Historic District Commission

AGENDA

Wednesday, July 16, 2025 4:30 PM City Hall, 2nd Floor Council Chambers

1. **Call to Order and Roll Call**
2. **Minutes:**
   a) May 21, 2025 Regular Meeting
3. **Public Hearing:**
   a) **COA-2024-04, Modification #1 – 33 Center St – Rooftop Solar Installation -** Applicant Simon Gray of Green Energy Options, on behalf of owner William Brown, proposes to install a 16-panel rooftop solar energy system on the existing ~1,156-sf building located at 33 Center St (TMP #568-015-000). The parcel is 0.10-ac in size and is ranked as a Contributing Resource in the Downtown Transition District.
4. **Discussion:**
   a) Outreach & Student Engagement Project
   b) Annual Report Letter to City Council
5. **Staff Updates**
6. **New Business**
7. **Upcoming Dates of Interest:**
   a) Next HDC Meeting: August 20, 2025 – 4:30 pm
   b) HDC Site Visit: August 20, 2025 – 3:30 pm (To be confirmed)
8. **Adjourn**

City of Keene
New Hampshire

HISTORIC DISTRICT COMMISSION MEETING MINUTES

Wednesday, May 21, 2025 **4:30 PM** **Council Chambers, City Hall**

Members Present:
Sofia Cunha-Vasconcelos, Chair
Hope Benik, Vice Chair
Anthony Ferrantello
Louise Zerba

Staff Present:
Evan Clements, Planner

Members Not Present:
Councilor Catherine Workman
Russ Fleming
David Bergeron, Alternate
Peter Poanessa, Alternate

1) Call to Order and Roll Call

Chair Cunha-Vasconcelos called the meeting to order at 4:35 PM. Roll call was conducted.

2) Minutes: April 16, 2025 Regular Meeting

Ms. Zerba made a motion to approve the meeting minutes of April 16, 2025. Mr. Ferrantello seconded the motion, which passed by unanimous vote.

3) Discussion – Project and Goalsetting

Chair Cunha-Vasconcelos stated that the project and goalsetting conversation is regarding the outreach. She asked Mr. Clements to refresh their memories.

Mr. Clements stated that they had talked about another project for the HRC to do for the year. He continued that Mr. Ferrantello had a great idea to engage with Keene State College (KSC). Before the current Land Development Code (LDC) was adopted, the old regulations had a lot of interesting and useful background rationale for why the regulations are the way they are. In the spirit of brevity, much of that was stripped out of the LDC. The HDC had talked about outreach

and how to use that information that is no longer in the LDC but still could be used. Today, they could hear more about Mr. Ferrantello's idea, come up with more ideas, and plan what the project looks like, how to do it, and what success looks like. The HDC could meet more frequently to continue the conversations, and meeting more frequently is a good habit to get into for when they do have applications.

Chair Cunha-Vasconcelos asked to hear an update from Mr. Ferrantello. Mr. Ferrantello stated that he emailed the chair of KSC's Architecture Department, who is in Spain. He asked the chair if he would be interested in a proposal, which is to get some students involved in identifying and creating some colorful, engaging posters or flyers to generate interest among Keene residents, so Keene residents engage and participate in what the HDC does. It is about identifying and celebrating the historic fabric in Keene. It could be a course, an extracurricular activity, a paper or thesis, or something else. He is waiting to hear back from the chair.

Mr. Ferrantello continued that it would be good for the HDC to peruse that existing background information that Mr. Clements just spoke about, to see if that would be helpful to the Architecture chair and his students in creating a flyer or document, PDF, film, or some form of media to show how Keene has all this (history) people can be proud of. It could be used as fodder not to tear anything down. He hopes the Architecture chair seriously considers this.

Chair Cunha-Vasconcelos stated that while they wait to hear from the chair, it strikes her that there are a few different steps to this process. She continued that one is reviewing the old code and deciding what information the HDC wants to share with the public. The other is deciding which avenues or which media they would use to put it in the public eye. Then, actually creating the content for whatever media that is. It is a multi-step process. Social media is the low-hanging fruit, although it would have to be bite-sized content. The City has a podcast, which is great, and reels on Instagram.

Ms. Benik asked if the City would be open to posting something for the HDC, if the HDC got the content together. Mr. Clements replied yes, Rebecca Landry, Asah Cramer, and the Communications Team are always looking for new content. The more the HDC does before handing it off to the Communications Team, the easier it is for them. There is some branding control involved with generated materials, but if, say, KSC generated something, the City could run it through the City branding and use it. It is just a matter of figuring out the details on that. So yes, there are resources available to the HDC. The Heritage Commission (HC), too, is doing a project, videography, to capture what Keene is like now for future generations, and potentially a retrospective, too. The HC has had many questions in regards to their project, and the answers will potentially be relevant to the HDC's project as well. They could potentially be working symbiotically.

Mr. Ferrantello stated that he likes what Chair Cunha-Vasconcelos said about the multifaceted approach and the different steps. He likes what staff did for the Master Plan Update, with public

meetings at the library, with posters and presentations. He continued that maybe students could give a similar presentation. Mr. Clements replied that everything is on the table.

Chair Cunha-Vasconcelos stated that the first step is reviewing the old code. She asked if it is available online. Mr. Clements replied not anymore, but he sent it to the HDC members a couple of months ago and will send it again, as a Word document.

Chair Cunha-Vasconcelos stated that the HDC's homework, then, is to look at the relevant parts of the old code – the background reasonings and rationales. She suggests they highlight them, consider which ones are more important, and maybe rank them in order, in terms of what they want to share with the public first. They will meet next month and have this on the agenda. Mr. Clements replied that it sounds great, and they will have an application at next month's meeting, too. He continued that he will not be here, as he will be traveling. Another staff member will be here in his place, and he will be involved as much to the lead up of the meeting as possible.

Mr. Clements stated that another general topic to consider when talking about promoting the Historic District is the benefits of the Historic District and the National Historic Trust, which has a lab that does a lot of study on historic preservation. There is a lot of good information there about the benefits of historic districts, not just culturally speaking, but also for the property owners themselves. Sometimes property owners are frustrated having to deal with the extra level of review with the HDC, and it is worth highlighting the benefits that the preservation and Historic District provide.

Mr. Ferrantello replied that that is a great idea. He spoke about how he can envision a visually appealing, artistic poster to attract people's attention. Mr. Clements replied that maybe Art students at KSC could be involved as well. Discussion continued with more ideas for multidisciplinary collaborations.

Chair Cunha-Vasconcelos stated that there are lots of exciting ideas and possibilities. She continued that they have their homework and will continue this discussion at the next meeting.

4) Staff Updates

A) Report to City Council

Mr. Clements stated that this is getting closer – the City Council wanted reports from the boards, commissions, and committees in July. He continued that he will send Chair Cunha-Vasconcelos some statistics on what the HDC has done in the past year and briefly talk about the HDC's goals for the future outside of just being a regulatory body. Chair Cunha-Vasconcelos asked if it falls to her to generate that report. Mr. Clements replied that it is up to the HDC, but generally, it is envisioned that the chair of each board, commission, and committee would be the one to write a letter to the Council or attend a meeting and give a verbal presentation. Chair Cunha-Vasconcelos replied that she does not want to give something to the Council without the HDC seeing it first, so this month, she will write something for the HDC to review at the June meeting.

She will get it to Mr. Clements or whoever will be running the June HDC meeting, to include in the agenda packet.

B) Master Plan

Mr. Clements stated that June 3 is the reveal of the Master Plan draft plan, at the Future Summit. He continued that it is going to be a great, interactive event, 5:00 to 7:00 PM at Heberton Hall. Childcare will be available, provided by the Cheshire Children's Museum, so people can spread the word to those who have small children and typically are not able to attend events like this. People can email the Community Development Department to let them know they are bringing children. There will be catered food at the event, too.

Mr. Clements continued that after the June reveal, the steering committee will keep going, and probably do some more tweaks on the plan. The City Council will have a public hearing before they vote to adopt the Master Plan. The Planning Board, too, recommends adoption. Thus, this is not the end of the process, but it is sort of the big wrap up with the consultants, and the reveal. Once adopted, the Master Plan will be the live document, with goals with six strategic pillars related to the community, like thriving economy, vibrant neighborhoods, the environment, and transportation. Each pillar has several goals and action items for achieving them. Part of the Future Summit will be getting the public's input on, say, their top priority for each pillar.

5) New Business

Chair Cunha-Vasconcelos asked if there was any new business. (No.)

6) Upcoming Dates of Interest:

A) Next HDC Meeting: June 18, 2025b – 4:30 PM

B) HDC Site Visit: June 18, 2025 – 3:30 PM (to be confirmed)

Chair Cunha-Vasconcelos asked if the HDC will have a site visit next month. Mr. Clements replied if the HDC wants to. He continued that the applicant is 33 Center St. again, looking to install solar on the rooftop. Brief discussion ensued.

7) Adjournment

There being no further business, Chair Cunha-Vasconcelos adjourned the meeting at 4:57 PM.

Respectfully submitted by,
Britta Reida, Minute Taker

Reviewed and edited by,
Evan J. Clements, AICP
Planner

COA-2024-04, Mod. 1 – 33 Center Street – Rooftop Solar Energy System

Request:
Applicant Simon Gray of Green Energy Options, on behalf of owner William Brown, proposes to install a 16 panel rooftop solar energy system to the existing ~1,156-sf building located at 33 Center St (TMP #568-015-000). The parcel is 0.10-ac in size and is ranked as a Contributing Resource in the Downtown Transition District.

Background:

The residence at 33 Center Street was constructed around 1840 on land that covered an area west of Central Square, south of West Street to Court Street, and north of the Square to Vernon and Mechanic Streets. An eight-acre parcel was subdivided and purchased by Abijah Wilder who sold lots to Charles Kingsbury and Timothy Colony. The property appears on the map of Keene in 1853 under the ownership of "A. Wilder" with the brick home constructed.

The Leahy family owned the house from 1886 to 1954. The Murphy family then purchased the home and continued to own the property until it was sold in 1989. The property was then used as a rental for Keene State College students.

This application proposes to install a 16 panel rooftop solar energy system on to the south facing, asphalt shingle, roof surfaces. The project will include panels on the second story main roof and the third story dormer.

Fig 1: Historic Photo of 33 Center Street

Per Section 22-3 of the Land Development Code, this work is classified as a "Major Project" for review by the HDC.

Completeness:
The applicant has requested an exemption from supplying mortar, brick, or other material samples. After reviewing the exemption request, staff has made the determination that the requested exemption would have no bearing on the merits of the application and recommend that the application be accepted as complete.

Application Analysis:
Included below is an analysis of the relevant standards of the HDC Regulations.

22.5 Streetscape & Site Design Standards - 22.5.5 Renewable Energy Systems:

A. *Renewable energy systems shall be installed in a location and manner on the building or lot that is least visible and obtrusive, and in such a way that causes the least impact to the historic integrity and character of the historic building, structure, site or district while maintaining efficient operation of the system.*

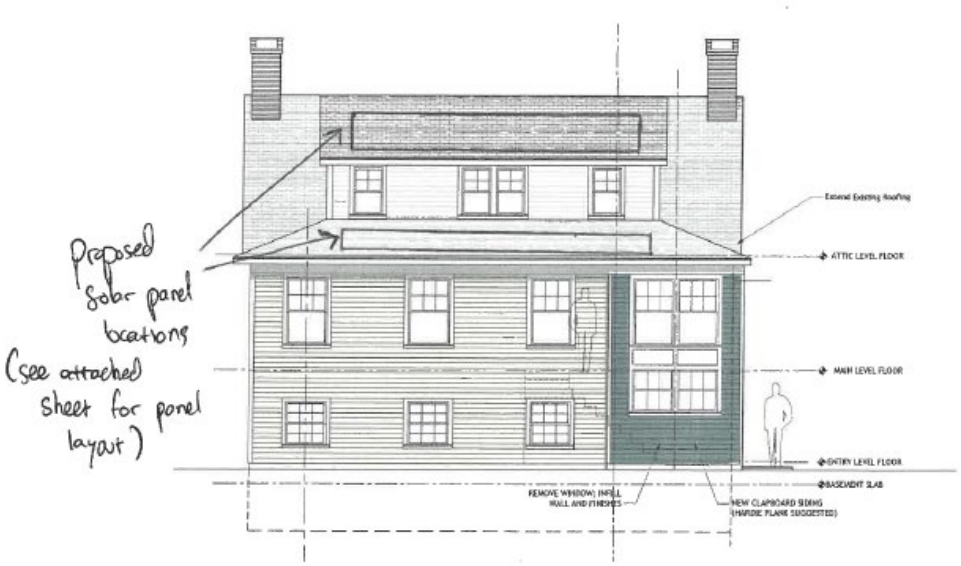

Fig 2: Southern elevation of 33 Center St.

The applicant states in their narrative that the proposal is the least obtrusive by utilizing dark-colored panel cells that are installed flush with the roof to blend in with the dark colored asphalt roofing shingles. Supplementary components and supply lines will also be hidden. It appears that this standard has been met.

B. *The order of preference for the location of renewable energy systems is listed below in order of most to least preferential location. An applicant is required to prove the most preferential priority locations are not feasible in order for the Historic District Commission, or its designee, to approve system installations on more significant parts of the site.*
    1. *The rear or side of the property not facing a public right-of-way.*
    2. *On accessory buildings or structures (e.g. sheds, garages, barns, etc.) in a location that is least visible from the public right-of-way.*
    3. *On newer additions to the principal structure in a location that is least visible from the public right-of-way.*
    4. *On the flat roof of the principal structure, set back so as to be in the least visible location.*

5. *On secondary façades or roofs (i.e. not facing the public right-of-way) of the principal structure.*
6. *On facades or roofs facing the public right-of-way.*

The applicant states in their narrative that the proposed southern facing location of the panels is the only location that will allow for efficient operation of the system. The alternative would be the north face of the roof which is not viable for solar energy production. The applicant notes that the proposed location for the panels is on a shallow pitch roof that would not be visible to pedestrians and is located on a newer addition and dormer that expanded the original building. The property does not contain any outbuildings and is too small to allow for a ground mount system. The Board will need to determine if this standard has been met.

C. *Renewable energy systems shall be installed in such a manner that they can be removed and not damage the historic building, structure, or site with which they are associated.*

The applicant states in their narrative that the project will utilize roof-attachments that are removable and evaluated by a structural engineer as not damaging to the underlying structure. It appears that this standard has been met.

D. *In order to minimize visual impacts, colors of equipment and assemblies associated with renewable energy systems shall either be muted or shall match nearby materials and colors, and solar panels shall have antireflective coating.*

The applicant states in their narrative that the proposed panel is a muted color that matches the roof shingle materials. The panels will utilize a non-reflective coating. This standard has been met.

E. *Roof-mounted solar photovoltaic systems on pitched roofs shall be on the same plane as the roof and positioned so as to be in the least visible location.*

The applicant states in their narrative that the proposed panels will be installed on the same plane as the roof and will be in the least visible location that is feasible. It appears that this standard has been met.

F. *Solar array grids should be regular in shape and jointed. Multi-roof solutions should be avoided.*

The applicant states in their narrative that the panels will be installed in a regular shape with straight columns and rows. The proposed layout considers existing sky lights on the roof. The Board will need to determine if this standard has been met.

G. *All supplementary equipment and supply lines associated with renewable energy systems shall be placed in inconspicuous locations and/or concealed from view with architectural elements (e.g. downspouts) or other screening.*

The applicant states in their narrative that the supply lines for the system will enter the building through a roof penetration that is concealed under one of the panels. The inverter and electrical service panel will be installed in the basement. The emergency shutoff switch will be installed on the west façade of the building adjacent to the existing electrical meter. It appears that this standard has been met.

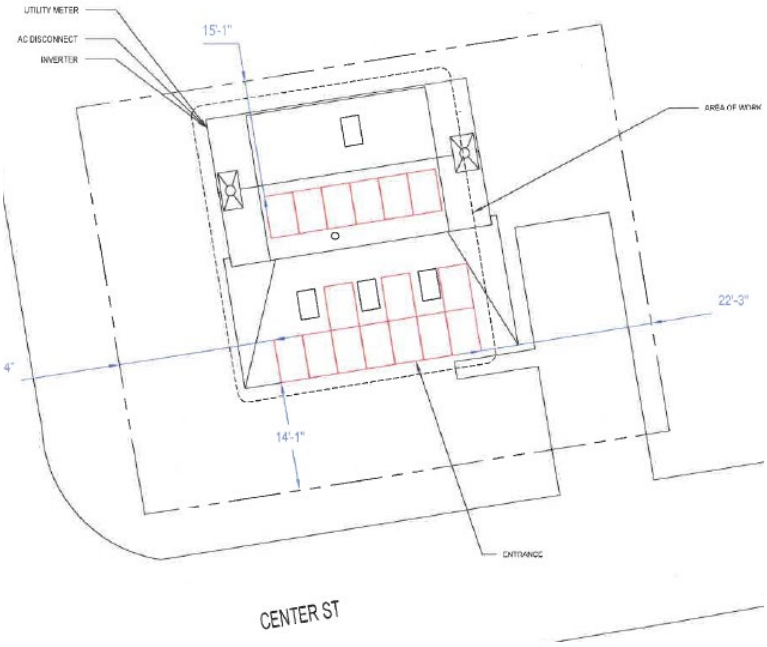

Fig 3: Panel Layout

Recommendation:
If the Board is inclined to approve this request, the following motion is recommended:

"Approve COA-2024-04, Mod. 1 to allow for the installation of a 16 panel rooftop solar energy system on the property located at 33 Center St., as presented in the plan set titled "New PV System: 6.960 kW, Brown Residence" prepared by Green Energy Options, received May 14, 2025, at a scale of 3/23" = 1' and in the application and supporting materials received May 14, 2025 with no conditions."

City of Keene, NH

Historic District Commission (HDC) Major Project Application

If you have questions about how to complete this form, please call: (603) 352-5440 or email: communitydevelopment@keenenh.gov

SECTION 1: PROJECT INFORMATION

PROJECT NAME: 33 Center Street / Brown

PROJECT ADDRESS(ES): 33 Center Street, Keene, NH 03431

SECTION 2: CONTACT INFORMATION

PROPERTY OWNER	APPLICANT
NAME/COMPANY: William L. Brown	**NAME/COMPANY:** Simon Gray / Green Energy Options
MAILING ADDRESS: 33 Center Street, Keene	**MAILING ADDRESS:** 37 Roxbury Street, Keene
PHONE: 240-910-0389	**PHONE:** 603-358-3444
EMAIL: wmlbrown@earthlink.net	**EMAIL:** Simon@greenenergyoptions.com
SIGNATURE:	**SIGNATURE:**
PRINTED NAME:	**PRINTED NAME:** Simon Gray

AUTHORIZED AGENT (if different than Owner/Applicant)	FOR OFFICE USE ONLY:
NAME/COMPANY:	**TAX MAP PARCEL #(s):** 568-015-000-____-____
MAILING ADDRESS:	____-____-____-____-____
PHONE:	**PARCEL SIZE:** 0.1 ac
EMAIL:	**ZONING DISTRICT:** Downtown Transition
SIGNATURE:	**RESOURCE RANKING:** Contributing
PRINTED NAME:	**PROJECT #:** COA-2024-04, Mod. #1.

DATE STAMP:

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SECTION 3: APPLICATION SUBMISSION REQUIREMENTS

A COMPLETE APPLICATION MUST INCLUDE THE FOLLOWING ITEMS AND MUST BE SUBMITTED BY ONE OF THE OPTIONS BELOW:

- **Email:** communitydevelopment@keenenh.gov, with "Historic District Commission" in the subject line
- **Mail / Hand Deliver:** Community Development (4th Floor), Keene City Hall, 3 Washington St, Keene, NH 03431

The submittal requirements for Historic District Commission applications are outlined further in **Article 22** and **Article 26.15** of the Land Development Code (LDC). You may request an exemption from providing any of the items below, except the application fee and narrative. The Community Development Director may grant an exemption, if it is determined that the scope of the project does not warrant the submittal.

Note: Additional information may be requested by the respective decision-making authority during the review process.

GENERAL SUBMITTAL REQUIREMENTS

CERTIFIED NOTICE LIST (See **Attachment A** for more information.)

2 SETS OF MAILING LABELS (See **Attachment A** for more information.)

PROJECT NARRATIVE (See **Section 1 of Attachment B** for more information.)

FEES: Fill in the information below to calculate the total fee.

☐ $50 base fee
☐ $62 legal ad fee
☑ 5.54 current USPS certificate of mailing rate x 6 abutters

= 145.24 **(TOTAL FEE)**

NOTE: Please call the Community Development Department for the current certificate of mailing rate. Checks should be made payable to the *City of Keene.* Credit card payments are accepted in-person or by calling 603-352-5440.

WAIVERS (See **Section 2 of Attachment B** for additional information.)

☐ **WAIVER(S) REQUESTED**
☐ **NO WAIVER(S) REQUESTED**

ADDITIONAL SUBMITTAL REQUIREMENTS (See Attachment C for additional information.)	SUBMITTED	EXEMPTION REQUESTED
PRODUCT SPECIFICATION SHEETS	✓	
SAMPLES OF MORTAR AND/OR BRICK – N/A		✓
COLOR REPRESENTATIONS, SIMULATIONS, OR RENDERINGS	✓	
PHOTOGRAPHS, RENDERINGS, AND/OR LINE SKETCHES	✓	
EXISTING CONDITIONS PLAN	✓	
PROPOSED CONDITIONS PLAN:	✓	
ELEVATIONS:	✓	

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COA-2024-04, Mod. #1

Historic District Commission (HDC)

Project Application - Attachment B, Section 1

Narrative description of proposed project

The proposed work is to install a 6.96 kilowatt, roof-mounted, photovoltaic solar array. The array will consist of 16 total panels (make/model - Q-Cell/Black 435 watt) on two south-facing, asphalt shingle roof surfaces (second story main roof, third story dormer). The panels are to be flush-mounted on the new asphalt shingle roof, parallel to the roof pitch and 4 inches off the surface of the roof. Proposed panels are made of black solar cells and black trim/frames to minimize visual impact on dark grey asphalt roof shingles.

The Solar array will connect to an interior basement inverter and main electrical service panel via a roof penetration box placed underneath one panel. From the roof-mounted penetration box, interior electrical conduit will run to the Northwest corner of the basement. On the exterior, the only change will be the installation of an emergency disconnect as required by electrical code. This disconnect switch will be mounted adjacent to the existing electrical meter on the West exterior wall (facing Middle Street).

Steps to ensure compliance with The City of Keene's Land Development Code (LDC):

- (LDC 22.5.5 A) Installing in a manner that is least visible and obtrusive (flush-mount panels, dark-colored panel cells and frames to blend in with dark-colored asphalt shingles, hidden supplementary components and supply lines)(See attached solar panel data sheets, attached proposed layout).
- (LDC 22.5.5 B) Installing on at the most preferential and feasible location (the rear side of the property faces North, so is not feasible for photovoltaic solar. The proposed location is the

South-face, installed on a shallow pitch roof such that the panels will not visible to pedestrians) (See attached proposed layout and roof plans).

- (LDC 22.5.5 C) Using roof-attachments that are removable and have been evaluated by a structural engineer as not damaging the underlying structure. (See attached roof-attachment detail).
- (LDC 22.5.5 D) Using a panel with that is muted and matches the nearby roof materials, and uses anti-reflective coating. (See attached solar panel data sheets).
- (LDC 22.5.5 E) Installing solar panels on the same plane as the roof and positioned to be in the least visible location. (See roof-attachment details, proposed panel layout).
- (LDC 22.5.5 F) Installing the solar array in a regular shape. (Straight columns and rows, with gaps only to account for existing skylights) (See attached proposed panel layout).
- (LDC 22.5.5 G) Placing the supplementary equipment and supply lines in inconspicuous locations. (Roof-penetration hidden under the upper-left (NW) most solar panel, then interior electrical conduit, connecting to an interior inverter and electrical service panel located in the Northwest corner of the basement).

Additional attachments include: Electrical line diagram, engineer's structural analysis, proposed system layout, system component data sheets, label schedule, roof attachment details, and utility company project approval. (Note: this application is supplemental to an already-approved HDC application for the same property. The original construction plans did not include a roof-mounted solar array, so this application is being submitted separately).

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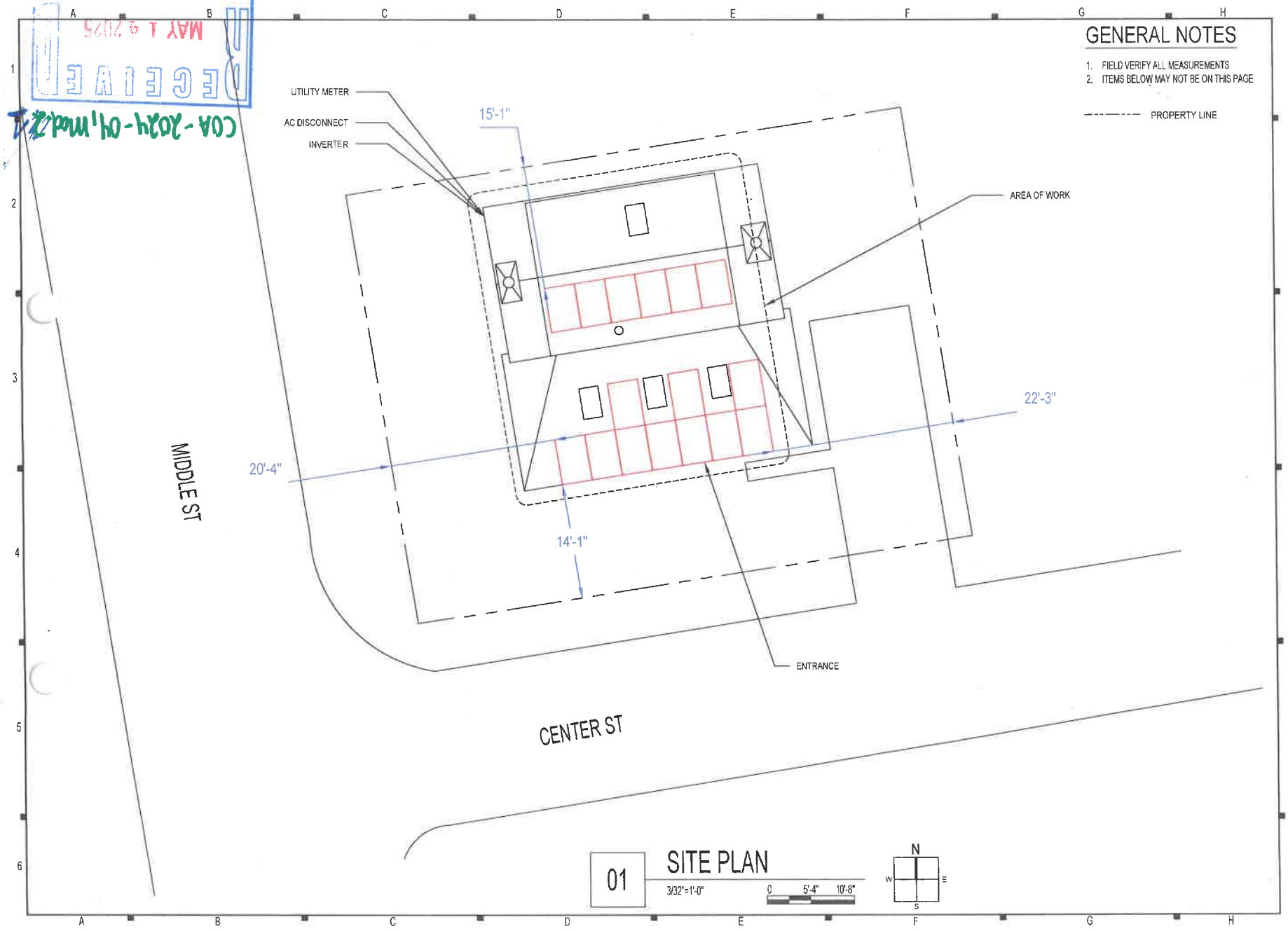

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

PROPERTY LINE

01 SITE PLAN
3/32"=1'-0"
0 5'-4" 10'-8"

CONTRACTOR

GREEN ENERGY OPTIONS

PHONE: 603-358-3444
ADDRESS: 37 ROXBURY ST
KEENE, NH 03431

LIC. NO.: 574714
HIC. NO.:
ELE. NO.:

UNAUTHORIZED USE OF THIS DRAWING SET WITHOUT WRITTEN PERMISSION FROM CONTRACTOR IS IN VIOLATION OF U.S. COPYRIGHT LAWS AND WILL BE SUBJECT TO CIVIL DAMAGES AND PROSECUTIONS

NEW PV SYSTEM: 6.960 kW

BROWN RESIDENCE

33 CENTER STREET
KEENE, NH 03431
APN: KEENM568L15

ENGINEER OF RECORD

PAPER SIZE 11" x 17" (ANSI B)

SITE PLAN

DATE: 04.16.2025
DESIGN BY: O.L.
CHECKED BY: M.M.

REVISIONS

A-101.00
(SHEET 3)

GENERAL NOTES

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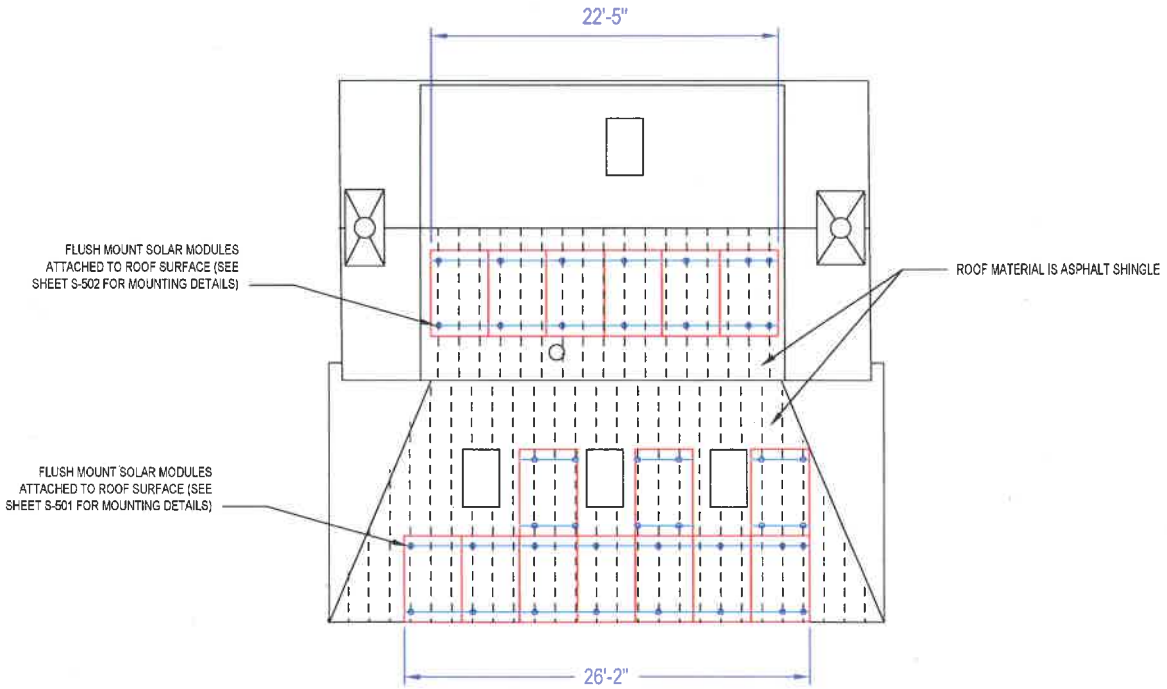
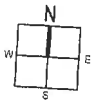
ROOF RAFTERS

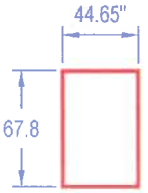


01 SOLAR ATTACHMENT PLAN

1/8"=1'-0"

0 4' 8'





MODULE:
HANWHA Q.CELLS
Q.TRON BLK M-G2+ 435
435 WATTS

CONTRACTOR

GREEN ENERGY OPTIONS

PHONE: 603-358-3444
ADDRESS: 37 ROXBURY ST
KEENE, NH 03431

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HIC. NO.:
ELE. NO.:

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NEW PV SYSTEM: 6.960 kW

BROWN RESIDENCE

33 CENTER STREET
KEENE, NH 03431
APN: KEENM568L15

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

SOLAR ATTACHMENT PLA

DATE: 04.16.2025
DESIGN BY: O.L.
CHECKED BY: M.M.

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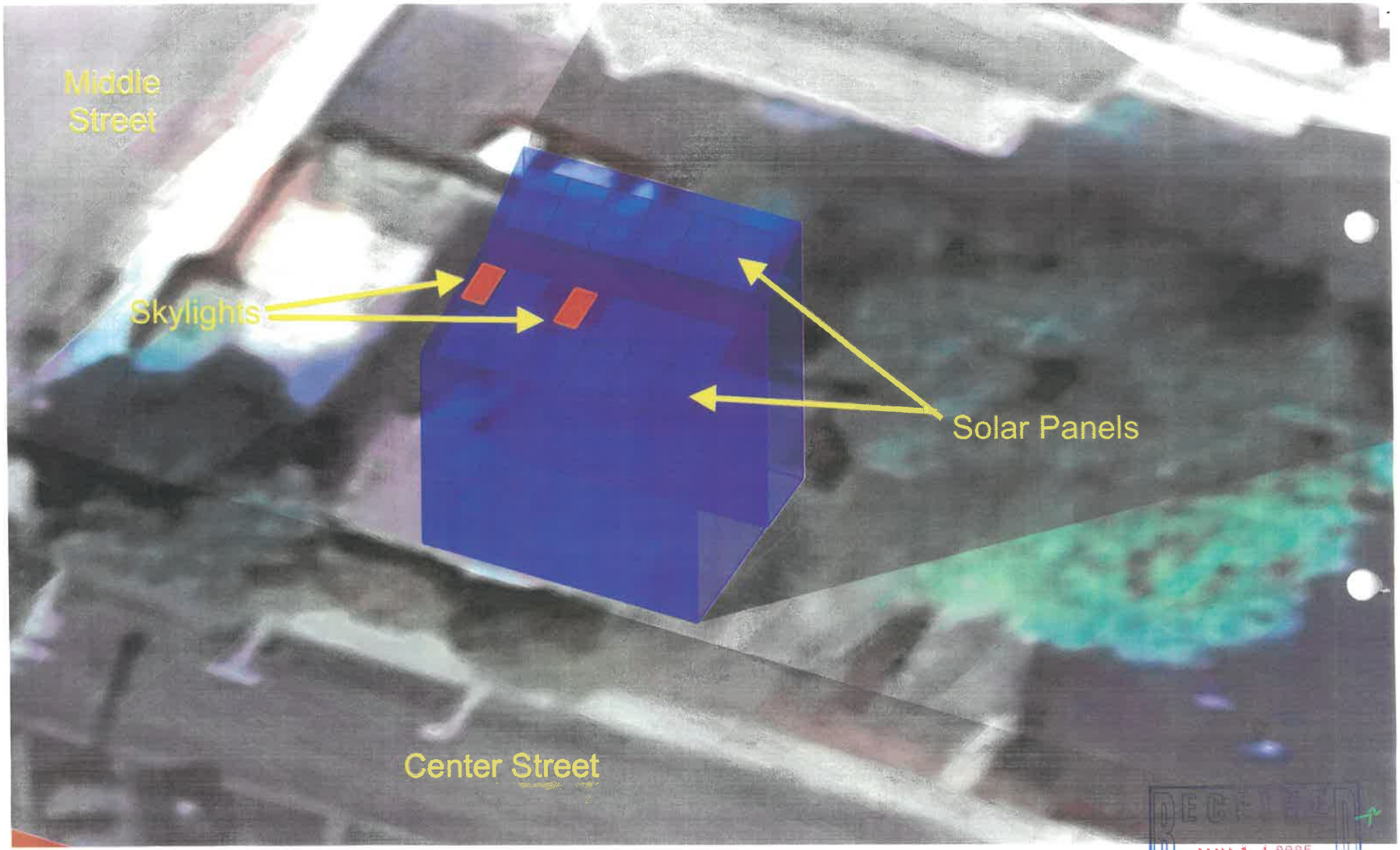
(SHEET 5)



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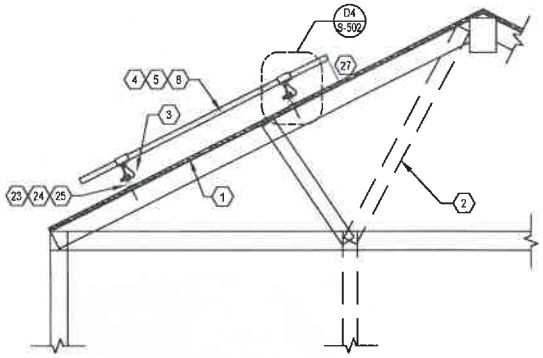
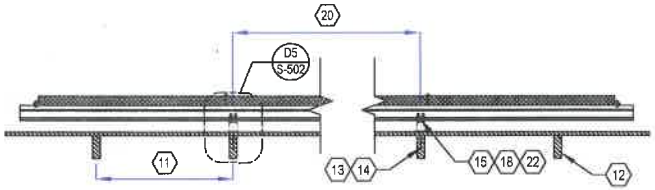
COA-2024-04, mod. #1



D1 RACKING DETAIL (TRANSVERSE)

NOT TO SCALE



D2 RACKING DETAIL (LONGITUDINAL)

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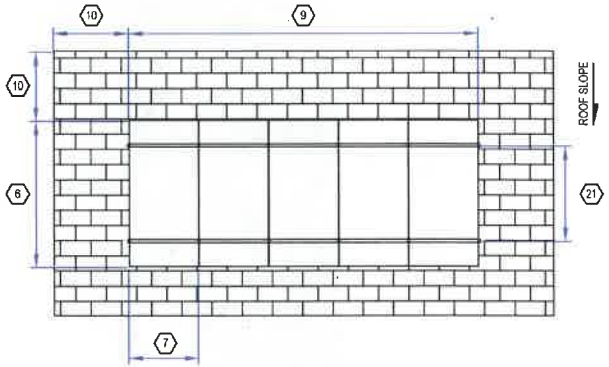
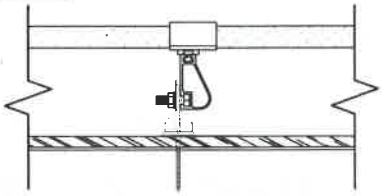


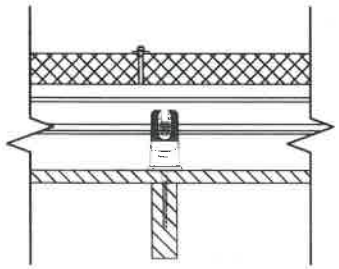
D3 RACKING DETAIL (TOP)

NOT TO SCALE



D4 DETAIL (TRANSVERSE)

NOT TO SCALE



D5 DETAIL (LONGITUDINAL)

NOT TO SCALE

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS

SHEET KEYNOTES

1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: TRUSS
3. ATTACHMENT TYPE: IRONRIDGE FLASHFOOT2
4. MODULE MANUFACTURER: HANWHA Q CELLS
5. MODULE MODEL: Q.TRON BLK M-G2+ 435
6. MODULE LENGTH: 67.8 IN.
7. MODULE WIDTH: 44.65 IN.
8. MODULE WEIGHT: 46.7 LBS.
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: 18" FROM RIDGE, 36" FROM EDGE
11. TRUSS SPACING: 16 IN. O.C.
12. TRUSS SIZE: 2X8 IN. NOMINAL.
13. LAG BOLT DIAMETER: BOLT/SCREW SUPPLIED WITH RACKING
14. LAG BOLT EMBEDMENT: PER RACKING MFG SPECIFICATIONS.
15. TOTAL # OF ATTACHMENTS: 14
16. TOTAL AREA: 126.14 SQ. FT.
17. TOTAL WEIGHT: 320.1 LBS.
18. WEIGHT PER ATTACHMENT: 22.89 LBS.
19. DISTRIBUTED LOAD: 2.54 PSF.
20. MAX. HORIZONTAL STANDOFF: 48 IN.
21. MAX. VERTICAL STANDOFF: IN ACCORDANCE WITH MODULE MANUFACTURER'S INSTRUCTIONS.
22. STANDOFF STAGGERING: NO
23. RAIL MANUFACTURER (OR EQUIV.): IRONRIDGE
24. RAIL MODEL (OR-EQUIVALENT): XR-100
25. RAIL WEIGHT: 0.68 PLF.
26. MAX. TRUSS SPAN: 8 FT.
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

CONTRACTOR

GREEN ENERGY OPTIONS

PHONE: 603-356-3444
ADDRESS: 37 ROXBURY ST
KEENE, NH 03431

LIC. NO.: 574714
HIC. NO.:
ELE. NO.:

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NEW PV SYSTEM: 6.960 kW

BROWN RESIDENCE

33 CENTER STREET
KEENE, NH 03431
APN: KEENM568L15

ENGINEER OF RECORD

PAPER SIZE 11" x 17" (ANSI B)

ASSEMBLY DETAILS

DATE: 04.16.2025
DESIGN BY: O.L.
CHECKED BY: M.M.

REVISIONS

S-502.00
(SHEET 10)

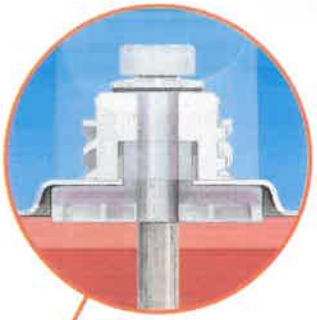
Tech Brief

IRONRIDGE

FlashFoot2

The Strongest Attachment in Solar

IronRidge FlashFoot2 raises the bar in solar roof protection. The unique water seal design is both elevated and encapsulated, delivering redundant layers of protection against water intrusion. In addition, the twist-on Cap perfectly aligns the rail attachment with the lag bolt to maximize mechanical strength.



Three-Tier Water Seal

FlashFoot2's seal architecture utilizes three layers of protection. An elevated platform diverts water away, while a stack of rugged components raises the seal an entire inch. The seal is then fully-encapsulated by the Cap. FlashFoot2 is the first solar attachment to pass the TAS-100 Wind-Driven Rain Test.

Twist-On Cap

FlashFoot2's unique Cap design encapsulates the lag bolt and locks into place with a simple twist. The Cap helps FlashFoot2 deliver superior structural strength, by aligning the rail and lag bolt in a concentric load path.

Single Socket Size

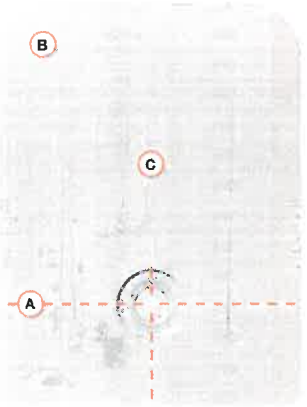
A custom-design lag bolt allows you to install FlashFoot2 with the same 7/16" socket size used on other Flush Mount System components.

Water-Shedding Design

An elevated platform diverts water away from the water seal.

Tech Brief

Installation Features



A Alignment Markers

Quickly align the flashing with chalk lines to find pilot holes.

B Rounded Corners

Makes it easier to handle and insert under the roof shingles.

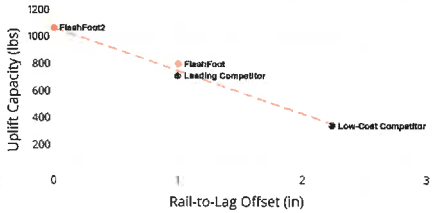
C Reinforcement Ribs

Help to stiffen the flashing and prevent any bending or crinkling during installation.

Benefits of Concentric Loading

Traditional solar attachments have a horizontal offset between the rail and lag bolt, which introduces leverage on the lag bolt and decreases uplift capacity.

FlashFoot2 is the only product to align the rail and lag bolt. This concentric loading design results in a stronger attachment for the system.



Testing & Certification

Structural Certification

Designed and Certified for Compliance with the International Building Code & ASCE/SEI-7.

Water Seal Ratings

Water Sealing Tested to UL 441 Section 27 "Rain Test" and TAS 100-95 "Wind Driven Rain Test" by Intertek. Ratings applicable for composition shingle roofs having slopes between 2:12 and 12:12.

UL 2703

Conforms to UL 2703 Mechanical and Bonding Requirements. See Flush Mount Install Manual for full ratings.

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CONTRACTOR

GREEN ENERGY OPTIONS

PHONE: 603-358-3444
ADDRESS: 37 ROXBURY ST
KEENE, NH 03431

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NEW PV SYSTEM: 6.960 kW

BROWN RESIDENCE

33 CENTER STREET
KEENE, NH 03431
APN: KEENM568L15

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: 04.16.2025
DESIGN BY: O.L.
CHECKED BY: M.M.

REVISIONS

R-005.00
(SHEET 15)

Tech Brief

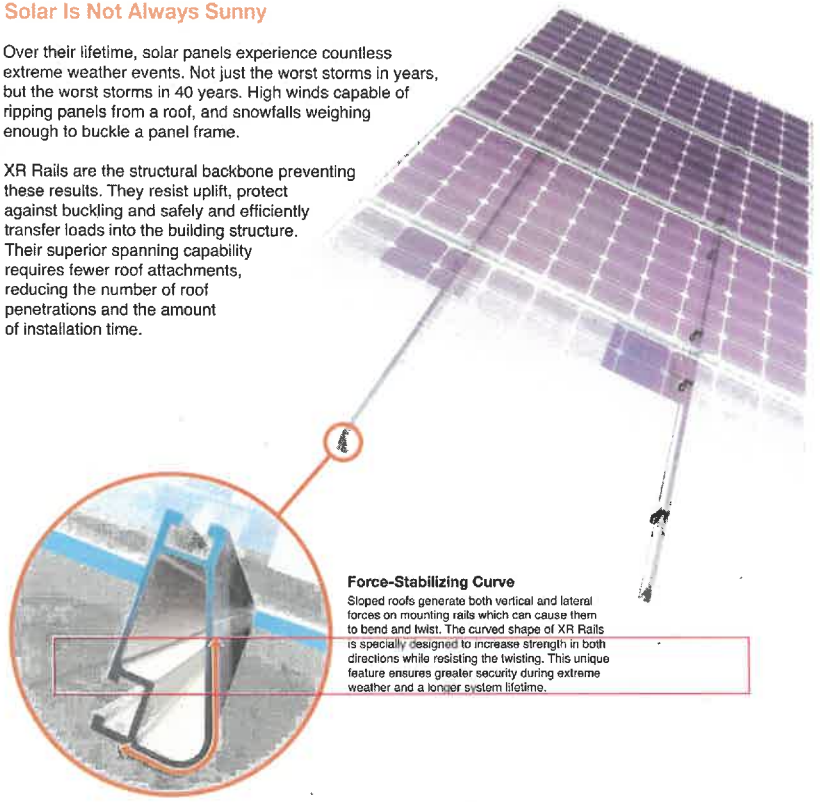
IRONRIDGE

XR Rail Family

Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



Force-Stabilizing Curve

Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

Compatible with Flat & Pitched Roofs

XR Rails are compatible with FlashFoot and other pitched roof attachments.

IronRidge offers a range of tilt leg options for flat roof mounting applications.

Corrosion-Resistant Materials

All XR Rails are made of marine-grade aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.

XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.

XR10

XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves 6 foot spans, while remaining light and economical.

- 6' spanning capability
- Moderate load capability
- Clear anodized finish
- Internal splices available

XR100

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 8 feet.

- 8' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available

XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans 12 feet or more for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	5' 4"	6'	8'	10'	12'
None	100	XR10		XR100		XR1000	
	120						
	140						
	160						
10-20	100						
	120						
	140						
	160						
30	100						
	160						
40	100						
	160						
50-70	160						
80-90	160						

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CONTRACTOR

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PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: 04.16.2025
DESIGN BY: O.L.
CHECKED BY: M.M.

REVISIONS

R-004.00
(SHEET 14)

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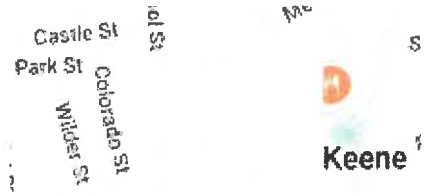
Google Maps 13 Center St

Keene, New Hampshire

Google Street View

Jul 2023 See more dates

Image capture: Jul 2023 © 2024 Google



Context View at east end of Center Street. Note 2-story porch/balconies

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COA-2024-04, Mod. 2

Google Maps 27 Center St

Image capture: Jul 2023 © 2024 Google

View of subject property (right) and Courthouse directly across the street. Stairs to be removed; new addition on this side of 'non-contributing' portion of existing house.

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COA-2024-04, mod 21

Google Maps 37 Center St

Image capture: Jul 2023 © 2024 Google

View from subject property facing south, showing neighborhood context.

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COA - 2024 -04, Mod. 21

Google Maps 14 Middle St

Image capture: Jul 2023 © 2024 Google

View of subject property facing north, northeast.

Note 2-story structure on face of abutting building

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COA-2024-04, Mod #1

Google Maps 56 Court St

Image capture: Sep 2023 © 2024 Google

Neighborhood context photo showing large expanse of (contemporary) glass adjoining a traditional brick residential-type building.

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COA -2024-04, mod. #1

Google Maps 55 Vernon St

Image capture: Jul 2023 © 2024 Google

Neighborhood context showing contemporary use of Storefront glazing

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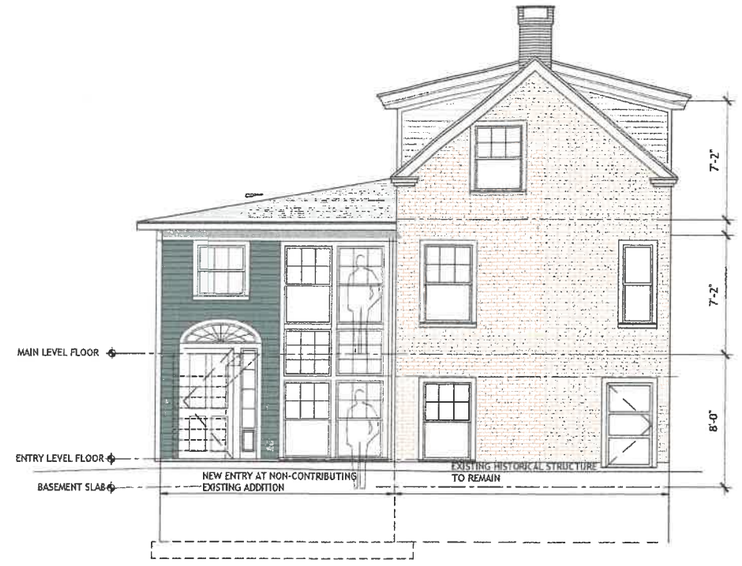
By

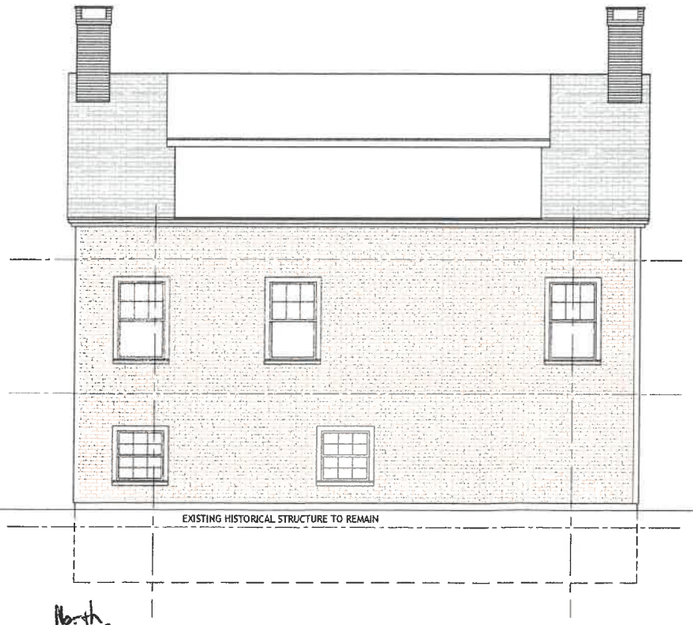
COA-2024-04, mod. 2

Proposed solar panel locations (see attached sheet for panel layout)

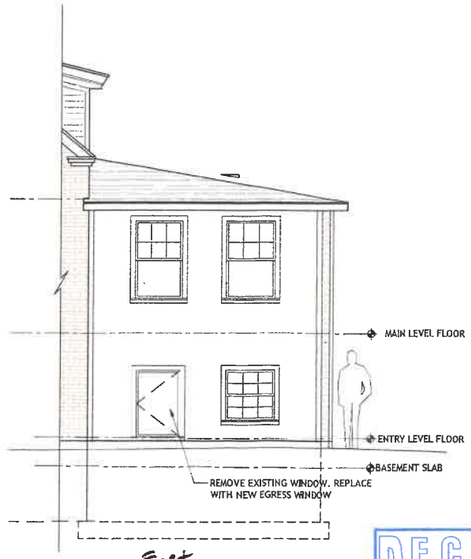
1 SOUTH ELEVATION
scale: 1/4" = 1'-0"



2 ~~SOUTH~~ West ELEVATION
scale: 1/4" = 1'-0"



3 ~~SOUTH~~ North ELEVATION
scale: 1/4" = 1'-0"



4 ~~SOUTH~~ East ELEVATION
scale: 1/4" = 1'-0"

ISSUE LOG

DATE:	FOR:
10-22-24	HDC SUBMITTAL

These drawings are LIMITED SCOPE, and are intended only to describe general design intent, scale overall spatial relationships and materials where indicated.

These drawings shall be considered preliminary for purposes of design review, comments or bidding/pricing only, unless otherwise released for other purposes as indicated in the Issue Log.

The Architect assumes responsibility for errors in the information provided, and not for omissions.

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db ARCHITECTS LLC
DAN BARTLETT AIA
183 WINCHESTER STREET KEENE NH
603 352-0812
603 762-1996
dan@dbarchitect.net

project name: GARAGE ADDITION
BROWN RESIDENCE
33 CENTER STREET KEENE NH

drawing name:
ELEVATIONS

DRAFT
CD PHASE
OCT 22, 2024
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sheet number
A2.1

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MAY 14 2025
By

COA-2024-04, mod. #1

From: Anthony F
To: Fernando Del Ama Gonzalo
Cc: Evan Clements
Subject: Re: Possible Architectural Proposal
Date: Thursday, May 22, 2025 3:55:55 PM

Fernando,

Excellent!

Now forwarding to Evan Clemmens, Planner of City of Keene so that he may forward your excellent response to the other Historic District Commission (HDC) members to see how we may further develop this initiative. Apparently, it has come to my attention that the city does have some background data (that I have not yet seen) that might be utilized as foundational from which to enhance. Additionally, we had a goal setting session last night and discussed the possibility of tapping similar talent in the Keene film department and other creative arts that could possibly make this initiative truly interdisciplinary. However, I will need to hold back my excitement and go through the baby steps by having feedback from other HDC members.

Thank you much and my very Best!
Anthony

On Thu, May 22, 2025 at 1:01 PM Fernando Del Ama Gonzalo <Fernando.delama@keene.edu> wrote:

> Dear Anthony,
> Your proposal is exciting, and it is an excellent opportunity for collaboration. I envision involving students in identifying and highlighting significant architectural character-defining features of various buildings in Keene. This initiative will enhance their learning experience and foster a deeper appreciation for our architectural heritage. To support this initiative, we can offer grants for extracurricular activities. I'm curious about how many students you would like to get involved in this project. The expected workload would be around 10 hours per week over ten weeks per semester, which I believe is manageable for students aiming to engage with real-world projects. I would love to discuss this further and explore how we can work together to make this project successful.
>
> Looking forward to your response.
>
> ---
>
> **From:** Anthony F <ajfnino@gmail.com>
> **Sent:** Wednesday, May 21, 2025 8:03 PM
> **To:** Fernando Del Ama Gonzalo <Fernando.delama@keene.edu>
> **Subject:** Possible Architectural Proposal
>
> You don't often get email from ajfnino@gmail.com. Learn why this is important
>
> **CAUTION:** This email originated from outside of the University System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Fernando,

My name is Anthony Ferrantello, retired architect and member of the Keene Historic Commission. The reason for contacting you is to discuss the possibility of involving a Keene State Architecture student (or students) to assist in the effort to identify, broadcast and highlight significant architectural character defining features of various Keene buildings. The thought is to create some sort of educational lively graphic flyer or poster for each building in PDF or other colorful format that can be sent out to Keene residents to generate interest and involvement in preserving Keene's historic fabric in architecture, history, and culture.

So, could this effort be offered as a possible course for credit or simply as extra curricular involvement in civic engagement for extra credit and recognition? Perhaps this proposed student effort might expose students to take interest in historic preservation as a field of specialization or as a cornerstone paper or thesis? Just some of my thoughts.

Thank you in advance for taking time to consider this proposal.

My Very Best,
Anthony Ferrantello