



TOWN OF SPENCER

Office of Development & Inspectional Services

Planning Board
Zoning Board of Appeals
Conservation Commission
Board of Health

Application for Special Permit or Appeal

Memorial Town Hall
157 Main Street
Spencer, MA 01562

Town Planner
Inspector of Buildings
Health Agent
Wetland/Soil Specialist

Tel: 508-885-7500 ext. 180
Fax: 508-885-7519

Name of Applicant: Trinity Solar

Address: 4 Open Square Way, Holyoke, MA 01040

Daytime Phone: (413) 203-9088 Evening Phone: _____ Other Phone: _____

Email Address: applications.westma@trinity-solar.com

Name of Owner (s): Kim Snyder Address: 36 Howe Road, Spencer, MA 01562

TAX COLLECTOR SIGNATURE (confirms taxes, liens, etc have been paid): _____ DATE _____

Application for: Special Permit Appeal of Decision by: _____

Applicable Zoning Bylaw Section: 4.8.9, 7.2.1 B

(See Zoning Bylaw for appropriate section numbers and section 7.2 Special Permits)

Are you filing under the 1985 Zoning Bylaw? Yes No If yes, attach an explanation of why and by what zoning freeze mechanism.

Location of Property: 36 Howe Road, Spencer, MA Zoning District: RR

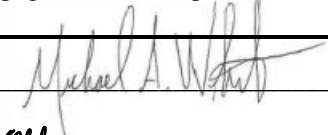
Spencer Assessor's Tax Map Number: _____ Parcel Number(s): R19-15

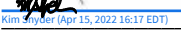
Deed Reference – Worcester Registry of Deeds Book: 38492 Page: 300

Brief description of the application

Install 8.0kW DC solar on ground mount (20 panels). See attached plan set for location. Trench approximately 150 feet to house.

Check here if additional pages attached to provide more detailed information.

Applicant's signature: 

Owner's signature (s): 
Kim Snyder (Apr 15, 2022 16:17 EDT)
Note: All affected owners must sign the application

Date: 04/15/22

Town Clerk's Date Stamp:

Official Use Only:
Fee: \$ _____ Date Paid: _____ Check #: _____

Zoning Board of Appeals Planning Board

Date(s) of Public Hearing (s): _____

Checked by: _____
Date: _____

ASSESSED OWNER: David Snyder

MAILING ADDRESS: 36 Howe Rd Spencer, MA 01562

TELEPHONE NUMBER:

PROPERTY LOCATION: 36 Howe Rd R19/15

The following is a list of abutters to the property designated on the application for appeal. "Parties in interest" shall mean the petitioners, abutters, owners of land directly opposite on any public or private street or way, and abutters to the abutters within 300 feet of the property line of the petitioner as they appear on the most recent taxable tax list, notwithstanding that the land of such owner is located in another city or town, the planning board of the city or town.

| MAP/PARCEL | OWNERS NAME | MAILING ADDRESS |
|----------------------------|--------------------|------------------------|
| R18/14 & R23/25 01562 | Robert Moschini | 30 Howe Rd Spencer, MA |
| R19/13 01562 | Elizabeth Charron | 42 Howe Rd Spencer, MA |
| R19/14 & R19/15/1 01562 | W Thomas Jepson Jr | 40 Howe Rd Spencer, MA |

Date Certified: April 18, 2022

ejj

We are requesting waivers of the following requirements:

4.8.9 F. 7

The system will not have specific hours of operation (the system will produce whenever there is sufficient sunlight, independent of time) and does not involve any form of active management by personnel on site. Thus, we believe that this requirement is not applicable to the project.

4.8.9 F. 12

The installation of this system will take only a few days and involve primarily the use of hand tools, rather than the much greater length and mechanization (and consequently much louder and more consistent noise) of large-scale commercial installations. This project will not produce any extended period of loud, disruptive noise as the bylaw seeks to prevent. Therefore, we believe that it is not necessary to apply this requirement in consideration of the scale and timeframe of the installation and we request its waiver.

4.8.9 F. 13

The system will not have personnel on site actively operating or maintaining the system. It operates passively when a shutdown switch is not engaged. Maintenance would be done on an as-needed basis under the warranty agreement which covers the system.

4.8.9 F. 14 (a)-(e)

The requirements set forth in this statute for an abandonment and decommissioning plan appear to be clearly conceptualized in regard to a much larger and more intensive ground mount system than a small-scale residential ground mount system. The planned structure for this project is a set of rails mounted onto a small number of 2.5 inch diameter metal poles, with no inclusion of a separate building in conjunction. It will not entail the risks of substantial erosion or environmental destruction or an unprotected large cost for decommissioning which the bylaw seeks to prevent. Thus, we request that the planning board waive these requirements.

4.8.9 F. 16 (i)

The scale of the project is such that a specific, pre-arranged staging area will not be utilized. The crew will bring materials and equipment directly from their vehicles to the ground mount location.

4.8.9 G. 3

The requirement to install a vegetative screen with a depth of 30 feet creates a disproportionate and onerous requirement relative to the size of the proposed structure. The proposed structure would have dimensions of approximately 24.67 feet by 14.83 feet, for an area of about 365.86 square feet. If 30 feet of vegetative screening was added in all aspects, this would entail a total size for the project including the screen of at least 84.67 feet by 74.83 feet, for an area of about 6335.67 square feet - nearly 20 times greater than the area of the array itself, and constituting by any consideration a vastly greater visual and environmental disruption of the area than the proposed array. This would also necessitate the project encroaching into the 100 foot side setbacks as well as disrupting the ability of the Snyders to utilize an existing patio in their yard. With further consideration of the actual size and composition of the structure, this requirement is clearly well in excess of any actual necessity in terms of reducing the visual impact of the proposed construction, and we request that the planning board waive this requirement.

4.8.9 G. 11

This project does not include the use of concrete or other impervious materials to cover any substantial amount of ground. Under the stormwater bylaw, no element of this project would meet the criteria for either major or minor projects as per section 2, Applicability, of exhibit A of the Spencer Stormwater Bylaw. There is no proposed land conversion activity greater than one acre, the proposed work is not located within 100 feet of any existing or proposed inlet to any storm drain, catch basin, or other storm drain system component discharging to any lake, pond, river, stream, or wetland, the project does not occur on or result in a slope of 15% or greater, and there is not any proposed land conversion activity of greater than 10,000 square feet in area. As this project does not meet the applicability criteria for a stormwater permit to be required and will not otherwise substantially impact the existing drainage by deploying non-permeable cover materials, we request that the planning board waive this requirement.

4.8.9 G. 15

No topsoil is being removed from site and the only earthworks operations will be the boring of holes for the ground mount frame pillars and a trench to the utility meter which will (subsequent to inspection) be refilled with the on-site dirt. Thus we are requesting the requirement for a detailed earthworks estimate be waived as there is no substantial earthwork operation which will result in the export of soil material.



HOMEOWNERS AUTHORIZATION FORM

I, Kim Synder
(print name)

am the owner of the property located at address:

36 Howe Road SPENCER, Massachusetts 01562 United States
(print address)


I hereby authorize Trinity Solar Inc. ("Trinity Solar") and its employees, agents, and subcontractors, including without limitation, _____, to act as my Agent for the limited purpose of applying for and obtaining local building and other permits from the Authority Having Jurisdiction as required for the installation of a Photovoltaic System, Battery System, roofing or other Trinity Solar offerings located on my property, applying and obtaining permission and approval for interconnection with the electric utility company, and registration with any state and/or local incentive program(s).

This authorization includes the transfer/re-administering, and/or cancellation of any existing permits on file for the purpose of updating/applying with an alternate subcontractor.

Without limitation to the generality of the foregoing I specifically authorize Trinity Solar et al. to populate technical details, fill-in, edit, compile, attach drawings, plans, data sheets and other documentation to, date, submit, re-submit, revise, amend and modify application, submission and certification documents ("Approvals Paperwork"), including those for which signature pages are included herewith for my signature, in furtherance of the related transaction, and I am providing any signatures to Approvals Paperwork for purposes of the foregoing. Trinity Solar will provide copies of Approvals Paperwork when submitted. My authorizations memorialized herein shall remain in full force and effect until revoked. I acknowledge that these authorizations are not required to proceed with the transaction and are not a condition of the related agreement included herewith but are being given for my own convenience and benefit in order to expedite the approvals processes.

Electric Utility Company: National Grid
Electric Utility Account No.: 7693922009
Name on Electric Utility Account: David Synder

Phone # (774) 272-0688


Customer Signature
Kim Synder

Print Name
August 17, 2021

Date

Corporate Headquarters
2211 Allenwood Road
Wall, New Jersey 07719

1-877-SUN-SAVES
Ph: 732-780-3779
Fax: 732-780-6671
www.trinity-solar.com

**FOR INFORMATION ABOUT CONTRACTORS AND THE CONTRACTORS' REGISTRATION ACT,
CONTACT THE NEW JERSEY DEPARTMENT OF LAW AND PUBLIC SAFETY,
DIVISION OF CONSUMERS AFFAIRS AT 1-888-656-6225.**

 Commonwealth of Massachusetts
Division of Professional Licensure
Board of Building Regulations and Standards
Construction Supervisor

CS-098295 Expires: 09/29/2023

MICHAEL A WHITE
48 MOORE STREET
EAST LONGMEADOW MA 01028



Commissioner *Sayla R. Emilia*

Additional representative: Keith Leslie on behalf of Trinity Solar
4 Open Square Way, Suite 410, Holyoke, MA 01040

Phone #: 413-203-9088

Email: applications.westma@trinity-solar.com

Michael A. White

Keith Leslie



QUITCLAIM DEED

I, **PATRICIA A. SHERMAN**, a single person, 93 West Street, Milford, New Hampshire
For consideration paid and in full consideration of ONE HUNDRED FIFTY
THOUSAND AND NO/100 DOLLARS (\$150,000.00), do hereby grant to **DAVID J.
SNYDER and KIM M. SHEA**, husband and wife, as tenants by the entirety and not
tenants in common, 36 Howe Road, Spencer, Massachusetts, with QUITCLAIM
COVENANTS,

The land with the buildings thereon, in the Southerly part of Spencer, on the West side of
Howe Road, bounded and described as follows:

BEGINNING at an iron pin on the Westerly side of Howe Road at the Northeast corner
thereof, at land, now or formerly, of Robert D. Taylor, et ux;

THENCE N. 58° 16' W. 364.55 feet to an iron pin at a stone wall at land, now or
formerly, of Felix P. Dufault et ux;

THENCE S. 34° 29' W. 157.92 feet along said stone wall and land of said Dufault;

THENCE S. 19° 30' W., along said stone wall and said Dufault land, 166.43 feet to a
point;

THENCE S. 32° 26' W., along said stone wall and said land of said Dufault, 161.25 feet
to a point;

THENCE S. 45° 04' E., 242.15 feet partially along said Felix P. Dufault land and along
land now or formerly, of Joseph Frigon which is 1.5 feet North of a wall to an iron pin in
the Westerly line of Howe Road;

THENCE Northwesterly along the Westerly line of Howe Road, 433.0 feet, more or less,
to an iron pin;

THENCE Northwesterly also along the Westerly side of Howe Road, 114.90 feet to the
point of beginning.

LESS the land in Spencer, Massachusetts, on the westerly side of Howe Road as shown
on a plan of land entitled "Plan of Land Surveyed for William C. & Elsie L. Farmer in
Spencer, Massachusetts" dated May 28, 1984, surveyors John and Francis Dowgielewicz,

36 HOWE ROAD, SPENCER

MASSACHUSETTS EXCISE TAX
Worcester District ROD #20 001
Date: 03/02/2008 02:05 PM
Ctrl# 048746 09212 Doc# 00030693
Fee: \$684.00 Cons: \$150,000.00

Return:
Grantee

J

recorded in the Worcester District Registry of Deeds, Plan Book 524, Plan 105, bounded and described as follows:

BEGINNING at a point on Howe Road, at the southernmost corner of the lot to be conveyed, at a corner of land now or formerly of Frigon;

THENCE N. 45° 04' West, 210 feet by land now or formerly of said Frigon to a point;

THENCE S. 44° 56' W., 1.5 feet to a stone wall at land of said Frigon;

THENCE Northwesterly along said stone wall, 32.15 feet to a drill hole at a corner of walls;

THENCE N. 32° 35' 10" E., along a stone wall to a drill hole in said stone wall;

THENCE turning and running N. 19° 45' 10" East, 99.5 feet along said wall to a point;

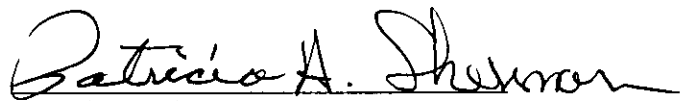
THENCE South 47° 27' 00" E., by land of Sherman, now or formerly, 337.3 feet to a point in the westerly line of said Howe Road;

THENCE S. 48° 56' 35" W., 260.0 feet along said westerly line of Howe Road, to the point of beginning.

SUBJECT to a right of way 20.0 feet in width along the entire southerly line of the first described tract from Howe Road to land of Felix P. Dufault et ux, their heirs, executors or assigns.

Being the premises conveyed to Grantor by Deed dated May 17, 1979 and recorded with the Worcester District Registry of Deeds in Book 6732, Page 384, and by Deed dated May 17, 1979 and recorded with the Worcester District Registry of Deeds in Book 6732, Page 386, less the premises conveyed by Grantor and the late Frederick S. Sherman to William C. Farmer and Elsie L. Farmer, recorded with the Worcester District Registry of Deeds in Book 8370, Page 28.

WITNESS my hand and seal this 21 day of February, 2006.


Patricia A. Sherman

COMMONWEALTH OF MASSACHUSETTS

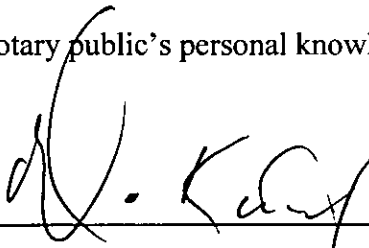
WORCESTER, ss.

On February 2nd, 2006, before me, the undersigned notary public, personally appeared PATRICIA A. SHERMAN (the "Principal") and acknowledged to me that the Principal signed the preceding or attached document voluntarily for its stated purpose. The Principal proved to me through satisfactory evidence of identification that the Principal is the person whose name is signed on the preceding or attached document. The satisfactory evidence of identification provided to me was:

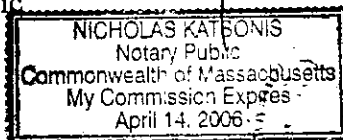
A current document issued by a federal or state government agency bearing the photographic image of the Principal's face and signature; or

On the oath or affirmation of a credible witness unaffected by the document or transaction who is personally known to the notary public and who personally knows the Principal; or

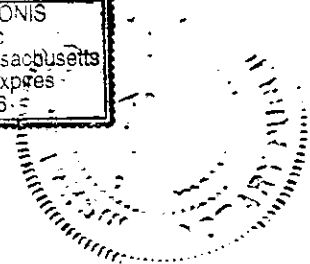
Identification of the Principal based on the notary public's personal knowledge of the identity of the Principal.



Notary Public



[Seal]



ATTEST: WORC. Anthony J. Vigliotti, Register

Materials are to be delivered to site via Howe Rd and the existing driveway in front of the residence.

Simplified Process Interconnection Application and Service Agreement

Contact Information (TYPE or PRINT):

Date Prepared: _____

Legal Name and Address of Interconnecting Customer

Interconnecting Customer: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening): _____

Facsimile Number: _____ E-Mail Address: _____

Host Retail Customer Contact Information (complete any that are different than Interconnecting Customer information above):

Retail Customer: _____ Contact Person: _____

E-Mail Address: _____ Telephone: _____

Landowner Name (if neither Interconnecting Customer nor Customer): _____

Landowner Email: _____ Landowner Telephone: _____

Landowner Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Alternative Contact Information (e.g., system installation contractor or coordinating company, if appropriate):

Company Name: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening): _____

Facsimile Number: _____ E-Mail Address: _____

Electrical Contractor Contact Information (if appropriate): ****Same as Alternative Contact Information****

Name: _____ E-mail Address: _____

Mailing Address: _____ Telephone: _____

City: _____ State: _____ Zip Code: _____

Ownership Information (include % ownership by any electric utility): _____

Confidentiality Statement: "I agree to allow information regarding the processing of my application (without my name and address) to be reviewed by the Massachusetts DG Working Group that is exploring ways to further expedite future interconnections." Yes No

Facility Information (TYPE or PRINT):

Address of Facility: _____

City: _____ State: _____ Zip Code: _____

Electric Service Company: National Grid Account Number: _____ Meter Number: _____

Work Request Number (For Upgrades or New Service): _____ MTC ID: _____

1) Inverter Manufacturer: _____ Model Name and Number: _____ Quantity: _____

Nameplate Rating: _____ (kW_{AC}) _____ (kVA) _____ (AC Volts) Single or Three Phase

2) Inverter Manufacturer: _____ Model Name and Number: _____ Quantity: _____

Nameplate Rating: _____ (kW_{AC}) _____ (kVA) _____ (AC Volts) Single or Three Phase

System Design Capacity: Nominal _____ (kW_{ac}) _____ (kVA) Maximum _____ (kW_{ac}) _____ (kVA)

Battery Storage: Yes No Applying for MA SMART: Yes No Is this a Standalone System: Yes No

Prime Mover: Photovoltaic Reciprocating Engine Fuel Cell Turbine Other: _____

Energy Source: Solar Wind Hydro Diesel Natural Gas Fuel Oil Other: _____

IEEE 1547.1 (UL 1741) Listed? Yes No For Solar PV provide the DC-STC rating: _____ (kW_{DC})


Authorized/Proposed generation capacity already exists: On Current Account On Same Legal Parcel of Land In Same Building/Structure

If so, include existing generation capacity on design diagrams, and provide Application Number(s): _____

Estimated Install Date: _____ Estimated. In-Service Date: _____

Interconnecting Customer Signature:

I hereby certify that, to the best of my knowledge, all of the information provided in this application is true and I agree to the Terms and Conditions for Simplified Process Interconnections attached hereto and included in Exhibit A of the Company's Standards for Interconnection of Distributed Generation in effects from time to time:

Signature:  Title: _____ Date: 12/28/21

Approval to Install Facility (For Company use only):

Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any system modifications, if required (Are system modifications required? Yes No To be Determined):

Signature: _____ Title: _____ Date: _____

Application ID number: _____ Company waives inspection/Witness Test? Yes No

Simplified Process Interconnection Application and Service Agreement

- 1) **Construction of the Facility.** The Interconnecting Customer may proceed to construct the Facility once the Approval to Install the Facility has been signed by the Company.
- 2) **Interconnection and operation.** The Interconnecting Customer may operate Facility and interconnect with the Company's system once the following has occurred:
 - a) **Municipal Inspection.** Upon completing construction, the Interconnecting Customer will cause the Facility to be inspected or otherwise certified by the local electrical wiring inspector with jurisdiction.
 - b) **Certificate of Completion.** The Interconnecting Customer returns the Certificate of Completion appearing as Attachment 2 to the Agreement to the Company at address noted.
 - c) Company has completed or waived the right to inspection.
 - d) The Company has issued the Authorization to Interconnect
- 3) **Company Right of Inspection.** Within ten (10) Business Days after receipt of the Certificate of Completion, the Company may, upon reasonable notice and at a mutually convenient time, conduct an inspection of the Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with the Interconnection Tariff. The Company has the right to disconnect the Facility in the event of improper installation or failure to return Certificate of Completion. If the Company does not inspect in 10 days or by mutual agreement of the Parties, the Witness Test is deemed waived.
- 4) **Safe Operations and Maintenance.** The Interconnecting Customer shall be fully responsible to operate, maintain, and repair the Facility.
- 5) **Access.** The Company shall have access to the disconnect switch (if required) of the Facility at all times.
- 6) **Disconnection.** The Company may temporarily disconnect the Facility to facilitate planned or emergency Company work.
- 7) **Metering and Billing.** All Facilities approved under this Agreement qualify for net metering, as approved by the Department from time to time, and the following is necessary to implement the net metering provisions:
 - a) **Interconnecting Customer Provides Meter Socket.** The Interconnecting Customer shall furnish and install, if not already in place, the necessary meter socket and wiring in accordance with accepted electrical standards.
 - b) **Company Installs Meter.** The Company shall furnish and install a meter capable of net metering within ten (10) Business Days after receipt of the Certificate of Completion if inspection is waived, or within 10 Business Days after the inspection is completed, if such meter is not already in place.
- 8) **Indemnification.** Except as the Commonwealth is precluded from pledging credit by Section 1 of Article 62 of the Amendments to the Constitution of the Commonwealth of Massachusetts, and except as the Commonwealth's cities and towns are precluded by Section 7 of Article 2 of the Amendments to the Massachusetts Constitution from pledging their credit without prior legislative authority, Interconnecting Customer and Company shall each indemnify, defend and hold the other, its directors, officers, employees and agents (including, but not limited to, Affiliates and contractors and their employees), harmless from and against all liabilities, damages, losses, penalties, claims, demands, suits and proceedings of any nature whatsoever for personal injury (including death) or property damages to unaffiliated third parties that arise out of, or are in any manner connected with, the performance of this Agreement by that party, except to the extent that such injury or damages to unaffiliated third parties may be attributable to the negligence or willful misconduct of the party seeking indemnification.
- 9) **Limitation of Liability.** Each party's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement,

Simplified Process Interconnection Application and Service Agreement

shall be limited to the amount of direct damage actually incurred. In no event shall either party be liable to the other party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever.

- 10) **Termination.** This Agreement may be terminated under the following conditions:
 - a) **By Mutual Agreement.** The Parties agree in writing to terminate the Agreement.
 - b) **By Interconnecting Customer.** The Interconnecting Customer may terminate this Agreement by providing written notice to Company.
 - c) **By Company.** The Company may terminate this Agreement (1) if the Facility fails to operate for any consecutive 12 month period, (2) in the event that the Facility impairs the operation of the electric distribution system or service to other Customers or materially impairs the local circuit and the Interconnecting Customer does not cure the impairment, or (3) if the Interconnecting Customer does not substantially complete construction within 12 months after receiving approval from the Company. Notwithstanding the foregoing, the Company's right to terminate this Agreement under (3) above is subject to any claim of Force Majeure made by the Interconnecting Customer in accordance with, and subject to the limitations of, Section 3.7 of the Interconnection Tariff (as defined below).

- 11) **Assignment/Transfer of Ownership of the Facility.** This Agreement shall survive the transfer of ownership of the Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies the Company.

- 12) **Interconnection Tariff.** These Terms and Conditions are pursuant to the Company's Standard for Interconnection of Distributed Generation Tariff ("Interconnection Tariff"), as approved by the Department of Public Utilities and as the same may be amended from time to time. All defined terms set forth in these Terms and Conditions are as defined in the Interconnection Tariff (see Company's website for complete tariff).

00403904 – MA CONDITIONAL APPROVAL TO INTERCONNECT [ref:_00Dd0fPcB._5006T1tHUBF:ref]

noreply@salesforce.com <noreply@salesforce.com>

on behalf of

Ronald Trowbridge <cap@nationalgrid.com>

Thu 1/6/2022 5:18 AM

To: West MA Applications <applications.westma@trinity-solar.com>

Cc: kshea414@aol.com <kshea414@aol.com>



Greetings,

Your Simplified Interconnection Application (00403904) has been conditionally approved for construction, meaning that you are authorized to construct and test the new system, but not to leave it online. **National Grid will provide an "Authority to Interconnect" letter only after all requirements and standards, as detailed below, have been met, and after your standard meter has been replaced with a bi-directional net meter.** This is especially important, as operating a generation system behind a standard meter may cause billing errors.

******IF PARTICIPATING IN THE MA SMART PROGRAM******

The required **Service Upgrade form must be completed in the portal. this form record will become available on every case at the time of Conditional Approval. Please note an inspection on the newly added generation meter socket will need to be completed prior to submitting completion documents.**

******IF NOT PARTICIPATING IN THE MA SMART PROGRAM******

This Conditional Approval is not authorization to perform a service upgrade, service relocation, parallel service, or service drop replacement. Any modification to the existing service will require approval under a separate work order and is subject to existing ESB requirements.

A bi-directional meter **MAY** be set at your location per our discretion once Conditional Approval has been issued but you are not authorized to operate your system until National Grid has provide an "Authority to Interconnect" letter. The bi-directional meter may be in place but it will not bill correctly until the "Authority to Interconnect" has been issued.

Next Steps

Please use the [Simplified Checklist](#) to ensure that you provide all necessary documentation. *Note: The project completion documentation on the checklist may need to be submitted at different times.* Any documents not attached to this email are available

at http://www.nationalgridus.com/masselectric/home/energyeff/4_interconnection-documents.asp.

****Any permanent plaques must be suitable for the environment in which they are located and rated to last for the lifetime of the generation equipment. **NO STICKERS** of any type will be accepted as permanent plaques for equipment that is located outside.

- **For your records:** Please find attached a scanned copy of the approved Simplified Interconnection Application (SIA) and Service Agreement (and Exhibit H if applicable) for your generator installation.
- **For technical requirements:** The National Grid's Electric System Bulletin ESB756 "Requirements for Parallel Generation Connected to a National Grid-Owned EPS" applies to this distributed generation system. In Massachusetts, [Appendix C of ESB756](#) should be referenced for all distributed generation projects that operate in parallel with National Grid's EPS.

For single-phase generators >10kW

As part of the new Net Metering System of Assurance in Massachusetts, the attached documentation must be submitted to the [Cadmus Group's MassACA system](#) as part of the registration process. This system is managed by Cadmus on behalf of the Massachusetts Department of Public Utilities (DPU) per order 11-11A (issued 10/25/2012). Therefore, all questions regarding the Net Metering System of Assurance must be directed to either Cadmus or the DPU. <http://www.massaca.org/>. **You must supply your Cadmus approval with your completion documents so the customer account can receive the proper credit.**

Please be aware that single-phase generators >10kW that do not receive approval through the Net Metering System of Assurance will be setup as qualifying facilities and will only be eligible to receive wholesale rate credits for any excess monthly generation (not the full retail rate like net metering credits). Also, qualifying facilities are not eligible to transfer credits to other accounts. If you have not received Cadmus Approval you will need to complete a P-Rate form.

Notes

Note about Net Metering: *You will be eligible for net metering credits as long as there is still capacity under the limit to accommodate the full rating of your facility at the time you receive your "Authority to Interconnect" letter. Remaining net metering capacity for National Grid customers can be found at <http://www.massaca.org/>.*

Note about Qualifying Facilities: *While the Company is required to purchase output from a customer-owned generator as a Qualifying Facility (QF), the price the Company is authorized to pay is the hourly wholesale clearing price at the ISO-NE. Unlike net-metering, where a customer can assign credits to other customers, or 'bank' excess power over a billing month, payments for QFs are calculated for every hour there is export back to the Company's system. Customers receiving payments as a QF are not able to transfer these payments to other accounts. It is important Customers understand how their electric usage profile compares to their proposed generation profile in order to properly assess the particular economics of any installation. Please refer to the below links on the*

ISO-NE website for further information: http://www.iso-ne.com/markets/hrly_data/index.html.

Note about Witness Testing: National Grid reserves the right to request a witness test before the Authorization to Interconnect is granted.

Interconnection Data Validation

*****No data validation response is required, unless the information provided below is incorrect.*****

To improve our process and comply with a directive from the Massachusetts Department of Public Utilities, we seek to verify and record our processing of your interconnection application and the amount of company time (in full business days) that it took for us to provide you with the conditional approval to interconnect.

Based on the timeframes in the interconnection tariff, M.D.P.U. No. 1468 ("Tariff"), our records show that:

1. The interconnection application was reviewed as a Simplified application. Pursuant to the Tariff, the allowable time to process this application is 25 business days.
2. We received your application on 12/29/2021 12:57 PM.
3. National Grid is sending you this conditional approval to interconnect on 1/6/2022.
4. Accordingly, we calculate that National Grid processed your application within 5 business days. It is important to note that we are measuring only company processing time and not any time when your project was on a customer hold, including any time that you may have needed to complete or update your application with requested information, signatures, or payments.

If you agree with all of the above, no further action is required from you; however, if you disagree, then you have 10 business days (from the date of this email) to reply to this email, notifying us of your questions or disagreement about this data validation.

Once all other items have been satisfactorily completed, National Grid will request the installation of a new meter (if applicable). A new meter installation could take up to two weeks for installation after all documentation is provided. Then, National Grid will provide the Interconnecting Customer with the Authorization to Interconnect (after the new meter has been installed). In order to help facilitate the timely installation of your bi-directional net meter (after all other requirements are met), please notify National Grid of any changes to your anticipated online date.

*****A bi-directional meter MAY be set at your location per our discretion once Conditional Approval has been issued but you are not authorized to operate your system until National Grid has provided an "Authority to Interconnect" letter. The bi-directional meter may be in place but it will not bill correctly until the "Authority to Interconnect" has been issued.**

If anything changes with the project please let me know. All communications to National Grid should be sent to me, with a copy to CAP@nationalgrid.com.

Thank you and best of luck with the construction of your new system.

Snyder36Howe01562



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External Email: Do not click links or attachments unless you recognize the sender and know the content is safe.

STANDARD INSTALLATION AGREEMENT

| | | |
|--|--|---|
| <u>Sub-Contractor</u> Solar Foundations USA, Inc. 1142 River Road New Castle, DE 19720 855-738-7200 | <u>Contractor</u> Trinity Solar 4 Open Square Way Suite 410 Holyoke, MA 01040 | <u>Job Location</u> Snyder Residence 36 Howe Rd Spencer, MA 01562 |
|--|--|---|

| | | |
|--------------------------------------|------------------------|----------------------|
| SFUSA Plans Dated: 01/31/2022, Rev 0 | Approximate Start: TBD | Approximate End: TBD |
|--------------------------------------|------------------------|----------------------|

We hereby submit specifications and estimates for the solar array ground mount structure (the "Solar Foundations Work"):

1. The estimate is based on the following design assumptions:
 - 1.1 113 mph basic wind speed
 - 1.2 50 psf ground snow load
 - 1.3 Exposure category B
 - 1.4 24" Average leading edge height
 - 1.5 30 degree array tilt angle
 - 1.6 Hanwha Q.PEAK DUO BLK ML-G10+ Solar Panels (41.14" x 73.98" x 32 mm)
 - 1.7 Ground slope, Array slope and array location detail.
 - 1.71 Ground contour is flat in the north-south direction and a maximum of 5 degrees slope in the east-west direction
 - 1.72 The array will follow the east-west site slope if the site slope in the east-west direction exceeds 10"
 - 1.73 The site is fully accessible (clear access path) and that the work area is clear of brush, debris and all stumps have been removed
2. The sub-structure cost includes the material and installation of the following: (1 - 5Lx4C sub-array)
 - 2.1 2½" Sch 40 Helical Piles
 - 2.2 North-south diagonal wind brace
 - 2.3 Horizontal tube steel beam
 - 2.4 Horizontal beam mounting hardware
 - 2.5 Stamped structural drawings
 - 2.6 (1) Equipment support column(s) installed per field direction
3. The module mounting system consists of the following materials only, no installation except as noted:
 - 3.1 SF Rails and mounting hardware, including installation
 - 3.2 Solar panel top mount hardware
 - 3.3 WEEB-DMC clips for solar panel grounding
 - 3.4 Grounding Lug Kit

| | |
|--------------------|---|
| Additional Charges | 1. \$400.00 minimum delay charge if the array corners are not staked out prior to our crew arrival on the job site 2. \$400.00 minimum additional charge will be added if the installation area is further than 100' from the vehicle access area 3. \$35.00 per location pre-drill charge for pile locations requiring rock augering 4. \$125.00 per location pre-drill charge for pile locations requiring rock drilling |
|--------------------|---|

The Contractor shall be responsible for the following:

- 1) Obtain and/or submit any and all necessary permits, approvals, applications, requests and/or other applicable governmental consents as may be necessary
- 2) Prepare as necessary, any and all plans, specifications and/or similar design specifications. Solar Foundations USA, Inc. shall provide engineer stamped structural drawings if specifically listed in the work scope. No engineering reviews have been performed for non Solar Foundation drawings.
- 3) Properly and clearly mark the outside corners of the array.
- 4) Ensure that there are no underground improvements (gas, water, power, phone, cable etc.) within the array location.
- 5) All Miss Utility/Dig-Safe notifications (or equivalent notifications required prior to excavation) shall be made by the Contractor, which shall include notification to applicable utility companies prior to the commencement of the Solar Foundations Work.
- 6) Contractor shall properly locate and mark any and all underground utilities, pipes, conduits and lines in the work area. Solar Foundations USA shall, under no circumstances, be responsible for any damage caused to any Underground Improvements which are not accurately and clearly identified by Contractor.

Either party may terminate this Agreement for any reason in the event: (i) the Solar Foundations Work is stopped, delayed and/or limited in any manner beyond the control of Solar Foundations for a period of fifteen (15) days or more; (ii) the Solar Foundations Work is stopped, delayed or limited in any manner resulting from the act or neglect of Contractor for a period of seven (7) days; (iii) Contractor fails to pay Solar Foundations any payment due under this Agreement within seven (7) days after it is due; (iv) Solar Foundations is unable for any reason to install the Posts at the locations established by Contractor hereunder, in which event: (a) Solar Foundations reserves the right to remove any Posts installed and terminate this Agreement; and (b) Solar Foundations shall not be obligated to restore and/or repair the Project following such removal; or (v) any other reason or cause reasonably determined by Solar Foundations which would frustrate the intended agreement of the parties hereunder upon fifteen (15) days' prior written notice to Contractor. Solar Foundations shall make a good-faith, due diligent effort to keep the Project free from the accumulation of waste materials and/or rubbish generated by Solar Foundations. Contractor acknowledges that minor damage may be caused by the undertaking and completion of the Solar Foundations Work, and in no event shall Solar Foundations be responsible for minor damage to any lawns, shrubbery, trees and/or improvements located adjacent to the Project. Solar Foundations shall not be responsible for securing gates and/or fencing and in no event shall Solar Foundations be responsible for pets or other animals on the project site. All work excludes prevailing wage rates unless specifically included in the work scope. Should it be determined at a later date that the project was subject to prevailing wage rates, the Contractor will be responsible for any additional cost associated with payment of prevailing wages including back pay and any penalties. All payments made shall be applied to the oldest outstanding invoice regardless of project/job. All reasonable attorney fees resulting from the Contractor's failure to meet the contract terms shall be paid for by the Contractor.

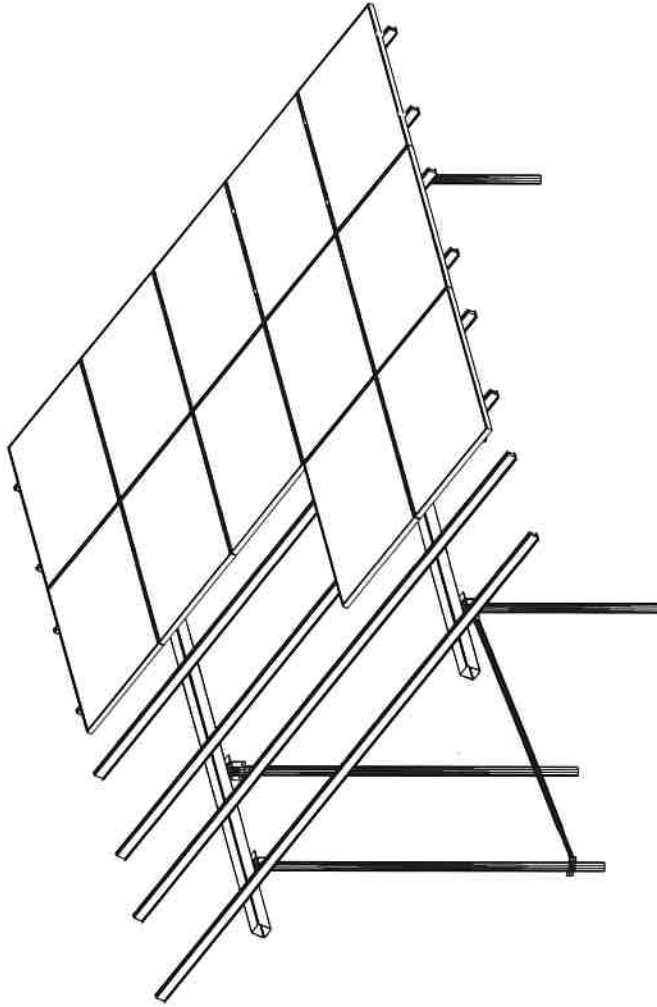
| | | |
|--|-------------------|---|
| We propose to furnish the Solar Foundations Work in accordance with this agreement, for the sum of: | \$5,950.00 | Payment due in full within 30 days of completion Late payments accrue interest at 1½ % per month |
|--|-------------------|---|

| | | | | |
|-----------------------------------|------------|-------------------------------|--|------|
| Solar Foundations Rep. Signature: | | Proposal Agreed and Accepted: | | Date |
| Date: | 01/31/2022 | | | |

BY THE CONTRACTOR'S SIGNATURE ABOVE, THE CONTRACTOR EXPRESSLY AGREES THAT THE TERMS AND CONDITIONS ON REVERSE SIDE ARE INCORPORATED HEREIN AND MADE A PART HEREOF

| | | | | | |
|--|--|--|--|--|--|
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PLAN VIEW
N.T.S.



Site Design Conditions

Basic Wind Speed: 123 MPH
 (Risk Category II)
 Exposure Category: I
 (Risk Category I)
 Max. Lateral Resistance: 1,885 lbs.
 Max. Lag Uplift: 1,885 lbs.
 Max. Lateral Resistance: 1,800 lbs.
 Top Rail Max. Loadings: 122.8 plf
 Ground Snow Load: 50 PSF
 Flat Roof Snow Load: 35 PSF
 Helical Pile Depth: 60" Min
 (If applicable)
 Site Contour: $+3$ Degree Slope
 Lateral Resistance Plate Size: Not Req'd

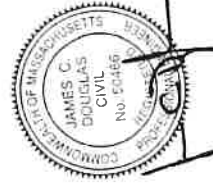
All design work has been performed in accordance with the Massachusetts State Building Code, Ninth Edition (780 CMR) but not limited to the 2015 International Building Code as amended by 780 CMR.

Net design pressures were calculated in accordance with ASCE 7-10 section 27.4.3, "Open Buildings with Monoslope, Pitched, or Truss-Roofed". All load cases were evaluated in determining the limiting design conditions. The data table above provides the results for the limiting load case. Maximum lag resistance values represent the highest load condition seen by any lag in the structure. All lags in the structure are designed to meet the maximum load conditions.

5Lx4C_Sub-Array Design Conditions

Front Leg Height: 38"
 Rear Leg Height: 94"
 North-South Pile Spacing: 97"
 West Span Pile Spacing: N/A
 East Span Pile Spacing: N/A
 Quantity Center Spans: 1
 Center Span Pile Spacing: 14'-0"
 East & West Overhang: 4'-9"
 Overall Beam Length: 23'-6"
 Front Edge Ground Clearance: 24"
 Horizontal Rail Material: 5" x 4" x 1/8" HSS
 Top Rail Material: SF Rails
 Qty Rails per Panel: 2
 Top Rail Length: 212"
 Top Rail Center Span: 112 1/2"
 Top Rail Overhangs: 49 1/2"
 Array Tilt Angle: 30 Degrees
 Overall Array East-West Dim: 241'-9"
 Number of Modules/Sub-Arrays: 20
 Number of Sub-Arrays: 1
 Module Columns/Sub-Array: 4
 Number of Module Rows: 5
 Module Orientation: Landscape
 Module Column Spacing: 3"
 Module Row Spacing: 7"
 Module Model: Q-PEAK DUO BLK ML-G10+
 Module Size: 41.14" x 73.98"
 Individual Module Rating: 400 watt
 Sub Array Power Rating: 800 kw
 Total Power Rating: 800 kw

1. Additional North Column is to be installed per field direction. The Column is to support equipment mounting needs. It is not required for North beam support.



Trinity Solar

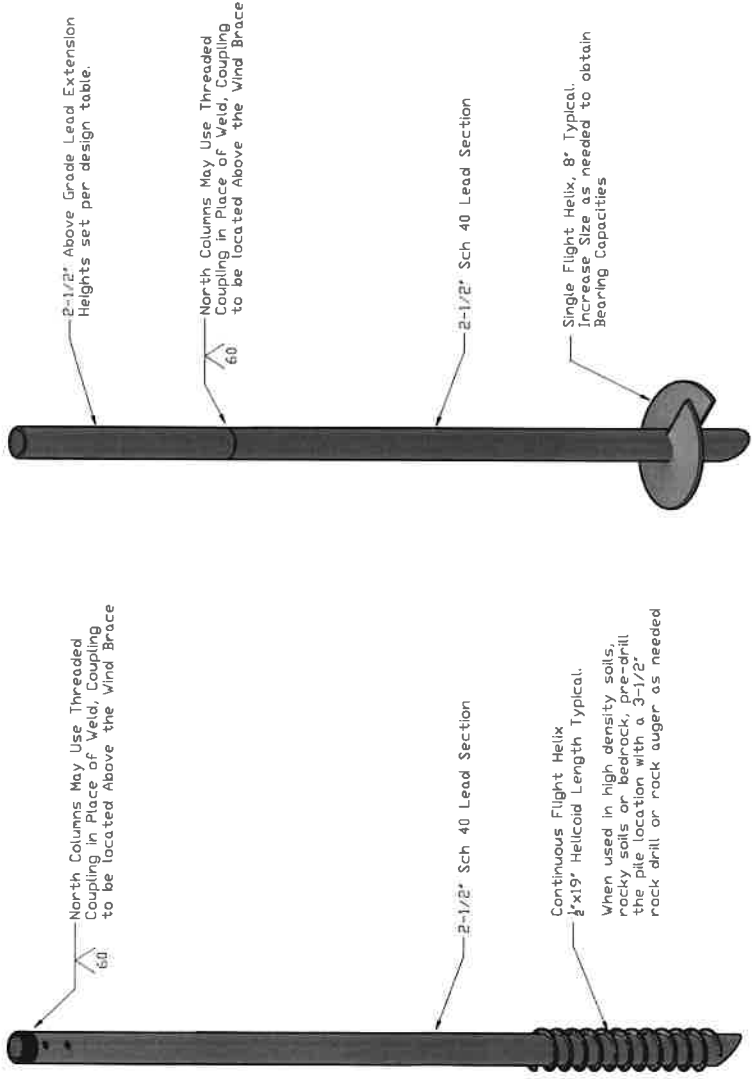
Sheet 1 of 3

| Date | Revision | Drawn By | Review By |
|------------|----------|----------|-----------|
| 01/31/2022 | Original | JB | JD |
| | | | |
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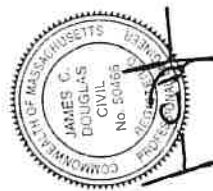
Project:
 Snyder Residence
 36 Howe Road
 Spencer, MA 01562

Solar Foundations USA

1142 River Road, New Castle, DE 19720 Ph: (855) 738-7200 Fax: (846) 644-3665



HELICAL PILE DETAIL
N.T.S.



- Specification Requirements:**
- The following material specification requirements pertain to the fabrication of the Solar Foundations USA ground mount solar support structure as indicated on these drawings:
- Solar Foundation aluminum rails shall conform to ASTM B221.
 - Structural steel tubing shall be ASTM A500 High Yield (60 Ksi).
 - Steel pipe for piles shall conform to ASTM A500 Grade C.
 - Steel pile extensions shall be ASTM A53 Grade B.
 - Steel pipe for diagonal bracing shall be ASTM A53 Grade A.
 - Fabricated steel plate for column cap assemblies, bracing clamps, etc. shall be ASTM A36 or A1011.
 - Steel bolts for cap fasteners shall conform to SAE J429 Grade 5.
 - All other bolts shall conform to SAE J429 Grade 5.
 - Washer bolts shall conform to ASTM 1018.
 - Use flat steel washers shall conform to ASTM F844 and nuts for steel connections shall conform to ASTM A563 Grade A.
 - All field welding shall conform to AWS D11.1/D11.1M - Structural Welding Code requirements.
 - All steel shall be hot-dip galvanized per ASTM A123 or A153 after all fabrication has been completed.

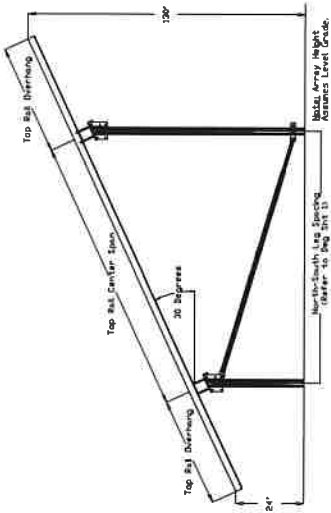
Installation Requirements:

- The minimum average installation torque required to obtain the required capacities and the minimum installation depth shown on the plans shall be satisfied prior to termination of the installation. The installation torque shall be an average of the installation torques indicated during the last 1 foot of installation.
- The torsional strength rating of the torque anchor shall not be exceeded during the installation. If the torsional strength limit of the anchor has been reached, but the anchor has not reached the target depth, perform the following:
 - If the torsional strength limit is achieved prior to reaching the target depth, the installation may be acceptable if reviewed and approved by the engineer and/or owner.
 - The installer may remove the torque anchor and install a new one with smaller diameter helical plate.
 - If using a continuous flight pile, pre-drill the pile location with a 3-1/2" rock auger or 3-5/8" rock drill as needed.
- If the target depth is achieved, but the torsional requirement has not been met, the installer may do one of the following:
 - Install the torque anchor deeper to obtain the required capacity.
 - Remove the torque anchor and install a new one with a larger diameter helical plate or one with multiple helical plates.
 - Reduce the load capacity on the individual torque anchor by providing additional torque anchors at a reduced spacing.

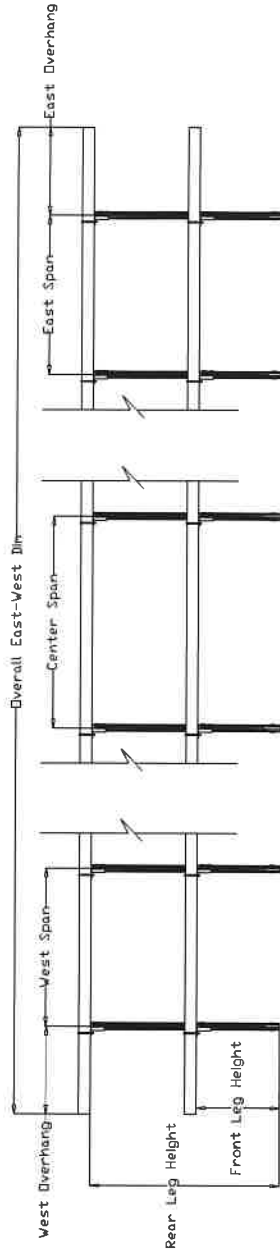
Trinity Solar

Project:
Snyder Residence
36 Howe Road
Spencer, MA 01562

| Date | Revision | Drawn By: | Review By: |
|------------|----------|-----------|------------|
| 01/31/2022 | Original | JB | JD |
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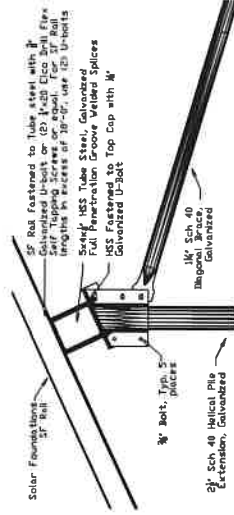


SIDE ELEVATION DETAIL
N. T. S

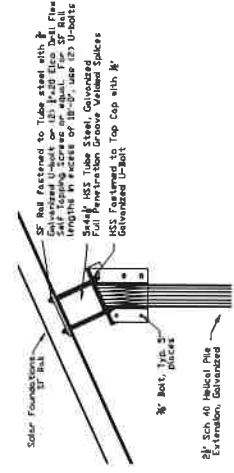


Refer to Dwg Sheet 1 for East-West Pile Spans and Front and Rear Leg Heights.

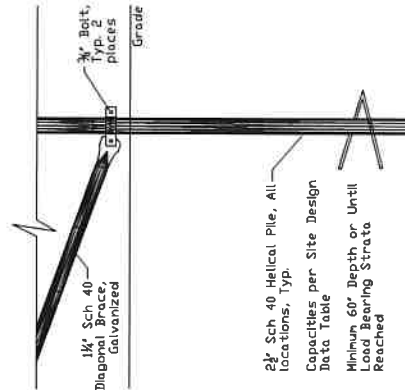
POST SPACING ELEVATION DETAIL
N. T. S



UPPER CAP DETAIL
N. T. S

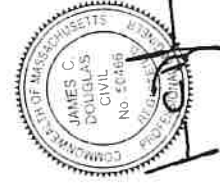


LOWER CAP DETAIL
N. T. S



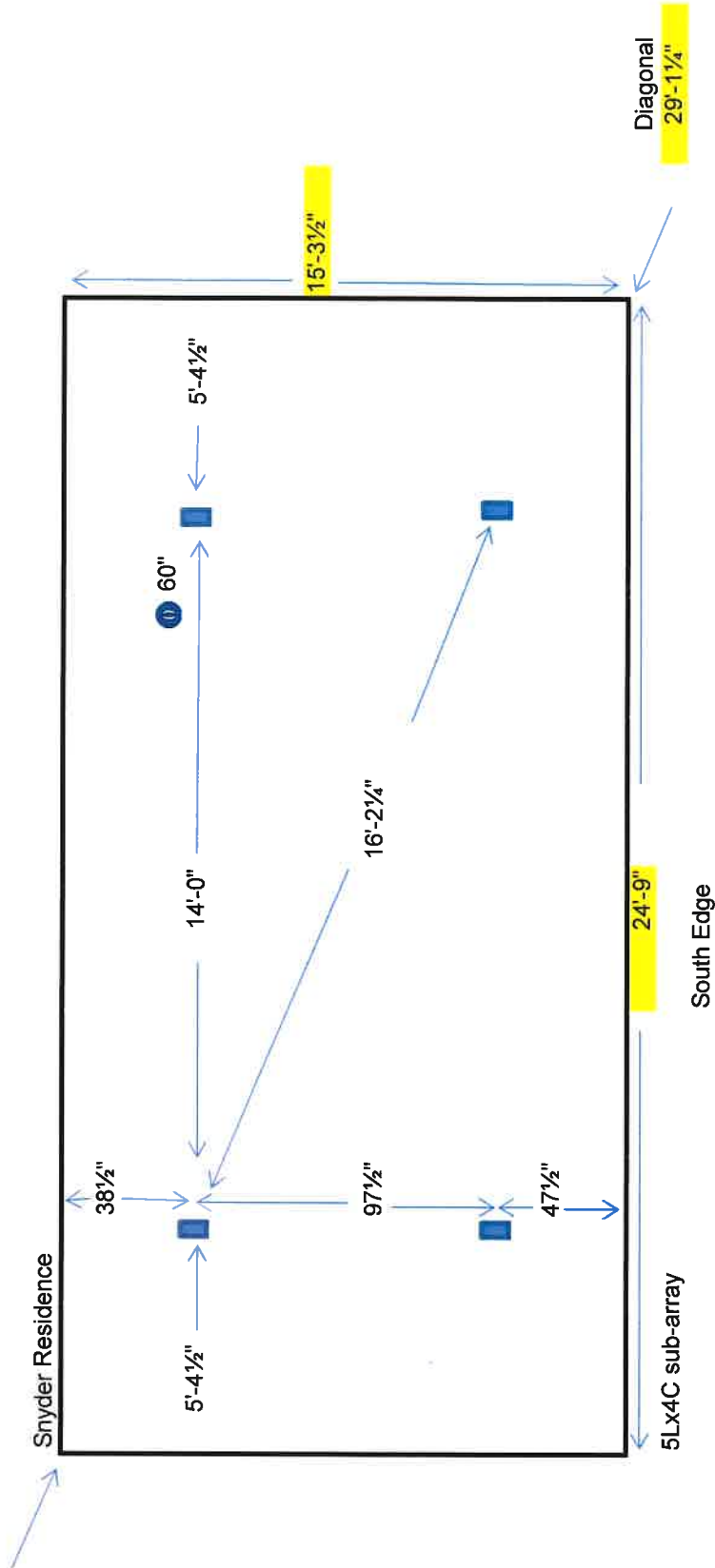
HELICAL PILE DETAIL
N. T. S

2 1/2" Sch 40 Helical Pile, All locations, Typ.
Capacities per Site Design Data Table
Minimum 60" Depth or Until Load Bearing Strata Reached



| Date | Revision | Drawn By: | Review By: |
|------------|----------|-----------|------------|
| 01/31/2022 | Original | JB | JD |
| | | | |
| | | | |

Project:
Snyder Residence
36 Howe Road
Spencer, MA 01562



NOTES:

- 1.) COMPLIES WITH NEC 2020
- 2.) REFER TO SHEET PV-3 FOR SITE SPECIFIC VALUES REQUIRED BY NEC 690
- 3.) STICKERS, LABELS, AND PLACKARDS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED

To be located on all DC junction boxes and every 10' on DC conduit

WARNING: PHOTOVOLTAIC POWER SOURCE
NEC 690:31(D)(2)



DC Junction Box



Soladeck



DC Conduit

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE SHUTDOWN PV SYSTEM POSITION TO AVOID SHOCK HAZARD IN ARREAR



NEC 690.56(C)



Service Disconnect

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE SHUTDOWN PV SYSTEM POSITION TO AVOID SHOCK HAZARD IN ARREAR



NEC 690.56(C)

If System is Backfed Breaker
WARNING: PHOTOVOLTAIC AC DISCONNECT
NEC 705.12(B)(3)(2)
PHOTOVOLTAIC AC DISCONNECT
NEC 690.54



Main Service Panel

WARNING: PHOTOVOLTAIC POWER SOURCE
NEC 690.13(B)

Utility



Utility Meter Socket

WARNING: PHOTOVOLTAIC AC DISCONNECT
NEC 690.13(B)



Solar Meter Socket

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM
690.56(C)(2)

WARNING: PHOTOVOLTAIC AC DISCONNECT
NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT
NEC 690.54



Photovoltaic AC Disconnect

PHOTOVOLTAIC AC DISCONNECT
NEC 690.54



Load Center (To Combine Inverters)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM
690.56(C)(2)

WARNING: PHOTOVOLTAIC AC DISCONNECT
NEC 690.13(B)

PHOTOVOLTAIC DC DISCONNECT
NEC 690.4(B)

MAXIMUM DC VOLTAGE OF PV SYSTEM
NEC 690.53



Inverter(s)

PHOTOVOLTAIC DC DISCONNECT
NEC 690.4(B)

MAXIMUM DC VOLTAGE OF PV SYSTEM
NEC 690.53



DC Disconnect

WARNING: PHOTOVOLTAIC AC DISCONNECT
NEC 690.13(B)



Enphase Envoy Box



Q.PEAK DUO BLK ML-G10+

385-405

ENDURING HIGH PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER
Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.



THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY
Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry. The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

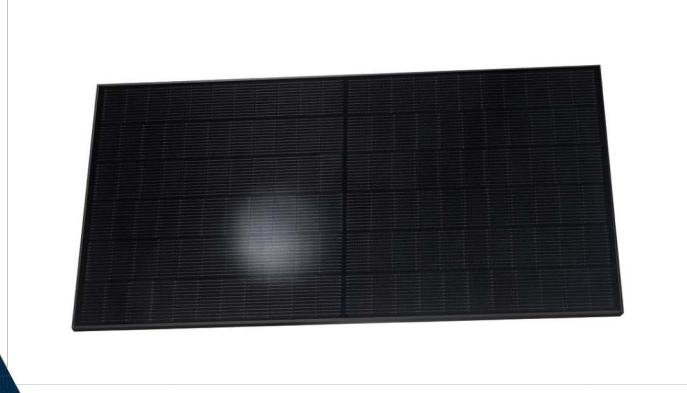
INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behavior.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year linear performance warranty².

¹ APT test conditions according to IEC/TS 62804-1:2015, method A (-1500V, 96h)
² See data sheet on rear for further information.



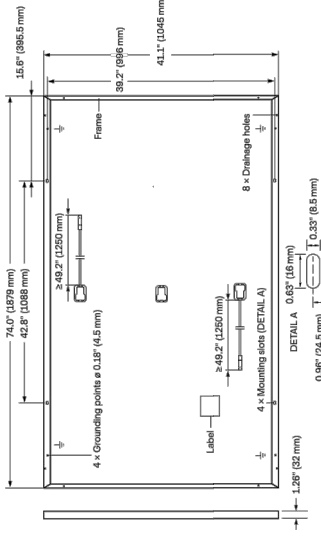
THE IDEAL SOLUTION FOR:



Engineered in Germany

MECHANICAL SPECIFICATION

| | |
|--------------|---|
| Format | 74.0in x 41.1in x 1.26in (including frame) (1879mm x 1045mm x 32mm) |
| Weight | 48.5lbs (22.0 kg) |
| Front Cover | 0.13in (3.2mm) thermally pre-stressed glass with anti-reflection technology |
| Back Cover | Composite film |
| Frame | Black anodized aluminum |
| Cell | 6 x 22 monocrystalline Q.ANTUM solar half cells |
| Junction Box | 2.09-3.98in x 1.26-2.36in x 0.59-0.71in (53-101mm x 32-60mm x 15-18mm), IP67, with bypass diodes |
| Cable | 4mm ² Solar cable; (+) ≥49.2in (1250mm), (-) ≥49.2in (1250mm) |
| Connector | Stäubli MC4; IP68 |

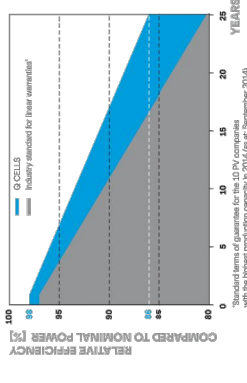


ELECTRICAL CHARACTERISTICS

| POWER CLASS | 385 | 390 | 395 | 400 | 405 |
|---|-------|-------|-------|-------|-------|
| MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC¹ (POWER TOLERANCE ±5W/-0W) | | | | | |
| Power at MPP ² | 385 | 390 | 395 | 400 | 405 |
| Short Circuit Current ¹ | 11.04 | 11.07 | 11.10 | 11.14 | 11.17 |
| Open Circuit Voltage ¹ | 45.19 | 45.23 | 45.27 | 45.30 | 45.34 |
| Current at MPP | 10.59 | 10.65 | 10.71 | 10.77 | 10.83 |
| Voltage at MPP | 36.36 | 36.62 | 36.88 | 37.13 | 37.39 |
| Efficiency ¹ | >19.6 | >19.9 | >20.1 | >20.4 | >20.6 |
| MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NIMOT³ | | | | | |
| Power at MPP | 288.8 | 292.6 | 296.3 | 300.1 | 303.8 |
| Short Circuit Current | 8.90 | 8.92 | 8.95 | 8.97 | 9.00 |
| Open Circuit Voltage | 42.62 | 42.65 | 42.69 | 42.72 | 42.76 |
| Current at MPP | 8.35 | 8.41 | 8.46 | 8.51 | 8.57 |
| Voltage at MPP | 34.59 | 34.81 | 35.03 | 35.25 | 35.46 |

¹ Measurement tolerances P_{MPP} ±3%, I_{SC}, V_{OC} ±5% at STC: 1000W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • 800W/m², NIMOT, spectrum AM 1.5

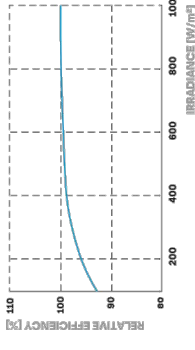
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000W/m²)



TEMPERATURE COEFFICIENTS

| | | | | | | | |
|---|---|-------|-------|--|------|-------|------------------|
| Temperature Coefficient of I _{SC} | α | [%/K] | +0.04 | Temperature Coefficient of V _{OC} | β | [%/K] | -0.27 |
| Temperature Coefficient of P _{MPP} | γ | [%/K] | -0.34 | Nominal Module Operating Temperature | NMOT | [°F] | 109±5.4 (43±3°C) |

PROPERTIES FOR SYSTEM DESIGN

| | | | | |
|--|------------------------|----------------------------|---|---|
| Maximum System Voltage V _{sys} | [V] | 1000 (IEC)/1000 (UL) | PV module classification | Class II |
| Maximum Series Fuse Rating | [A DC] | 20 | Fire Rating based on ANSI/UL 61730 | TYPE 2 |
| Max. Design Load, Push/Pull ¹ | [lbs/ft ²] | 75 (3600 Pa)/55 (2660 Pa) | Permitted Module Temperature on Continuous Duty | -40°F up to +185°F (-40°C up to +85°C) |
| Max. Test Load, Push/Pull ² | [lbs/ft ²] | 113 (5400 Pa)/84 (4000 Pa) | | |

¹ See Installation Manual

QUALIFICATIONS AND CERTIFICATES



UL 61730, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells), GCPV Certification ongoing.

PACKAGING INFORMATION

| | | | | | | | |
|----------------------|--------|--------|--------|---------|---------|---------|---------|
| Horizontal packaging | 76.4in | 43.3in | 48.0in | 1656lbs | 24 | 24 | 32 |
| Vertical packaging | 1940mm | 1100mm | 1220mm | 751kg | pellets | pellets | modules |

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us



Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US



Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)



INVERTERS

Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

| MODEL NUMBER | SE3000H-US | SE3800H-US | SE5000H-US | SE6000H-US | SE7600H-US | SE10000H-US | SE11400H-US |
|--|-----------------|------------|------------|------------|------------|-------------|-------------|
| APPLICABLE TO INVERTERS WITH PART NUMBER | SEXXXXH-XXXXXX4 | | | | | | |
| OUTPUT | | | | | | | |

| | | | | | | | |
|---|---------------------------------|----------------------------|------|----------------------------|------|-------|------------------------------|
| Rated AC Power Output | 3000 | 3800 @ 240V 3300 @ 208V | 5000 | 6000 @ 240V 5000 @ 208V | 7600 | 10000 | 11400 @ 240V 10000 @ 208V |
| Maximum AC Power Output | 3000 | 3800 @ 240V 3300 @ 208V | 5000 | 6000 @ 240V 5000 @ 208V | 7600 | 10000 | 11400 @ 240V 10000 @ 208V |
| AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229) | - | ✓ | - | ✓ | - | - | ✓ |
| AC Frequency (Nominal) | 59.3 - 60 - 60.5 ⁽¹⁾ | | | | | | |
| Maximum Continuous Output Current @240V | 12.5 | 16 | 21 | 25 | 32 | 42 | 47.5 |
| Maximum Continuous Output Current @208V | - | 16 | - | 24 | - | - | 48.5 |
| Power Factor | 1, Adjustable - 0.85 to 0.85 | | | | | | |
| GFDI Threshold | 1 | | | | | | |
| Utility Monitoring, Islanding Protection, Country Configurable Thresholds | Yes | | | | | | |

| | | | | | | | |
|--|-------------------|------|------|------|-------|-------|-------|
| Maximum DC Power @240V | 4650 | 5900 | 7750 | 9300 | 11800 | 15500 | 17650 |
| Maximum DC Power @208V | - | 5100 | - | 7750 | - | - | 15500 |
| Transformer-less, Ungrounded | Yes | | | | | | |
| Maximum Input Voltage | 480 | | | | | | |
| Nominal DC Input Voltage | 380 | | | | | | |
| Maximum Input Current @240V ⁽²⁾ | 8.5 | 10.5 | 13.5 | 16.5 | 20 | 27 | 30.5 |
| Maximum Input Current @208V ⁽²⁾ | - | 9 | - | 13.5 | - | - | 27 |
| Max. Input Short-Circuit Current | 45 | | | | | | |
| Reverse-Polarity Protection | Yes | | | | | | |
| Ground-Fault Isolation Detection | 600ka Sensitivity | | | | | | |
| Maximum Inverter Efficiency | 99 | 99.2 | | | | | |
| CEC Weighted Efficiency | 99 | | | | | | |
| Nighttime Power Consumption | < 2.5 | | | | | | |

| | | | | | | | |
|--|---|--|--|--|--|--|--|
| Supported Communication Interfaces | RS485, Ethernet, ZigBee (optional), Cellular (optional) | | | | | | |
| Revenue Grade Metering, ANSI C12.20 | Optional ⁽³⁾ | | | | | | |
| Consumption metering | With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection | | | | | | |
| Inverter Commissioning | Automatic Rapid Shutdown upon AC Grid Disconnect | | | | | | |
| Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 690.12 | | | | | | | |

| | | | | | | | |
|--|---|-------------|-------------------------------------|-----------------------|--|--|---------|
| Safety | UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07 | | | | | | |
| Grid Connection Standards | IEEE1547, Rule 21, Rule 14 (HI) | | | | | | |
| Emissions | FCC Part 15 Class B | | | | | | |
| INSTALLATION SPECIFICATIONS | | | | | | | |
| AC Output Conduit Size / AWG Range | 1" Maximum / 14-6 AWG | | | 1" Maximum / 14-4 AWG | | | |
| DC Input Conduit Size / # of Strings / AWG Range | 1" Maximum / 1-2 strings / 14-6 AWG | | | | | | |
| Dimensions with Safety Switch (HxWxD) | 17.7 x 14.6 x 6.8 / 450 x 370 x 174 | | 21.3 x 14.6 x 7.3 / 540 x 370 x 185 | | | | in / mm |
| Weight with Safety Switch | 22 / 10 | 25.1 / 11.4 | 26.2 / 11.9 | 38.8 / 17.6 | | | lb / kg |
| Noise | < 25 | | | <50 | | | |
| Cooling | Natural Convection | | | | | | |
| Operating Temperature Range | -40 to +140 / -40 to +60 ⁽⁴⁾ | | | | | | |
| Protection Rating | NEMA 4X (Inverter with Safety Switch) | | | | | | |

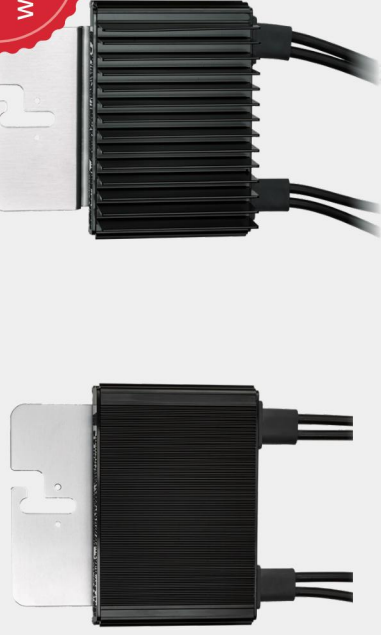
(1) For other regional settings please contact SolarEdge support.
 (2) A higher current source may be used, the inverter will limit its input current to the values stated.
 (3) Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BNA4. For consumption metering, current transformers should be ordered separately: SEACT10750-200NA-20 or SEACT10750-400NA-20; 20 units per box.
 (4) Full power up to at least 50°C / 122°F; for power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-de-rating-note-na.pdf>
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POWER OPTIMIZER

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505



PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com



Power Optimizer For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

| Optimizer model (typical module compatibility) | P320 (for 60-cell modules) | P340 (for high-power 60-cell modules) | P370 (for higher-power 60 and 72-cell modules) | P400 (for 72 & 96-cell modules) | P401 (for high power 60 and 72 cell modules) | P405 (for high-voltage modules) | P485 (for high-voltage modules) | P505 (for higher current modules) |
|--|----------------------------|---------------------------------------|--|---------------------------------|--|---------------------------------|---------------------------------|-----------------------------------|
| Rated Input DC Power ⁽¹⁾ | 320 | 350 | 370 | 400 | 400 | 405 | 485 | 505 |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 48 | 60 | 60 | 80 | 60 | 125 ⁽²⁾ | 125 ⁽²⁾ | 83 ⁽²⁾ |
| MPPT Operating Range | 8 - 48 | 8 - 60 | 8 - 60 | 8 - 80 | 8 - 60 | 12.5 - 105 | 12.5 - 105 | 12.5 - 83 |
| Maximum Short Circuit Current (Isc) | 11 | 13.75 | 11 | 10.1 | 11.75 | 11 | 11 | 14 |
| Maximum DC Input Current | | | | 12.5 | 14.65 | 12.5 | 12.5 | 17.5 |
| Maximum Efficiency | | | | 99.5 | | | | |
| Weighted Efficiency | | | | 98.8 | | | | 98.6 |
| Overvoltage Category | II | | | | | | | |

INPUT

| Optimizer model | P320 | P340 | P370 | P400 | P401 | P405 | P485 | P505 |
|--|--------|--------|--------|--------|--------|--------------------|--------------------|-------------------|
| Rated Input DC Power ⁽¹⁾ | 320 | 350 | 370 | 400 | 400 | 405 | 485 | 505 |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 48 | 60 | 60 | 80 | 60 | 125 ⁽²⁾ | 125 ⁽²⁾ | 83 ⁽²⁾ |
| MPPT Operating Range | 8 - 48 | 8 - 60 | 8 - 60 | 8 - 80 | 8 - 60 | 12.5 - 105 | 12.5 - 105 | 12.5 - 83 |
| Maximum Short Circuit Current (Isc) | 11 | 13.75 | 11 | 10.1 | 11.75 | 11 | 11 | 14 |
| Maximum DC Input Current | | | | 12.5 | 14.65 | 12.5 | 12.5 | 17.5 |
| Maximum Efficiency | | | | 99.5 | | | | |
| Weighted Efficiency | | | | 98.8 | | | | 98.6 |
| Overvoltage Category | II | | | | | | | |

OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)

| Parameter | P320 | P340 | P370 | P400 | P401 | P405 | P485 | P505 |
|------------------------|------|------|------|------|------|------|------|------|
| Maximum Output Current | | | | 15 | | | | |
| Maximum Output Voltage | | | 60 | | | | 85 | |

OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)

| Parameter | Value |
|---|---------|
| Safety Output Voltage per Power Optimizer | 1 ± 0.1 |

STANDARD COMPLIANCE

| | |
|----------|--|
| EMC | FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3 |
| Safety | IEC62109-1 (Class II safety), UL1741 |
| Material | UL94 V-0, UV Resistant |
| RoHS | Yes |

INSTALLATION SPECIFICATIONS

| | |
|--|--|
| Maximum Allowed System Voltage | 1000 |
| Compatible inverters | All SolarEdge Single Phase and Three Phase inverters |
| Dimensions (W x L x H) | 129 x 153 x 33.5 / 5.1 x 6 x 1.3 129 x 153 x 27.5 / 5.1 x 6 x 1.1 |
| Weight (including cables) | 630 / 1.4 750 / 1.7 655 / 1.5 |
| Input Connector | MC4 ⁽³⁾ MC4 ⁽³⁾ or dual MC4 ⁽³⁾⁽⁴⁾ |
| Input Wire Length | 0.16 / 0.52 0.16 or 0.9 / 0.52 or 2.95 ⁽⁵⁾ |
| Output Wire Type / Connector | Double Insulated / MC4 |
| Output Wire Length | 0.9 / 2.95 1.2 / 3.9 |
| Operating Temperature Range ⁽⁶⁾ | -40 - +85 / -40 - +185 |
| Protection Rating | IP68 / NEMAGP |
| Relative Humidity | 0 - 100 |

- (1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed
- (2) NEC 2017 requires max input voltage be not more than 80V
- (3) For other connector types please contact SolarEdge
- (4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals.
- (5) Longer inputs wire length are available for use. For 0.9m input wire length order P401-xxxLxx.
- (6) For ambient temperature above +85°C / +185°F, power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter⁽⁷⁾⁽⁸⁾

| Parameter | P320, P340, P370, P400, P401 (Power Optimizers) | P405, P485, P505 (Power Optimizers) | Single Phase HD-Wave | Single Phase | Three Phase for 208V grid | Three Phase for 277/480V grid |
|--|---|-------------------------------------|----------------------|--------------|---------------------------|-------------------------------|
| Minimum String Length | 8 | 6 | 25 | 8 | 10 | 18 |
| Maximum String Length (Power Optimizers) | 5700 (6000 with SE7600-US - SE11400-US) | 5250 | 6000 ⁽⁹⁾ | 25 | 6000 ⁽⁹⁾ | 12750 ⁽¹⁰⁾ |
| Maximum Power per String | Yes | Yes | Yes | Yes | Yes | Yes |

- (7) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
- (8) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string
- (9) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
- (10) For 208V grid, it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W
- (11) For 277/480V grid, it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

solaredge.com

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/20/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| PRODUCER Arthur J. Gallagher Risk Management Services, Inc. 4000 Midlantic Drive Suite 200 Mount Laurel NJ 08054 | CONTACT NAME: Mark Grasela PHONE (A/C. No. Ext): 856-482-9900 FAX (A/C. No): 856-482-1888 E-MAIL ADDRESS: CherryHill.BSD.CertM@AJG.com | | | | | | | | | | | | | | |
|--|---|--|-------------------------------|--------|--------------------------------------|-------|--|-------|---|-------|--|--|-------------|--|-------------|
| | <table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Gotham Insurance Company</td> <td>25569</td> </tr> <tr> <td>INSURER B : National Union Fire Insurance Company of Pittsburg</td> <td>19445</td> </tr> <tr> <td>INSURER C : Endurance American Specialty Ins Co</td> <td>41718</td> </tr> <tr> <td>INSURER D : Liberty International Underwriters</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </tbody> </table> | | INSURER(S) AFFORDING COVERAGE | NAIC # | INSURER A : Gotham Insurance Company | 25569 | INSURER B : National Union Fire Insurance Company of Pittsburg | 19445 | INSURER C : Endurance American Specialty Ins Co | 41718 | INSURER D : Liberty International Underwriters | | INSURER E : | | INSURER F : |
| INSURER(S) AFFORDING COVERAGE | NAIC # | | | | | | | | | | | | | | |
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| INSURER D : Liberty International Underwriters | | | | | | | | | | | | | | | |
| INSURER E : | | | | | | | | | | | | | | | |
| INSURER F : | | | | | | | | | | | | | | | |
| INSURED Trinity Solar Inc. 4 Open Square Way, Suite 410 Holyoke, MA 01040 | TRINHEA-03 | | | | | | | | | | | | | | |

COVERAGES

CERTIFICATE NUMBER: 206332321

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
|-------------|--|-----------|------------|---|----------------------------------|----------------------------------|--|
| A | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER: | | | GL202100013378 | 6/1/2021 | 6/1/2022 | EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$ |
| B | AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY | | | CA 2960145 | 6/1/2021 | 6/1/2022 | COMBINED SINGLE LIMIT (Ea accident) \$2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ |
| A C D | <input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$ | | | EX202100001871 ELD30006989100 1000231834-05 | 6/1/2021 6/1/2021 6/1/2021 | 6/1/2022 6/1/2022 6/1/2022 | EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 Limit x of \$5,000,000 \$19,000,000 |
| B | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below | | Y/N N/A | WC 13588107 | 6/1/2021 | 6/1/2022 | PER STATUTE OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000 |
| B | Automobile Compl/ Collusion Ded. | | | CA 2960146 | 6/1/2021 | 6/1/2022 | All Other Units \$250/500 Truck-Tractors and Semi-Trailers \$250/500 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Evidence of Insurance.

CERTIFICATE HOLDER**CANCELLATION**

Evidence of Insurance

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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The Commonwealth of Massachusetts
 Department of Industrial Accidents
 1 Congress Street, Suite 100
 Boston, MA 02114-2017
 www.mass.gov/dia

Workers' Compensation Insurance Affidavit: Builders/Contractors/Electricians/Plumbers.
 TO BE FILED WITH THE PERMITTING AUTHORITY.

Applicant Information

Please Print Legibly

Name (Business/Organization/Individual): Trinity Heating & Air, Inc. DBA Trinity Solar

Address: 2211 Allenwood Road

City/State/Zip: Wall, New Jersey 07719 Phone #: 413-203-9088

Are you an employer? Check the appropriate box:

- 1. I am an employer with 1,630 employees (full and/or part-time).*
- 2. I am a sole proprietor or partnership and have no employees working for me in any capacity. [No workers' comp. insurance required.]
- 3. I am a homeowner doing all work myself. [No workers' comp. insurance required.] †
- 4. I am a homeowner and will be hiring contractors to conduct all work on my property. I will ensure that all contractors either have workers' compensation insurance or are sole proprietors with no employees.
- 5. I am a general contractor and I have hired the sub-contractors listed on the attached sheet. These sub-contractors have employees and have workers' comp. insurance ‡
- 6. We are a corporation and its officers have exercised their right of exemption per MGL c. 152, § 1(4), and we have no employees. [No workers' comp. insurance required.]

Type of project (required):

- 7. New construction
- 8. Remodeling
- 9. Demolition
- 10. Building addition
- 11. Electrical repairs or additions
- 12. Plumbing repairs or additions
- 13. Roof repairs
- 14. Other Solar Installation

*Any applicant that checks box #1 must also fill out the section below showing their workers' compensation policy information.

† Homeowners who submit this affidavit indicating they are doing all work and then hire outside contractors must submit a new affidavit indicating such.

‡ Contractors that check this box must attached an additional sheet showing the name of the sub-contractors and state whether or not those entities have employees. If the sub-contractors have employees, they must provide their workers' comp. policy number

I am an employer that is providing workers' compensation insurance for my employees. Below is the policy and job site information.

Insurance Company Name: National Union Fire Insurance Company of Pittsburg

Policy # or Self-ins. Lic. #: WC13588107 Expiration Date: 6/1/2022

Job Site Address: 36 Howe Rd City/State/Zip: Spencer MA 01562

Attach a copy of the workers' compensation policy declaration page (showing the policy number and expiration date).

Failure to secure coverage as required under MGL c. 152, §25A is a criminal violation punishable by a fine up to \$1,500.00 and/or one-year imprisonment, as well as civil penalties in the form of a STOP WORK ORDER and a fine of up to \$250.00 a day against the violator. A copy of this statement may be forwarded to the Office of Investigations of the DIA for insurance coverage verification.

I do hereby certify under the pains and penalties of perjury that the information provided above is true and correct.

Signature: [Signature] Date: 1/6/2020

Phone #: 732-780-3779

Official use only. Do not write in this area, to be completed by city or town official.

City or Town: _____ Permit/License # _____

Issuing Authority (circle one):

- 1. Board of Health 2. Building Department 3. City/Town Clerk 4. Electrical Inspector 5. Plumbing Inspector
- 6. Other _____

Contact Person: _____ Phone #: _____

LEGEND

- FD
- IP
- IB
- ▣ CB
- ▣ SB

- FOUND
- IRON PIPE
- IRON BAR
- CONCRETE BOUND
- STONE BOUND

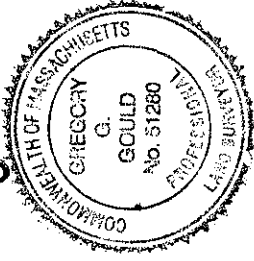
- NOTES:
- OWNER: DAVID J. SNYDER & KIM M. SHEA
36 HOWE ROAD
SPENCER, MA 01562
 - DEED: BK. 38492 PG. 300
 - LAND IS ZONED RR-RURAL RESIDENTIAL
THIS PLAN HAS BEEN PREPARED WITHOUT
THE BENEFIT OF A TITLE REPORT AND IS
SUBJECT TO ANY ENCUMBRANCES SUCH A
REPORT MAY REVEAL
 - PROPOSED SOLAR ARRAY SHOWN HEREON,
BASED ON A PLAN ENTITLED "INSTALLATION
OF NEW GROUND MOUNTED PV SOLAR
SYSTEM, 36 HOWE ROAD, SPENCER, MA
01562," PREPARED BY TRINITY SOLAR, AND
DATED NOVEMBER 12, 2021, REVISED
MARCH 02, 2022; PROPOSED LOCATION OF
SAID ARRAY FROM WOOD STAKES SET BY
OTHERS AND LOCATED BY AN
ON-THE-GROUND INSTRUMENT SURVEY.
UTILITIES SHOWN HEREON ARE BASED ON
FIELD LOCATIONS OF SURFACE VISIBLE
STRUCTURES. OTHER UTILITIES MAY EXIST.
IT SHALL BE THE RESPONSIBILITY OF THE
CONTRACTOR TO VERIFY THE LOCATION,
SIZE & ELEVATION OF ALL UTILITIES WITHIN
THE AREA OF PROPOSED WORK AND TO
CONTACT "DIG-SAFE" AT 811 AT LEAST 72
HOURS PRIOR TO ANY EXCAVATION,
DEMOLITION, OR CONSTRUCTION.

SHERMAN & FRYDRYK
Land Surveying, Engineering & Scientists
A DIVISION OF HANCOCK SURVEY ASSOCIATES, INC.
3 Converse Street, Suite 203
Palmer, MA 01069



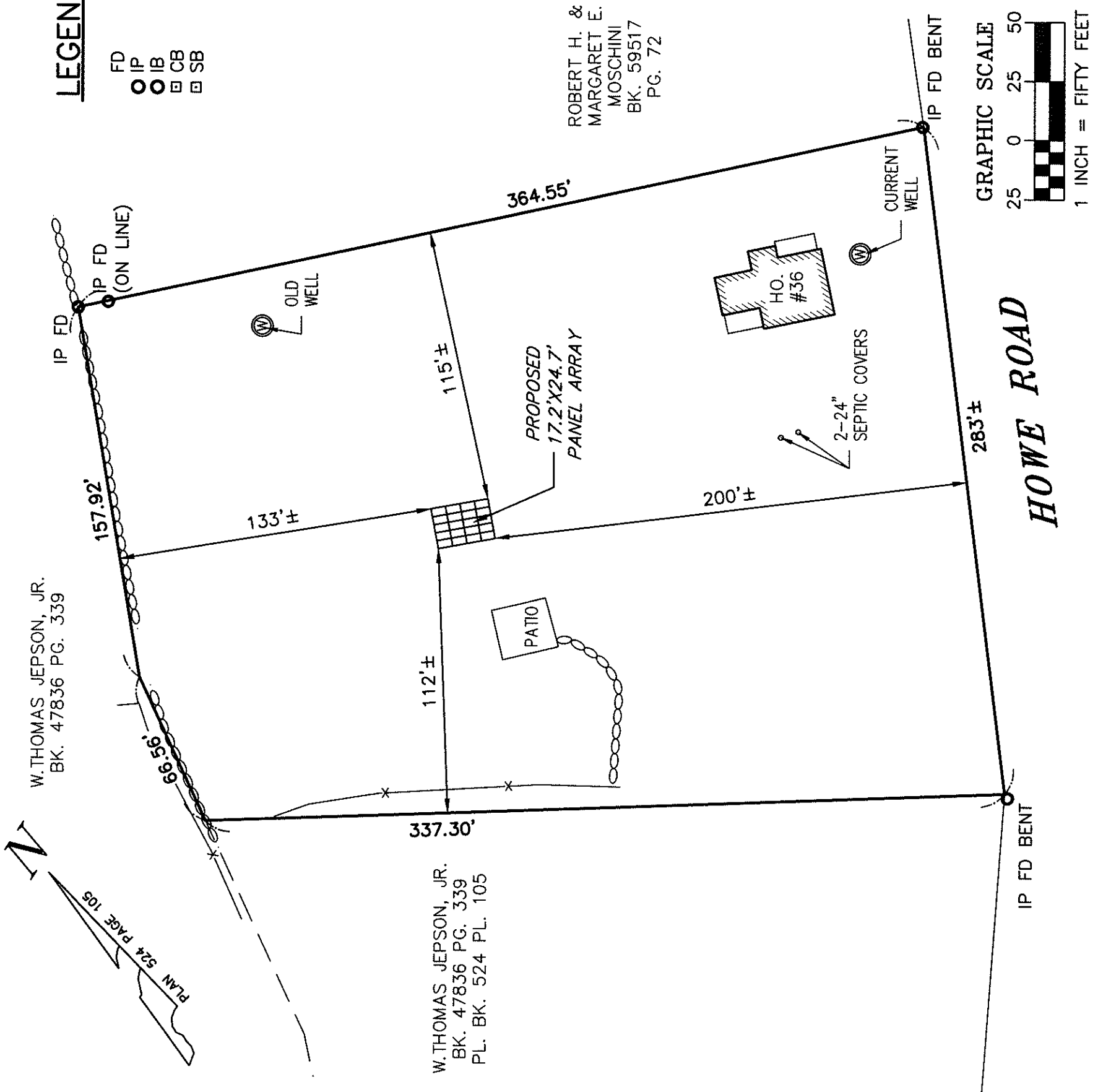
BUILDING PERMIT PLAN
DAVID J. SNYDER & KIM M. SHEA
36 HOWE ROAD
SPENCER, MA
5-8-22

DATE: 03/08/22 SCALE: 1"=50' PROJECT #: 22015
FIELD WORK: PWS DRAWN: KJM APPROVED: GGG



Gregory G. Gould

ROBERT H. &
MARGARET E.
MOSCHINI
BK. 59517
PG. 72



INSTALLATION OF NEW GROUND MOUNTED PV SOLAR SYSTEM

36 HOWE ROAD SPENCER, MA 01562

HOWE ROAD ●



VICINITY MAP
SCALE: NTS

● SITE

GENERAL NOTES

IF ISSUED DRAWING IS MARKED WITH A REVISION CHARACTER OTHER THAN "A", PLEASE BE ADVISED THAT FINAL EQUIPMENT AND/OR SYSTEM CHARACTERISTICS ARE SUBJECT TO CHANGE DUE TO AVAILABILITY OF EQUIPMENT.

GENERAL NOTES

- THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTIONS CONTAINED IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY.
- THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTION CONTAINED IN THE COMPLETE MANUAL.
- THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR READING AND UNDERSTANDING ALL DRAWINGS, COMPONENT AND INVERTER MANUALS PRIOR TO INSTALLATION. THE INSTALLATION CONTRACTOR IS ALSO REQUIRED TO HAVE ALL COMPONENT SWITCHES IN THE OFF POSITION AND FUSES REMOVED PRIOR TO THE INSTALLATION OF ALL FUSE BEARING SYSTEM COMPONENTS.
- ONCE THE PHOTOVOLTAIC MODULES ARE MOUNTED, THE INSTALLATION CONTRACTOR SHOULD HAVE A MINIMUM OF ONE ELECTRICIAN WHO HAS ATTENDED A SOLAR PHOTOVOLTAIC INSTALLATION COURSE ON SITE.
- FOR SAFETY, IT IS RECOMMENDED THAT THE INSTALLATION CREW ALWAYS HAVE A MINIMUM OF TWO PERSONS WORKING TOGETHER AND THAT EACH OF THE INSTALLATION CREW MEMBERS BE TRAINED IN FIRST AID AND CPR.
- THIS SOLAR PHOTOVOLTAIC SYSTEM IS TO BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL ELECTRICAL CODE. ANY LOCAL CODE WHICH MAY SUPERSEDE THE NEC SHALL GOVERN.
- ALL SYSTEM COMPONENTS TO BE INSTALLED WITH THIS SYSTEM ARE TO BE "UL" LISTED. ALL EQUIPMENT WILL BE NEMA 3R OUTDOOR RATED UNLESS INDICATED.

GENERAL NOTES CONTINUED

- THE DC VOLTAGE FROM THE PANELS IS ALWAYS PRESENT AT THE DC DISCONNECT ENCLOSURE AND THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THE PHOTOVOLTAIC SYSTEM ARE WARNED THAT THE SOLAR MODULES ARE ENERGIZED WHENEVER THEY ARE EXPOSED TO LIGHT.
- ALL PORTIONS OF THIS SOLAR PHOTOVOLTAIC SYSTEM SHALL BE MARKED CLEARLY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 690 & 705.
- PRIOR TO THE INSTALLATION OF THIS PHOTOVOLTAIC SYSTEM, THE INSTALLATION CONTRACTOR SHALL ATTEND A PRE-INSTALLATION MEETING FOR THE REVIEW OF THE INSTALLATION PROCEDURES, SCHEDULES, SAFETY AND COORDINATION.
- PRIOR TO THE SYSTEM START UP THE INSTALLATION CONTRACTOR SHALL ASSIST IN PERFORMING ALL INITIAL HARDWARE CHECKS AND DC WIRING CONDUCTIVITY CHECKS.
- FOR THE PROPER MAINTENANCE AND ISOLATION OF THE INVERTERS REFER TO THE ISOLATION PROCEDURES IN THE OPERATION MANUAL.
- THE LOCATION OF PROPOSED ELECTRIC AND TELEPHONE UTILITIES ARE SUBJECT TO FINAL APPROVAL OF THE APPROPRIATE UTILITY COMPANIES AND OWNERS.
- ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREIN SHALL BE IN ACCORDANCE WITH:
 - A) CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS AND REQUIREMENTS

ABBREVIATIONS CONTINUED

- JB JUNCTION BOX
- KCMIL THOUSAND CIRCULAR MILS
- KVA KILO-VOLT AMPERE
- KW KILO-WATT
- L LINE
- MCB MAIN CIRCUIT BREAKER
- MDP MAIN DISTRIBUTION PANEL
- MLO MAIN LUG ONLY
- MTD MOUNTED
- MITG MOUNTING
- N NEUTRAL
- NEC NATIONAL ELECTRICAL CODE
- NIC NOT IN CONTRACT
- NO# NUMBER
- NTS NOT TO SCALE
- OCIP OVER CURRENT PROTECTION
- P POLE
- PB PULL BOX
- PH Ø PHASE
- PVC POLY-VINYL CHLORIDE CONDUIT
- PWR POWDER
- QTY QUANTITY
- RGS RIGID GALVANIZED STEEL
- SN SOLID NEUTRAL
- JSWBD SWITCHBOARD
- TYP TYPICAL
- U.O.I. UNLESS OTHERWISE INDICATED
- WP WEATHERPROOF
- XFMR TRANSFORMER
- +72 MOUNT 72 INCHES TO BOTTOM OF ABOVE FINISHED FLOOR OR GRADE

ABBREVIATIONS

- AMP AMPERE
- AL ALUMINUM
- AF AMP. FRAME
- AFG ABOVE FINISHED FLOOR
- AWG AMERICAN WIRE GAUGE
- C CONDUIT (GENERIC TERM OF RACEWAY, PROVIDE AS SPECIFIED)
- CB COMBINER BOX
- CKT CIRCUIT
- CT CURRENT TRANSFORMER
- CU COPPER
- DC DIRECT CURRENT
- DISC DISCONNECT SWITCH
- DWG DRAWING
- EC ELECTRICAL SYSTEM INSTALLER
- EMT ELECTRICAL METALLIC TUBING
- FS FUSIBLE SWITCH
- FUSE FUSE
- GND GROUND
- GFI GROUND FAULT INTERRUPTER
- HZ FREQUENCY (CYCLES PER SECOND)

SHEET INDEX

- PV-1 COVER SHEET W/ SITE INFO & NOTES
- PV-2 LAYOUT PLAN W/ MODULE LOCATIONS
- PV-3 ELECTRICAL 3 LINE DIAGRAM
- APP APPENDIX

Rev. No. **R3** Sheet **PV - 1**



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|--------------------|--|
| Issued / Revisions | |
| R3 | PLOT PLAN REVISED 4/15/2022 |
| R2 | PLOT PLAN REVISED 3/8/2022 |
| RL | SETBACK / DIMENSION REVISED 3/2/2022 |
| P1 | ISSUED TO TOWNSHIP FOR PERMIT 11/12/2021 |
| NO. | DESCRIPTION |
| | DATE |

Project Title:
SNYDER, KIM
TRINITY ACCT #: 2021-08-614613

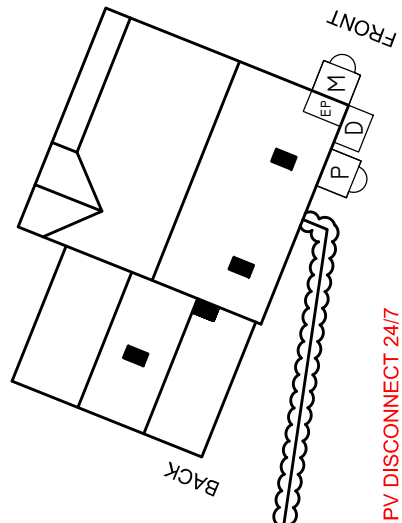
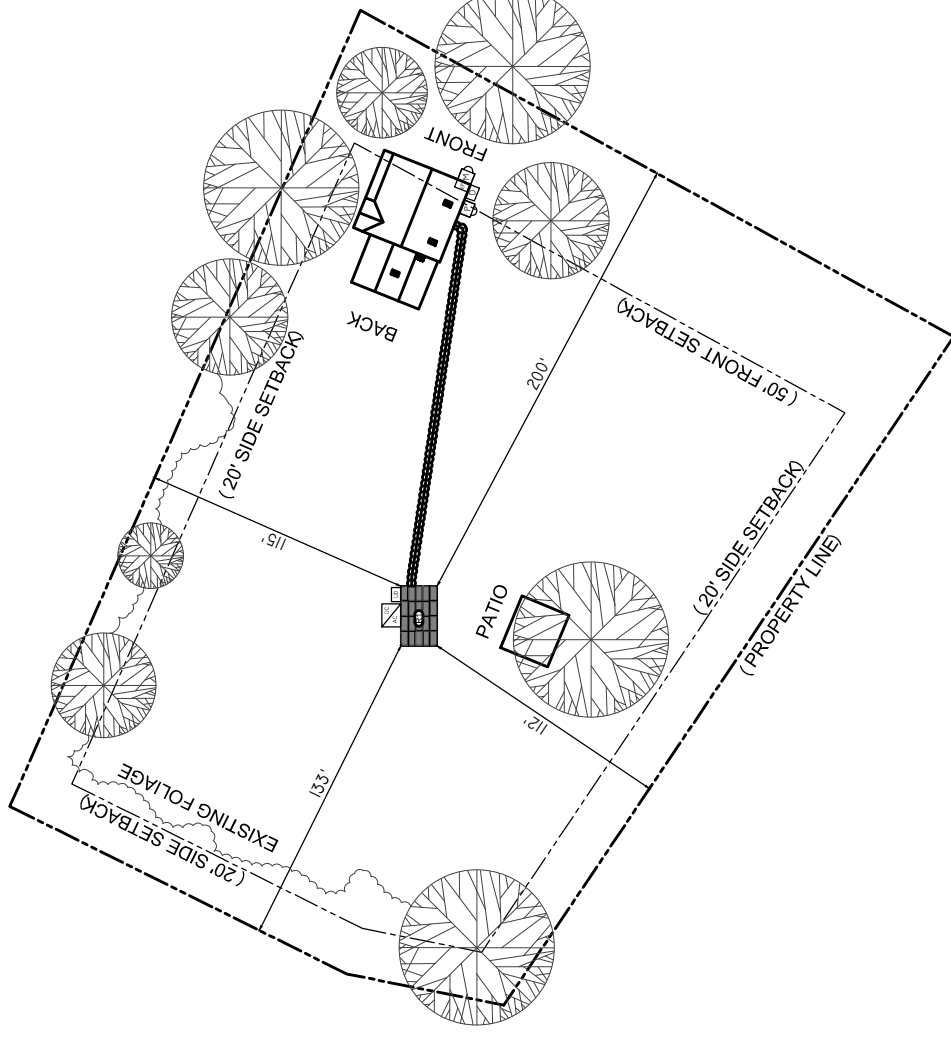
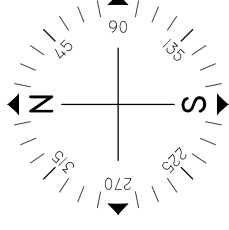
Project Address:
**36 HOWE ROAD
SPENCER, MA 01562
42.220900,-71.995457**

Drawing Title:
PROPOSED PV SOLAR SYSTEM

Drawing Information
DRAWING DATE: 11/12/2021
DRAWN BY: IG
REVISED BY: DMR

System Information:
DC SYSTEM SIZE: 8KW
AC SYSTEM SIZE: 6KW
MODULE COUNT: 20
MODULES USED: HANWHA 400
MODULE SPEC #: Q-PEAK DUO BLK.ML-G10+-400
UTILITY COMPANY: NAT'L GRID
UTILITY ACCT #: 76939-22009
UTILITY METER #: 25089405
DEAL TYPE: SUNNOVA

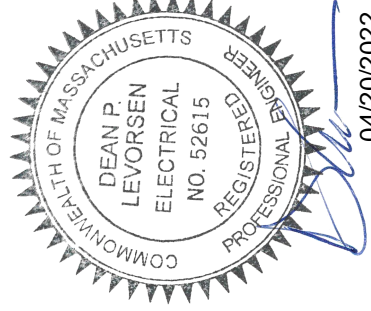
PLOT PLAN
SCALE: 1"=80'



(CONDUIT TO BE TRENCHED APPROX. 150 FEET)

VECTOR ENGINEERS
651 W. GALENA PARK BLVD. STE. 101 PHONE (801) 990-1775
DRAPER, UTAH 84020 WWW.VECTORSE.COM

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04/20/2022
VSE Project Number: U1982.1641.221

- NOTES:
- 1) ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 - 2) ARRAY BONDING TO COMPLY WITH MANUFACTURER SPECIFICATION.
 - 3) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.
 - 4) AN AC DISCONNECT SHALL BE GROUPED WITH INVERTER (S) NEC 690.13 (E).
 - 5) ALL OUTDOOR EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA 3R RATING.
 - 6) ROOFTOP SOLAR INSTALLATION ONLY PV ARRAY SHALL NOT EXTEND BEYOND THE EXISTING ROOF EDGE.

| ARRAY SCHEDULE | | SYMBOL LEGEND | | PLUMBING SCHEDULE | | EQUIPMENT SCHEDULE | |
|----------------|--|---------------|---|-------------------|--|--------------------|---|
| (R) | INDICATES ROOF DESIGNATION. REFER TO ARRAY SCHEDULE FOR MORE INFORMATION | (UD) | INDICATES NEW UNFUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE) | (SP) | INDICATES NEW PV ONLY SUBPANEL TO BE INSTALLED | QTY | SPEC # |
| (M) | INDICATES EXISTING METER LOCATION | (DC) | INDICATES NEW PV SOLAR MODULE. RED MODULES INDICATE PANELS THAT USE MICRO INVERTERS. REFER TO EQUIPMENT SCHEDULE FOR SPECS. | (DC) | INDICATES NEW DC DISCONNECT | 20 | HANWHA 400 (Q-PEAK DUO BLK ML-G10+ 400) |
| (EP) | INDICATES EXISTING ELECTRICAL PANEL LOCATION: INSIDE | (P) | INDICATES NEW PRODUCTION METER TO BE INSTALLED OUTSIDE. | (SD) | INDICATES EXISTING SERVICE DISCONNECT | 1 | SE6000H-US05HBNCA |
| (D) | INDICATES NEW FUSED PV DISCONNECT TO BE INSTALLED OUTSIDE (UTILITY ACCESSIBLE) | (AC) | INDICATES NEW INVERTER TO BE INSTALLED OUTSIDE. REFER TO EQUIPMENT SCHEDULE FOR SPECS. | (TS) | INDICATES EXISTING TRANSFER SWITCH | | |

ROOF 1
MODULES: 20
RCH: 30
ORIENTATION: 180

Issued / Revisions

| NO. | DESCRIPTION | DATE |
|-----|-------------------------------|------------|
| R3 | PILOT PLAN REVISED | 4/15/2022 |
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MODULE SPEC #: Q-PEAK DUO BLK ML-G10+ 400
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UTILITY ACCT #: 76939-22009
UTILITY METER #: 25089405
DEAL TYPE: SUNNOVA

Rev. No. **R3** Sheet **PV - 2**



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ARRAY CIRCUIT WIRING NOTES
1.) LICENSED ELECTRICIAN ASSUMES ALL RESPONSIBILITY FOR DETERMINING ON-SITE CONDITIONS AND EXECUTING INSTALLATION IN ACCORDANCE WITH NEC 2020

2.) LOWEST EXPECTED AMBIENT TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. LOWEST EXPECTED AMBIENT TEMP = -16°C

3.) HIGHEST CONTINUOUS AMBIENT TEMPERATURE BASED ON ASHRAE HIGHEST MONTH 2% DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. HIGHEST CONTINUOUS TEMP = 33°C

4.) 2005 ASHRAE FUNDAMENTALS 2% DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE UNITED STATES (PALM SPRINGS, CA IS 44.1°C). FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN A ROOF-MOUNTED SUNLIT CONDUIT AT LEAST 0.5" ABOVE ROOF AND USING THE OUTDOOR DESIGN TEMPERATURE OF 47°C OR LESS (ALL OF UNITED STATES)

5.) PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION THAT CONTROLS SPECIFIC CONDUCTORS IN ACCORDANCE WITH NEC 690.12(A) THROUGH (D)

6.) PHOTOVOLTAIC POWER SYSTEMS SHALL BE PERMITTED TO OPERATE WITH UNGROUNDED PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUIT AS PER **NEC 690.41 (A)(4)**

7.) UNGROUNDED DC CIRCUIT CONDUCTORS SHALL BE IDENTIFIED WITH THE FOLLOWING OUTER FINISH:
 POSITIVE CONDUCTORS = RED
 NEGATIVE CONDUCTORS = BLACK
NEC 210.5(C)(2)

8.) ARRAY AND SUB-ARRAY CONDUCTORS SHALL BE #10 PV WIRE TYPE RHW-2 OR EQUIVALENT AND SHALL BE PROTECTED BY CONDUIT WHERE EXPOSED TO DIRECT SUNLIGHT. SUB-ARRAY CONDUIT LONGER THAN 24" SHALL CONTAIN ≤ 20 CURRENT CARRYING CONDUCTORS AND WHERE EXPOSED TO DIRECT SUNLIGHT SHALL CONTAIN ≤ 9 CURRENT CARRYING CONDUCTORS.

9.) ALL WIRE LENGTHS SHALL BE LESS THAN 100' UNLESS OTHERWISE NOTED

10.) FLEXIBLE CONDUIT SHALL NOT BE INSTALLED ON ROOFTOP AND SHALL BE LIMITED TO 12" IF USED OUTDOORS

11.) OVERCURRENT PROTECTION FOR CONDUCTORS CONNECTED TO THE SUPPLY SIDE OF A SERVICE SHALL BE LOCATED WITHIN 10' OF THE POINT OF CONNECTION **NEC 690.9(A)(3)(2)**

12.) WHERE TWO SOURCES FEED A BUSBAR, ONE A UTILITY AND THE OTHER AN INVERTER, PV BACKFEED BREAKER(S) SHALL BE LOCATED OPPOSITE FROM UTILITY **NEC 705.12(B)(3)(2)**

13.) ALL SOLAR SYSTEM LOAD CENTERS TO CONTAIN ONLY GENERATION CIRCUITS AND NO UNUSED POSITIONS OR LOADS

14.) ALL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE A **NEMA 3R** RATING

CALCULATIONS FOR CURRENT CARRYING CONDUCTORS
 REQUIRED CONDUCTOR AMPACITY PER STRING
[NEC 690.8(B)(1)]: (15.00 * 1.25)1 = 18.75A

AWG #10, DERATED AMPACITY
 AMBIENT TEMP: 33°C, TEMP-DERATING FACTOR: .96
 RACEWAY DERATING = 4 CCC: 0.80
 (40 * .96)0.80 = 30.72A

30.72A > 18.75A, THEREFORE WIRE SIZE IS VALID

TOTAL AC REQUIRED CONDUCTOR AMPACITY
 25.00A * 1.25 = 31.25A

AWG #8, DERATED AMPACITY
 AMBIENT TEMP: 30°C, TEMP-DERATING: 1.0
 RACEWAY DERATING: 3 CCC: N/A
 55A * 1.0 = 55A

55A > 31.25A, THEREFORE AC WIRE SIZE IS VALID

CALCULATION FOR PV OVERCURRENT PROTECTION
 TOTAL INVERTER CURRENT: 25.00A
 25.00A * 1.25 = 31.25A
 --> 40A OVERCURRENT PROTECTION IS VALID

SOLAR MODULES GROUND MOUNTED ON 1 ARRAY
 20 - 400W MODULES W/ 1 SOLAR EDGE P401 PER MODULE
 15 ADC MAX PER STRING

2 STRINGS OF 10 MODULES IN SERIES - 380 Vmax

*2 STRINGS TO BE TERMINATED IN PARALLEL INSIDE INVERTER 1

8"x8" JUNCTION BOX

F

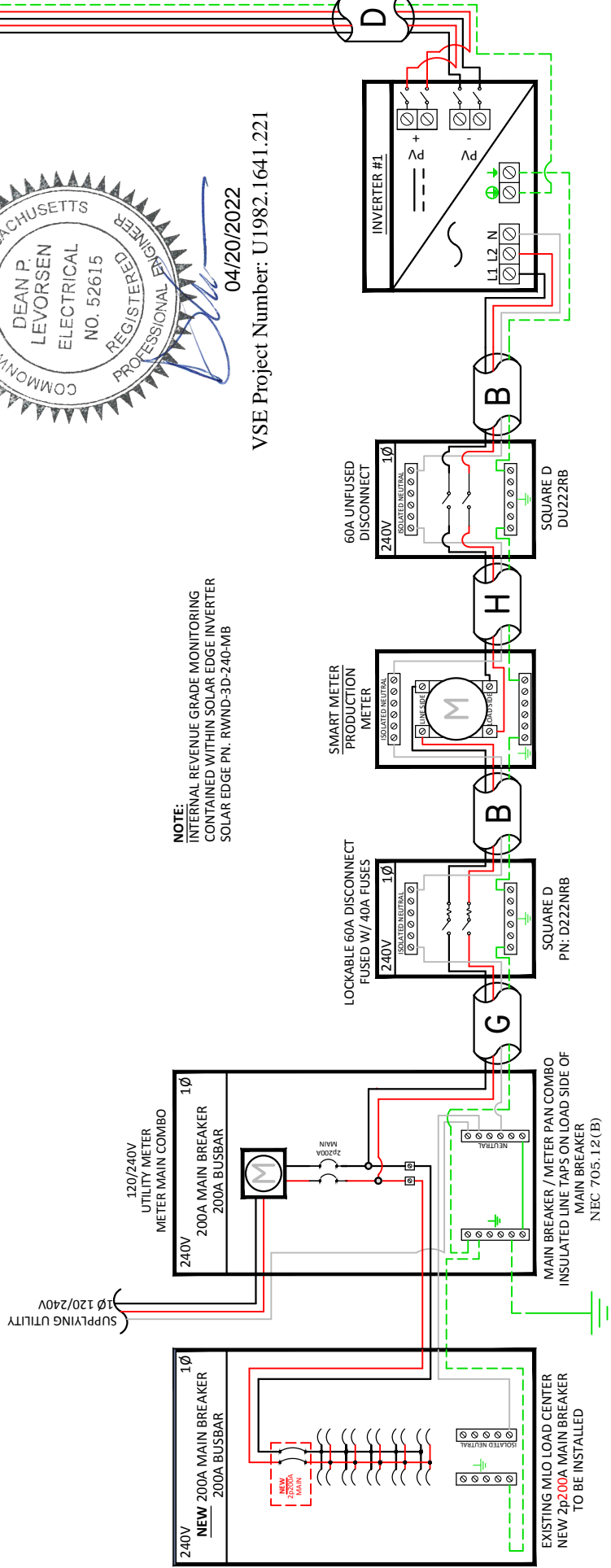
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 DRAPER, UTAH 84020 WWW.VECTORSE.COM

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04/20/2022
 VSE Project Number: U1982.1641.221

NOTE:
 INTERNAL REVENUE GRADE MONITORING CONTAINED WITHIN SOLAR EDGE INVERTER SOLAR EDGE PN: RWND-3D-240-MB



| PV MODULE SPECIFICATIONS | |
|---|-------|
| HANWHA 400 (Q-PEAK DUO BLK ML-G10+ 400) | |
| I _{mp} | 10.77 |
| V _{mp} | 37.13 |
| V _{oc} | 45.3 |
| I _{sc} | 11.14 |

| INVERTER #1 - SE6000H-US05HBC4 | |
|--------------------------------|--------------------|
| DC | AC |
| I _{mp} | P _{out} |
| V _{mp} | I _{max} |
| V _{oc} | OCP _{min} |
| I _{sc} | V _{nom} |
| | 240 |

| | | | |
|---|--|---|--|
| A | #6 THWN-2 GEC TO EXISTING GROUND ROD | G | 3/4" CONDUIT W/ 2-#8 THWN-2, 1-#10 THWN-2, 1-#8 THWN-2 GROUND |
| B | 3/4" CONDUIT W/ 2-#8 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND | H | 1" PVC W/ 2-#4 THWN-2, 1-#4 THWN-2, 1-#4 THWN-2 GROUND (TRENCHED APPROX. 150') |
| C | 3/4" CONDUIT W/ 4-#10 THWN-2, 1-#10 THWN-2 GROUND | | |
| D | 3/4" CONDUIT W/ 4-#10 THWN-2, 1-#10 THWN-2 GROUND | | |
| E | 3/4" CONDUIT W/ 2-#8 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND | | |
| F | #10 PV WIRE (FREE AIR) W/ #6 BARE COPPER BOND TO ARRAY | | |

NOTE: CONDUIT TYPE SHALL BE CHOSEN BY THE INSTALLATION CONTRACTOR TO MEET OR EXCEED NEC AND LOCAL AHJD REQUIREMENTS

| Issued / Revisions | | |
|--------------------|--|------|
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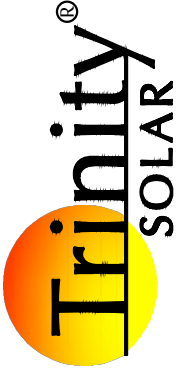
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 42.220900,-71.995457

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PROPOSED PV SOLAR SYSTEM

Drawing Information
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 DRAWN BY: IG
 REVISED BY: DMR

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 AC SYSTEM SIZE: 6KW
 MODULE COUNT: 20
 MODULES USED: HANWHA 400
 MODULE SPEC #: Q-PEAK DUO BLK ML-G10+ 400
 UTILITY COMPANY: NAT'L GRID
 UTILITY ACCT #: 76939-22009
 UTILITY METER #: 25089405
 DEAL TYPE: SUNNOVA

Rev. No. **R3** Sheet **PV - 3**



Town of Spencer Official Zoning Map

Adopted November 16, 2006



Zoning Districts

- RR - Rural Residential
- SR - Suburban Residential
- LR - Lake Residential
- VR - Village Residential
- TC - Town Center Mixed Use
- C - Commercial
- I - Industrial

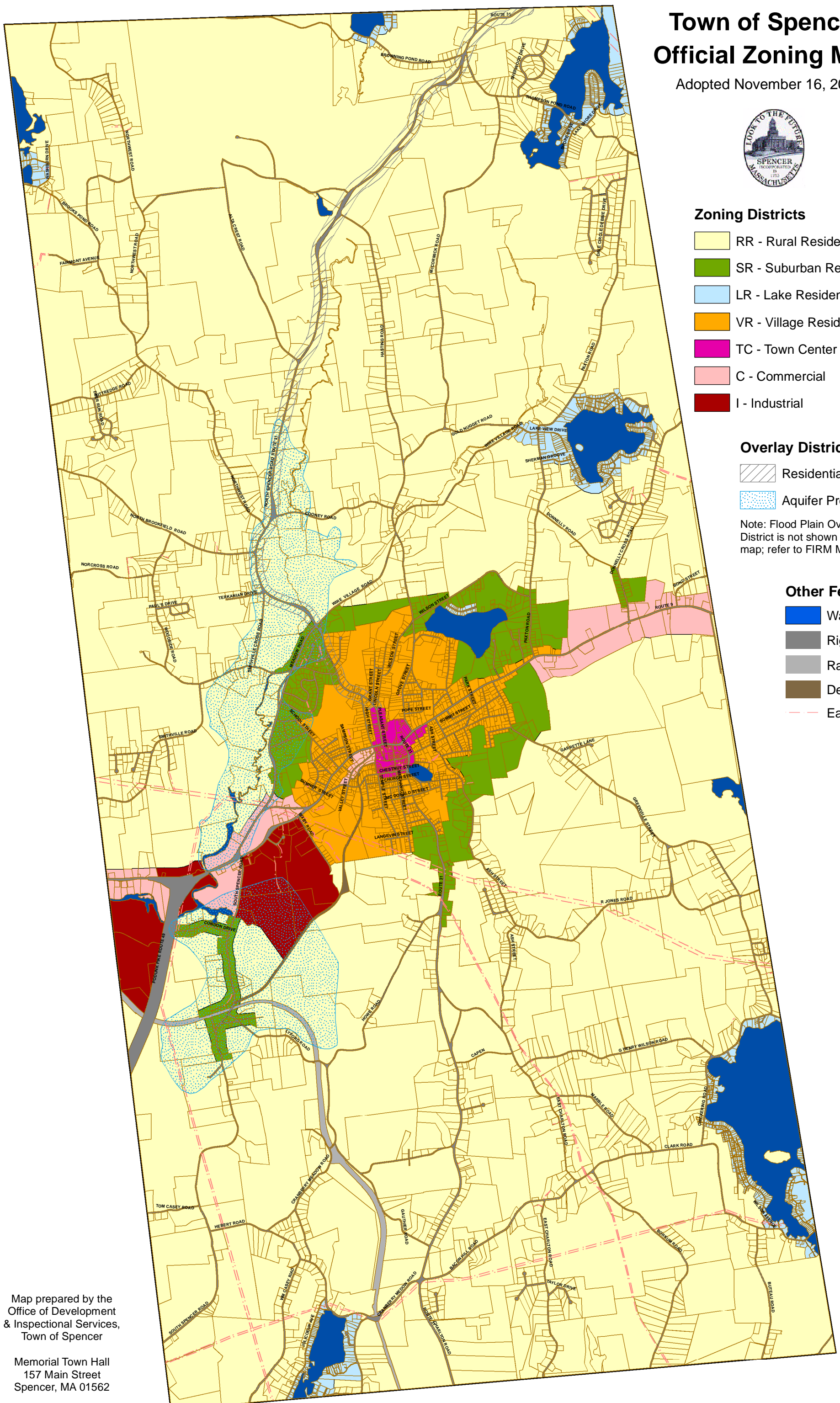
Overlay Districts

- Residential Business
- Aquifer Protection

Note: Flood Plain Overlay District is not shown on this map; refer to FIRM Maps.

Other Features

- Water
- Right-of-Way
- Railroad
- Depot Trail
- Easements

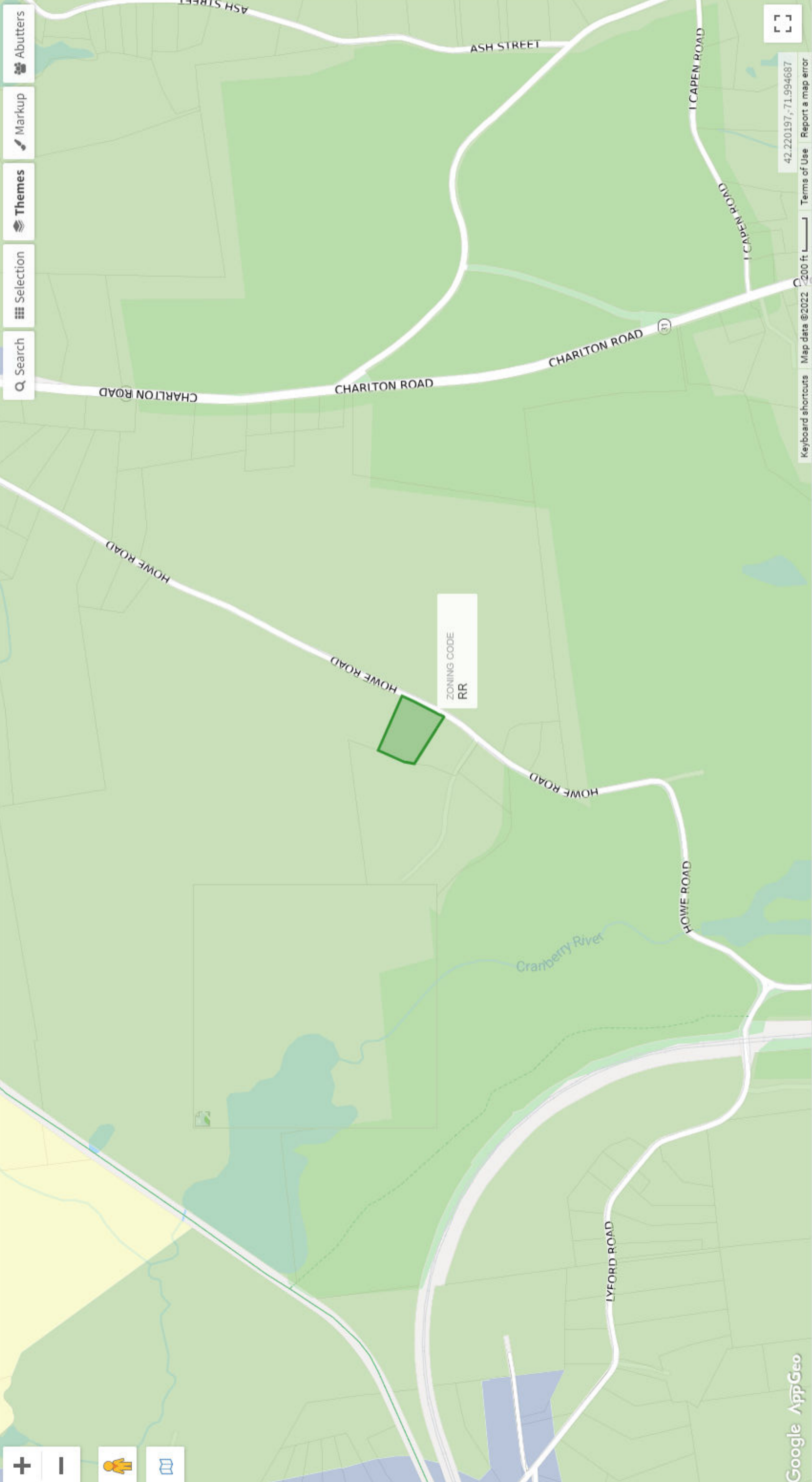


Map prepared by the
Office of Development
& Inspectional Services,
Town of Spencer

Memorial Town Hall
157 Main Street
Spencer, MA 01562

508-885-7500 ext. 180

Note: Zoning boundaries and easements based on parcel data from Applied Geographics, Inc, August 2006.



Themes

Base Theme

Basemap

Legend/Attribution

- Aerial Photo, 2019
- USGS Color Aerial Photo, 2014
- Aerial Photo, 2011-2012
- Aerial Photo, 2009
- Zoning

Transparency



- C - Commercial
- I - Industrial
- LR - Lake Residential
- RR - Rural Residential
- SR - Suburban Residential
- TC - Town Center Mixed Use
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- Land Use 2016
- Land Use
- FEMA Flood Zones
- FEMA FIRM Panels (Shows Effective Dates)
- Land Conservation
- Natural Resource Protection
- Water Resource Protection
- Wetlands
- Stormwater System