is designed to offset the residential electricity usage at the property.

Sincerely,

All Energy Solar



