



AGENDA  
Village of Chenequa  
Monday, May 13, 2024  
31275 W County Road K, Chenequa, WI 53029

*This is official notice that the regular monthly meeting of the Village Board of Trustees for the Village of Chenequa will be held immediately following the Plan Commission meeting, on Monday, May 13, 2024, in the Village Board Room and via Zoom Communications. The following matters will be discussed, with possible actions:*

Call to Order  
Pledge of Allegiance

1. Public comment period: *Public comments on any subject without any action, except possible referral to a governmental body or staff member.*
2. Approval of minutes from the Village Board meeting on April 8, 2024.
3. Approval of Invoices.
4. Review and consider action on proposed landscape plan and outdoor lighting plan at 5525 N State Road 83, Michael and Aoy Mitchell. (Tax Key No. 418-995-002).
5. Review and consider action on proposed sauna accessory structure at 6067 N State Road 83, Kathryn Quadracci Flores. (Tax Key No. 398-988).
6. Review and consider action on proposed solar panel installation at 6321 N Oakland Hills Road, Denise Spusta. (Tax Key No. 402-987).
7. Review and consider action on shoreland zoning violation at 4667 N Pine Meadows Lane, Michael Kelly. (Tax Key No. 734-991-001).
8. Update on Pier Regulation Ordinance.
9. Review and consider action on Establishment of Railroad Quiet Zone.
10. Appreciation of Service - Trustee Robert Bellin.
11. Report – Forester.
12. Report – Captain.
13. Report – Village Administrator.
14. Report – Village President.
15. Report – Village Attorney.
16. Agenda items to be considered for future meetings.

17. Adjournment.

Respectfully submitted by:  
Deanna Braunschweig  
Village Clerk – Treasurer

**To participate via Zoom:**

<https://us02web.zoom.us/j/87928191689?pwd=Rk5YcU9mbG9YZEptS2Y5NEppVGJvZz09>

**Meeting ID is 879 2819 1689 and the Passcode is 769219**

Or Dial: 305 224 1968 US

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Request from persons with disabilities who need assistance to participate in this meeting or hearing should be made to the Village Administrator with as much advance notice as possible. It is possible that members of and possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information. No action will be taken by any other governmental body except by the governing body noticed above.

NOTICE OF POSTING TO VILLAGE HALL BULLETIN & WEBSITE  
Village Clerk posted this agenda on Thursday, May 9, 2024, by 4:30 PM

VILLAGE BOARD MINUTES  
VILLAGE OF CHENEQUA

VILLAGE OF CHENEQUA - VILLAGE BOARD MINUTES  
OF MONDAY, April 8, 2024  
Unofficial until approved by the Village Board.  
Approved as written ( ) or with corrections ( ) on \_\_\_\_\_.

A meeting of the Village Board of Trustees was held on Monday, April 8, at 6:43 p.m. utilizing Zoom Communications. The following members were in attendance:

Ms. Villavicencio / Village President - present  
Ms. Manegold / Trustee - present  
Mr. Pranke / Trustee – present  
Mr. Bellin / Trustee - present  
Mr. Grunke / Trustee - present  
Ms. von Hagke / Trustee – present  
Mr. Kubick / Trustee - present  
Mr. Luljak / Village Attorney Representative – absent  
Ms. Miller / Village Attorney Representative – present  
Mr. Gartner/ Village Attorney Representative - absent  
Mr. Lincoln / Zoning Administrator-Forester - present  
Mr. Neumer / Administrator-Police Chief – absent  
Mr. Carney / Police Captain – present  
Ms. Braunschweig / Village Clerk – present

**Call to Order**

**Pledge of Allegiance**

**Public in Attendance**

Ted Rolfs, Rob Manegold, Alan Enters, Deborah McNear, George Rolfs, JoJo Gehl Neumann, Judy Hansen, Julie Petri, Keith Everson, Mark Petri, Richard Kriva, Roger Behling, Stephanie Benz, Timothy Fredman, Tim Shaw, Carrie Gindt

**Public Comment**

President Villavicencio read a prepared statement allowing for public comments of two minutes or less.

Roger Behling of the Chenequa Country Club, Chair of Raquetball Club, spoke in favor of pickle ball and pickle ball courts during Plan Commission. Comments at the Plan Commission: Chenequa Country Club are marking tennis courts as pickle ball courts. Looking at dedicated pickle ball courts. Chenequa Country Club is looking to the West of the tennis ball courts to accommodate the courts. The are dying ash trees to be removed. The setback right of way would not be met and would like to discuss for the future.

Ted Rolfs commented on the budget and questioned why there were more revenues. He spoke in favor of the pier ordinance and in favor of passage of the pier ordinance.

**Approval of minutes from the Village Board meeting on March 11, 2024.**

Motion (Kubick/Manegold) to approve the minutes from the Village Board meeting of March 11, 2024, as presented. *Motion carried.*

**Presentation of 2023 Financial Statements by Carrie Gindt of Reilly, Penner & Benton LLP**

Carrie Gindt of Reilly, Penner & Benton LLP, summarized the 2023 audit.

She commented on the increase General Fund had an increase of revenues of \$149,000; and the boat launch had a decrease of \$22,000. The debt service and capital projects had no change for the year.

In comparison to budget, the revenues received 117% of what was budgeted. Most of the overage of revenues was due to the increase in investment income and unbudgeted workman's comp receipts. The Police was over due to payout of sick and vacation.

The auditors had an unmodified opinion.

The increase in investment income for 2023 was \$104,000.

Review and consider Acknowledging Receipt and Approving the Audit Conducted by Reilly, Penner & Benton LLP; *Resolution 2024-04-08-01.*

**Motion (Manegold/Grunke) to approve the Audit Conducted by Reilly, Penner & Benton LLP; Resolution 2024-04-08-01. Motion carried.**

**Review and consider Resolution Amending the 2023 Adopted Budget; Resolution 2024-04-08-02.**

**Motion (Kubick/Grunke) to approve Resolution Amending the 2023 Adopted Budget; Resolution 2024-04-08-02. Motion carried.**

**Approval of Invoices**

**Motion (Bellin/Manegold) to approve the invoices, as presented. Motion carried.**

**Review and consider action on proposed landscape plan at 4809 Pine Meadows Lane, Rick and Sally Kriva. (Tax Key No. 0734-997).**

The proposal was discussed and recommended by the Plan Commission.

**Motion (Manegold/Bellin) to approve the proposed landscape plan at 4809 Pine Meadows Lane, Rick and Sally Kriva. (Tax Key No. 0734-997). Motion carried.**

**Review and consider action on application for the installation of a shed at W330N6163 Hasslinger Dr., Nashotah, Mark and Mary Olson; CHQV 0405931001 (Tax Key No. MRTT 0405-026, Town of Merton, Extraterritorial Jurisdiction).**

The proposal was discussed and recommended by the Plan Commission.

This property is in Chenequa, parcel number CHQV 0405931001; not MRTT 0405 026 and should not be listed as extraterritorial.

A deed restriction has been drafted to bind the lands in Chenequa (0405 931 001) and Merton (0405 026), east of Hasslinger Drive with the land to the west of Hasslinger drive where the primary residence is located.

A permit would not be issued until the Deed Restriction is approved and recorded with Waukesha County. This is a legal document stating that these are deeded together but acting as one with the Town of Merton parcel.

Attorney Miller explained the deed restrictions and that the two parcels are considered together; Chenequa is not losing any land. Attorney advised that the word extraterritorial could be stricken, and include the Chenequa tax number.

**Motion (Grunke/Pranke) to approve the installation of a shed at W330N6163 Hasslinger Dr., Nashotah, Mark and Mary Olson; CHQV 0405931001, MRTT 0405-026 and include the signed, recorded deed restriction along with the proposal.** *Motion carried.*

**Review and consider action on Accessory Structure Advisory Committee Appointments.**

President Villavicencio nominated Trustee von Hagke; Plan Commission Member, Matt Carroll; Pine Lake Representative, Judy Hansen; Beaver Lake Representative, John Nagy, North Lake Representative, pending at time of meeting; and Off Lake Representative, JP Mesching. And Chris McClain.

**Motion (Manegold/Kubick) to appoint to the Accessory Structure Advisory Committee, Trustee von Hagke; Plan Commission Member, Matt Carroll; Pine Lake Representative, Judy Hansen; Beaver Lake Representative, John Nagy, North Lake Representative, pending at time of meeting; and Off Lake JP Mesching, and Chris McClain.** *Motion carried.*

**Review and consider action on Resolution 2023-04-08-03, Schedule of Fees, Knox Box Fee Increase.**

**Motion (Bellin/Grunke) to approve Resolution 2023-04-08-03, Schedule of Fees, Knox Box Fee Increase. Motion carried.**

Review and consider action on Establishment of Railroad Quiet Zone.  
Postpone to May.

**Review and consider action on Pier Regulation Proposal.**

Deborah McNear reviewed the Plan Commission discussion. The Plan Commission did not recommend to the Village Board. There was an email from Mark Petri of questions to the Village Board and Deborah McNear responded to the email. The ordinance would also need sixty days for DNR approval.

With the ordinance the Village would have a system of enforceability and eyes for new piers. A twelve foot off set was added from the property line to assist with riparian rights. This would allow for twenty-four feet between two piers, and would allow for a twenty-four foot lifts. Slips were defined as bounded by three sides. The number of lifts are not limited. This is a boating and sailing community.

Discussion ensued of grandfathering of the current piers. Not many piers with more than 100 feet. If a pier is replaced it may have to be downsized. Discussion ensued as to if the Village wants to regulate length or size. Repairs as defined to not need a permit.

Discussion ensued as to how many slip restrictions are being violated and how many have a platform that is larger than 200 square feet. Discussion ensued that these would be grandfathered at the time of the ordinance; if replaced may need to be replaced smaller in size or request a variance.

Discussion ensued to have the ordinance presented to the Village residents. Discussion ensued of those with long piers have shallow water. Discussion ensued of not allowing second floor piers.

Discussion of consensus for the attorney to look into and review with Deborah McNear and bring back to the board as an ordinance. Discussion ensued to have an idea of how many are out of compliance if rebuilding.

Discussion ensued to allow 80 foot as the maximum size, and to address slips, no double decker piers, deck size, and that variance is available.

**Motion (von Hagke/Pranke), for the Village Attorney to draft an ordinance for May, from the proposal as presented. Motion carried.**

**Approval of Arbor Day Proclamation – April 26, 2024.**

**Motion (Manegold/Grunke) to approve Arbor Day Proclamation – April 26, 2024. Motion carried.**

**Approval of Resolution Recognizing International Migratory Bird Day, Saturday, May 11, 2024.**

**Motion (Bellin/von Hagke) to approve Resolution Recognizing International Migratory Bird Day, Saturday, May 11, 2024. Motion carried.**

**Consider appointments to the Public Safety Committee, Operations Committee, Board of Review, Plan Commission, Police Commission, Open Space Committee, Hwy 83 Task Force, Personnel Committee, Board of Appeals, Lake Country Fire & Rescue Commission, Lake Management Committee.**

President Villavicencio announced committees continuing with current members are Public Safety, Operations, Police Commission, Open Space, Hwy 83 Task Force.

President Villavicencio announced appointments as follows:

Board of Review Thomas Grieve; Plan Commission is Rick Kriva; Personnel Committee: Dixon Benz Jr.; Board of Appeals, Carol Manegold; Fire and Rescue Commission, Tom Marshall;

Lake Management, Judy Hansen, Fritz Seidel, and Deborah McNear and also, Andrew Gehl, Jo Ann Villavicencio, and Carol Managold.

**Motion (Kubick/Grunke) to approve the appointments, Board of Review Thomas Grieve; Plan Commission is Rick Kriva; Personnel Committee: Dixon Benz Jr.; Board of Appeals, Carol Manegold; Fire and Rescue Commission, Tom Marshall; Lake Management, Judy**

**Hansen, Fritz Seidel, and Deborah McNear and also, Andrew Gehl, Jo Ann Villavicencio, and Carol Managold. Motion carried.**

**Discussion of Meeting Packets, paper versus electronic.**

The Village President commented to use the electronic device rather than having printed copies. Consensus was to use electronic devices rather than paper if meeting in person.

Report – Village Forester – On April 11th, the USDA will proceed with goose egg oiling.

Report – Village Captain – Captain Carney reported that North Lake is under a slow no wake rule. The water is 3 inches over. This will be re-evaluated next week.

Report – Village President. – Attorney Brittany Miller will be leaving us and moving to the East Coast.

Report – Village Attorney – No Report.

**Future Agenda items to be considered:**

None.

**Adjournment**

Motion (Pranke/Grunke) adjourn the Village Board meeting at 7:35 p.m. *Motion carried.*

Respectfully submitted by:

Approved and Ordered Posted by:

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Deanna Braunschweig  
Village Clerk - Treasurer

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Jo Ann F. Villavicencio  
Village President



## STAFF REVIEW

**Date:** May 6<sup>th</sup>, 2024

**Meeting Date & Time:** Monday, May 13<sup>th</sup> at 6:00 P.M.

**To:** Plan Commission, Village of Chenequa

**From:** Planning Department

**Subject:** Site Plan Review

**Landscaper:** Land Works

**Owner:** Michael and Aoy Mitchell

**Location:** 5525 N State Road 83

**Project Description:** Proposed Landscape Plan and Lighting Plan

**Zoning District:** Residence District - Lot Abutting a Lake

### COMMENTS:

#### Proposed Landscaping

1. Landworks has recently submitted a landscape and lighting plan on behalf of the Mitchell family.
2. A complete landscape and grading plan with a photo book of sample materials and proposed plantings is provided in the Plan Commission and Village Board packet.
3. All proposed landscaping and landscape lighting is currently beyond the 75' setback from the OHWM of Pine Lake.
4. Landscaping includes;
  - One at grade patio on the lakeside of dwelling
    - o This patio is entirely outside the 75' shoreland buffer setback.
    - o The patio is proposed to be constructed from "pattern bluestone"
  - Various pathways
    - o Around the perimeter of the home there are various proposed paths and stepping stones.
    - o These paths are proposed to be constructed of irregular bluestone with a granite cobble border
    - o The stepping stones will be constructed of irregular bluestone.



- Tree Wells
  - o There are three retaining wall/tree wells proposed around the house.
  - o These tree wells are proposed to be constructed of blue granite boulders
  - o All walls are outside of the 75' setback on plan
  - o Location can be found on the provided landscape plan
- Spa feature
  - o On the north side of the residence the applicant is proposing a spa feature as shown on plans.
  - o The spa feature is proposed to be constructed of stainless steel
  - o The spa feature is proposed to be 7.5'X7.5'
  - o This spa feature is not within the 75' setback of Pine Lake and is greater than 100' from the nearest property boundary.

5. The landscape plan also proposes 17 fully shielded pathway lights around the property.
  - a. A spec sheet for the proposed landscape light is provided in the packet
  - b. The proposed lumen output per fixture is 35
  - c. The color temperature of these fixtures is 2,700K

c: Dan Neumer, Administrator  
Deanna Braunschweig, Clerk  
Paul Launer, Lake Country Inspections  
Micheal and Aoy Mitchell, Owner  
Cody Lincoln, Zoning Administrator

Becker Blue Granite Boulders - Retaining Walls



Irregular Bluestone Stone Patio with Granite Cobble Border



Pattern Bluestone Stone Patio and Steps



House Veneer Stone - Split Face Field Stone



Irregular Bluestone Steppers Through Turf



Photos Depict Planting Design Intent - Final Selections TBD



Proposed Plant Palette - Final Selections TBD



NORWAY SPRUCE  
PICEA ABIES



HEMLOCK  
TSUGA CANADENSIS



GREEN GIANT ARBORVITAE  
THUJA PLICATA 'GREEN GIANT'



VERNAL WITCHHAZEL  
HAMAMELIS VERNALIS



BOTTLE BRUSH BUCKEYE  
AESCULUS PARVIFLORA



BOTTLE BRUSH BUCKEYE  
AESCULUS PARVIFLORA



DOUBLEFILE VIBURNUM  
VIBURNUM 'MARIESII VIBURNUM'



BLUE MIST FOTHERGILLA  
FOTHERGILLA GARDENII 'BLUE MIST'



TINA CRABAPPLE  
MALUS SARGENTII 'TINA'



ANN MAGNOLIA  
MAGNOLIA LILIFLORA 'ANN'



EASTERN REDBUD  
CERCIS CANADENSIS



EASTERN REDBUD  
CERCIS CANADENSIS



BLOODGOOD JAPANESE MAPLE  
ACER PALMATUM 'BLOODGOOD'



ARCTIC FIRE DOGWOOD  
CORNUS STOLONIFERA ARCTIC FIRE



PURPLE PAVEMENT ROSE  
ROSA RUGOSA 'PURPLE PAVEMENT'



WISCONSIN RED MUSCLEWOOD  
CARPINUS CAROLINIANA 'WISCONSIN RED'



CAROLINA SWEET SHRUB  
CALYCANTHUS 'APPROHODITE'



CAROLINA SWEET SHRUB  
CALYCANTHUS 'APPROHODITE'



GREEN GEM BOXWOOD  
BUXUS X 'GREEN GEM'



INCREDIBALL HYDRANGEA  
HYDRANGEA ARBORESCENS 'INCREDIBALL'



CLIMBING HYDRANGEA  
HYDRANGEA ANOMALA PETIOLARIS



SPICE ISLAND VIBURNUM  
VIBURNUM CARLESII 'SPICE ISLAND'



ANNABELLE HYDRANGEA  
HYDRANGEA ARBORESCENS 'ANNABELLE'

Proposed Plant Palette - Final Selections TBD



SUMMER BEAUTY ALLIUM  
ALLIUM SUMMER BEAUTY



WOODS BETONY  
STACHY OFFICINALIS 'HUMMEL0'



DELFT LACE ASTILBE  
ASTILBE 'DELFT LACE'



PULMONARIA  
PULMONARIA OFFICINALIS



CARADONNA SALVIA  
SALVIA NEMOROSA 'CARADONNA'



WHITE SWAN ECHINACEA  
ECHINACEA 'WHITE SWAN'



NARROW LEAF BLUE STAR  
AMSONIA HUBRICHTII



GERANIUM 'BEVAN'S VARIETY'  
Geranium macrorrhizum 'Bevan's Variety'



HARDY GERANIUM  
GERANIUM AS A GROUND COVER



DARK TOWERS PENSTEMON  
PENSTEMON X 'DARK TOWERS'



PRAIRIE DROP SEED  
SPOROBOLUS HETEROLEPIS



ASSORTED PEONY  
PAEONIA LACTIFLORA



AUTUMN BRIDE CORAL BELL  
HEUCHERA VILLOSA 'AUTUMN BRIDE'



MISTY LACE GOAT'S BEARD  
ARUNCUS 'MISTY LACE'



SEPTEMBER CHARM ANEMONE  
ANEMONE X 'SEPTEMBER CHARM'



MONTROSE WHITE CALAMINT  
CALAMINTHA NEPETA 'MONTROSE WHITE'



MOOR GRASS  
MOLINIA CAERULEA



BRUNETTE SNAKEROOT  
ACTAEA SIMPLEX 'BRUNETTE'



GLOBEMASTER ALLIUM  
ALLIUM 'GLOBEMASTER'



EVAN SCENT DAFFODIL  
DAFFODIL 'EVAN SCENT'

## DM LED Path Light

DESIGNER PREMIUM

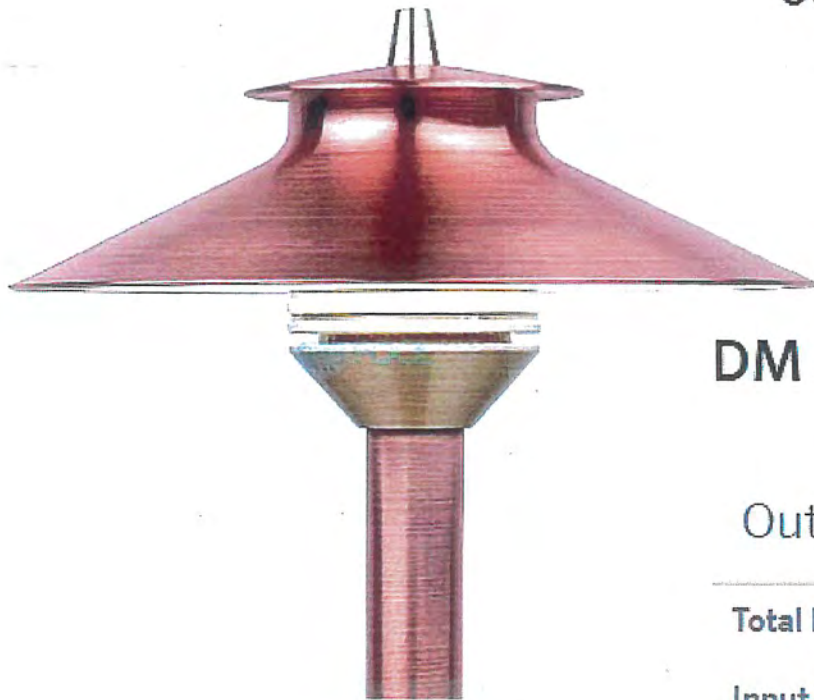
1, 3  
LEDs

13 Options  
Finishes

OVERVIEW

MODELS

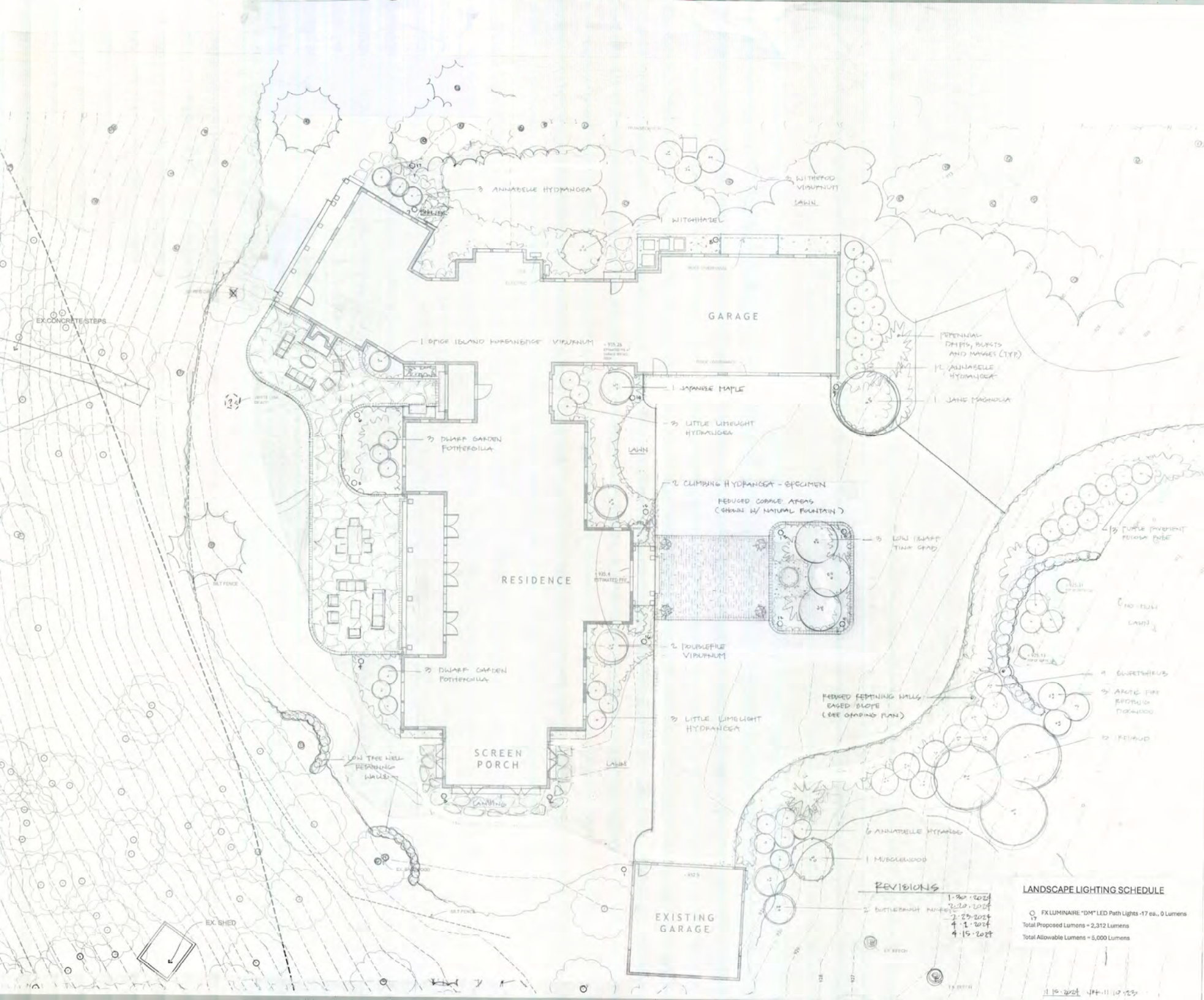
SPECS



FX DM Pathlight

### DM Spec Chart

Output	1LED
Total Lumens†	35
Input Voltage	10 to 15V
Input Power (W)	2.0



**MITCHELL RESIDENCE**  
5525 N. ST. 83  
HARTLAND, WI



**REVISIONS**

1	30-2024	1-30-2024
2	20-2024	2-20-2024
3	23-2024	4-1-2024
4	15-2024	4-15-2024

**LANDSCAPE LIGHTING SCHEDULE**

○ FX LUMINAIRE "DM" LED Path Lights - 17 ea., 0 Lumens  
 Total Proposed Lumens = 2,312 Lumens  
 Total Allowable Lumens = 5,000 Lumens

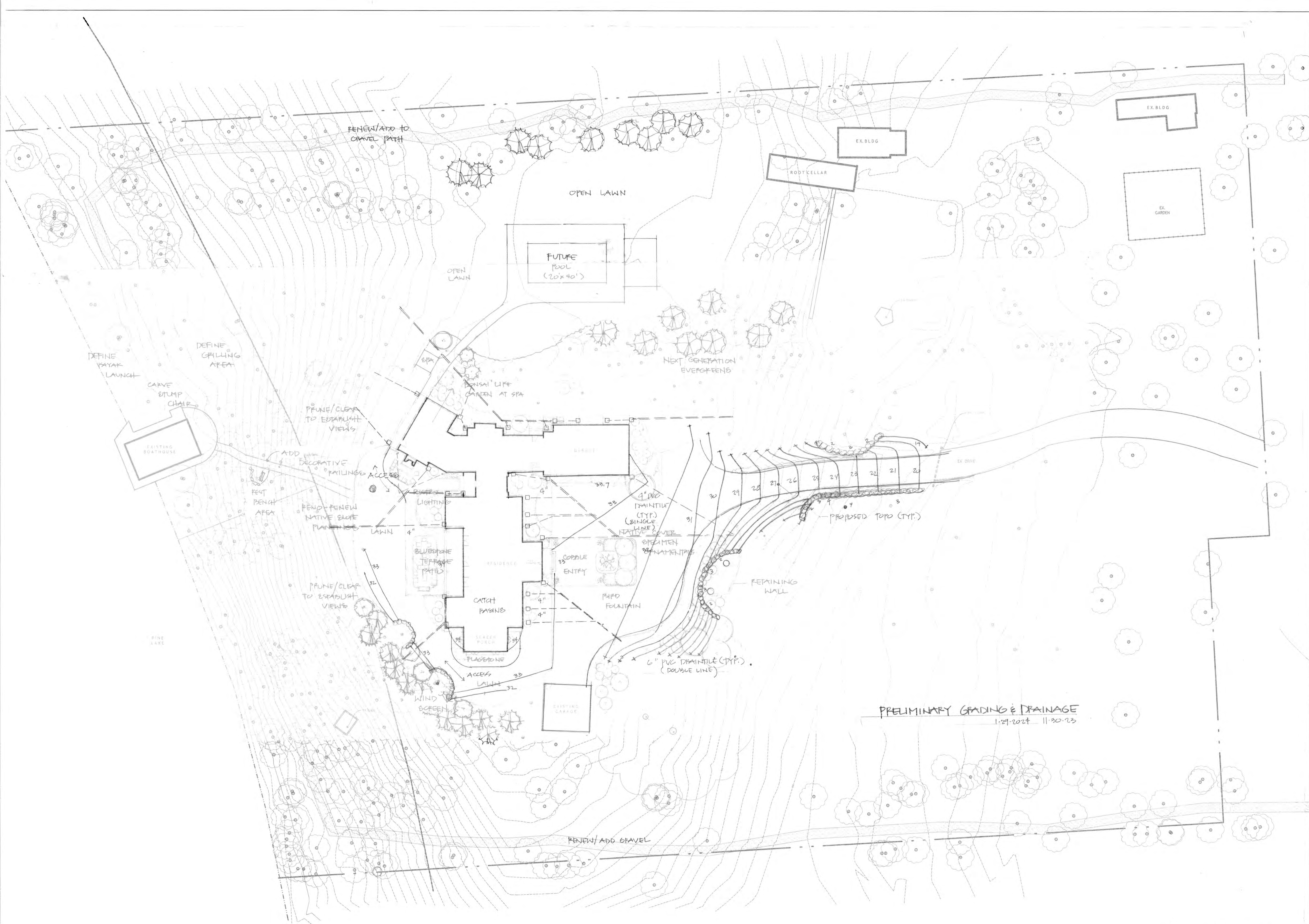
Site Inventory and Analysis  
 LA Name: TEAM-106  
 Revisions:  
 Sheet Number: 1/1  
 Date: 0.0.2021



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**MITCHELL RESIDENCE**  
5525 N STATE ROAD 83  
HARTLAND, WI

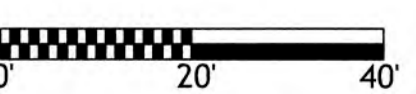


PRELIMINARY GRADING & DRAINAGE  
1.29.2024 - 11.30.23

Site Inventory and Analysis

LA Name  
Revisions:  
Sheet Number: 1/1  
Date: 0.0.2021

Scale:  
1" = 20'-0"



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JPL/11.10.23





## STAFF REVIEW

**Date:** May 6th, 2024

**Meeting Date & Time:** Monday, May 13<sup>th</sup> 6:00 p.m.

**To:** Plan Commission, Village of Chenequa

**From:** Planning Department

**Subject:** Site Plan Review

**Architect:** Vetter Architect

**Owner:** Kathryn Quadracci-Flores

**Property Address:** 6067 N State Road 83

**Project Description:** Proposed Sauna Structure

**Zoning District:** Residence District- Lot Abutting Lake

<b>Lot Restrictions:</b>	<b>REQUIRED RES. DISTRICT</b>		<b>PROPOSED PROJECT</b>	
<b>LOT AREA:</b>	2	acres	2.89	Acres
<b>LOT WIDTH: AVERAGE</b>	150	L.F. min.	215	L.F.
<b><u>ACCESSORY STRUCTURE</u></b>				
<b>YARD SETBACKS:</b>				
<b>Road (East)</b>	75	ft. min.	400+	ft.
<b>Side (North)</b>	10	ft. min.	67	ft.
<b>Side (South)</b>	15	ft. min.	39.5	ft.
<b>Lake (West)</b>	75	ft. min.	140+	ft.
<b>BUILDING HEIGHT:</b>	35	ft. max	7.3	ft.

### COMMENTS:

1. The applicant proposes to place a 6-person modular sauna structure on the lakeside of the primary dwelling.
2. The footprint of the sauna structure is approximately 45 square feet
3. The structure's exterior sheathing is constructed of wood-tone materials. The lakeside elevation is mostly glass.
4. "As seen from the lake" color renderings are provided in your packets
5. Proposed location has been shown on the site plan in the packets.
6. This structure meets the requirements of 6.5(4)(a)(i) because it is greater than 75' from the OHWM.
7. The proposed detached accessory structure is over one hundred (100) feet to any existing single-family structure on an adjoining lot which complies with section Sec. 6.5(c)(i).

8. A building permit is required from the Building Inspector prior to start of construction.

c: Dan Neumer, Administrator  
Deanna Braunschweig, Clerk  
Paul Launer, Lake Country Inspections  
Katherine Quadracci-Flores, Owner

# QUADRACCI - FLORES

## MODULAR SAUNA ADDITION

6067 STATE ROAD 83, VILLAGE OF CHENEQUA, WI 53029

vetter.

161 south first street, suite 110  
milwaukee, wisconsin 53204  
414.223.3388 phone  
www.vetterarchitects.com



CONCEPT RENDERING



CONCEPT RENDERING



AERIAL MAP

### PROJECT INFORMATION

QUADRACCI - FLORES: MODULAR SAUNA ADDITION  
6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI 53029

DESCRIPTION: ADDITION OF A MODULAR SAUNA  
TO THE LANDSCAPE.

PARCEL SIZE: 2.8928 ACRES / 126,010sf

BUILDING CODE: WISCONSIN UDC /  
VILLAGE OF CHENEQUA

TOTAL SAUNA AREA: **46.3sf**

### PROJECT TEAM

**OWNER:**  
**QUADRACCI FLORES**  
6067 N. HWY 83  
CHENEQUA, WI 53029

**SURVEYOR:**  
**SURVEYING ASSOCIATES INC**  
2554 N 100th St.  
WAUWATOSA, WI 53226  
414.257.2212

**ARCHITECT:**  
**VETTER ARCHITECTS**  
161 S. FIRST STREET, STE 110  
MILWAUKEE, WI 53204  
414.223.3388

**GENERAL CONTRACTOR:**  
**TRUE INC.**  
Mike Morrison  
262.443.4713

**QUADRACCI-FLORES**  
MODULAR  
SAUNA ADDITION

6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI

### SHEET INDEX

A0.0 COVER SHEET  
A0.1 EXISTING CONDITION PHOTOS  
A0.2 PROPOSED MATERIAL SELECTIONS  
A0.3 PROPOSED DESIGN RENDERINGS

SURVEY

A1.0 SITE PLAN  
L1.0 LANDSCAPE PLAN

ISSUE DATE  
PLAN REVIEW 04.15.24

APRIL 15, 2024

COVER SHEET  
**A0.0**

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CONSTRUCTION PHOTO LOOKING SOUTHEAST - 03.13.24



EXISTING CONDITION PHOTO LOOKING SOUTHEAST - 08.07.23



CONSTRUCTION PHOTO LOOKING SOUTHEAST - 03.13.24



EXISTING CONDITION PHOTO LOOKING EAST - 11.09.22

**QUADRACCI-FLORES**  
MODULAR  
SAUNA ADDITION

6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI

ISSUE DATE  
PLAN REVIEW 04.15.24

APRIL 15, 2024

EXISTING  
CONDITION PHOTOS

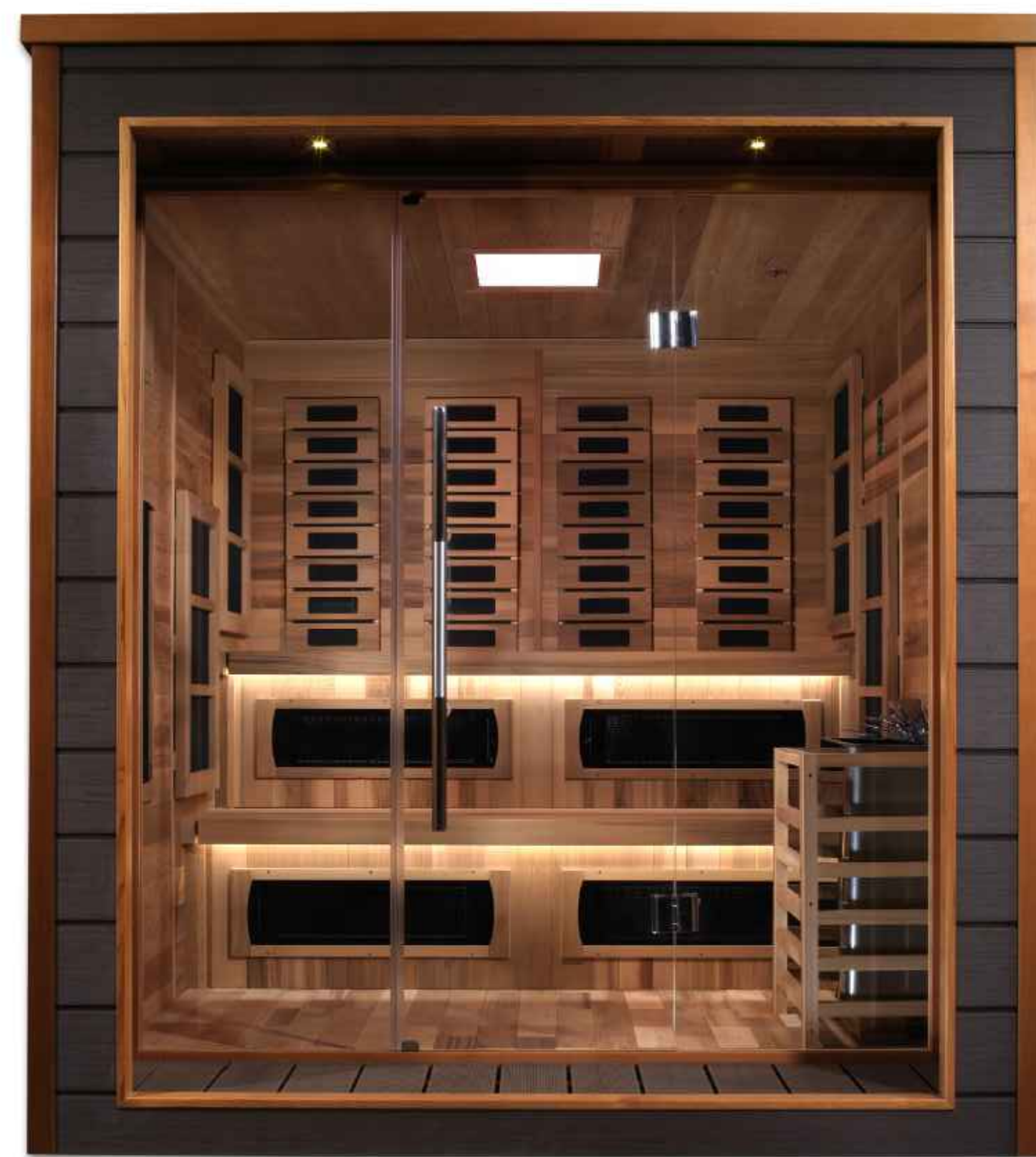
**A0.1**

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## MODULAR SAUNA SPECIFICATIONS

### GOLDEN DESIGNS KARLSTAD 6 PERSON OUTDOOR - INDOOR PURETECH HYBRID FULL SPECTRUM SAUNA

Capacity	6 person
Use	Outdoor   Indoor
Exterior and Interior	All Weather Exterior with all Natural Canadian Red Cedar Interior
Lighting System	Interior Chromotherapy lighting system (Oversize)
Backrest Lighting	Interior backrest with accent white lighting system
Door	Clear Tempered glass door
Accessories	Sandglass, thermometer, bucket, and scoop
Temperature Range	Full Spectrum IR: Total 6 IR Emitters, 2 Carbon PureTech™ Near Zero EMF Heating Panels and 4 Near Infrared Heating Elements
Stove	Harvia "WALL" Stove 8KW Traditional Sauna Stove with Built in Controls
Electrical Service	40AMP / 240V (Please consult a certified electrician.)
Assembled Dimensions Exterior (W x D x H)	79.2" x 84.3" x 88.3"
Assembled Dimensions Interior (W x D x H)	75" x 67.2" x 75"



QUADRACCI-FLORES  
MODULAR  
SAUNA ADDITION

6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI

ISSUE DATE  
PLAN REVIEW 04.15.24

APRIL 15, 2024

SAUNA  
SPECIFICATION  
A0.2



PROPOSED DESIGN RENDERING LOOKING SOUTHWEST



PROPOSED DESIGN RENDERING LOOKING SOUTH



PROPOSED DESIGN RENDERING LOOKING SOUTHEAST



PROPOSED DESIGN RENDERING LOOKING EAST

**QUADRACCI-FLORES**  
MODULAR  
SAUNA ADDITION

6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI

ISSUE DATE  
PLAN REVIEW 04.15.24

APRIL 15, 2024

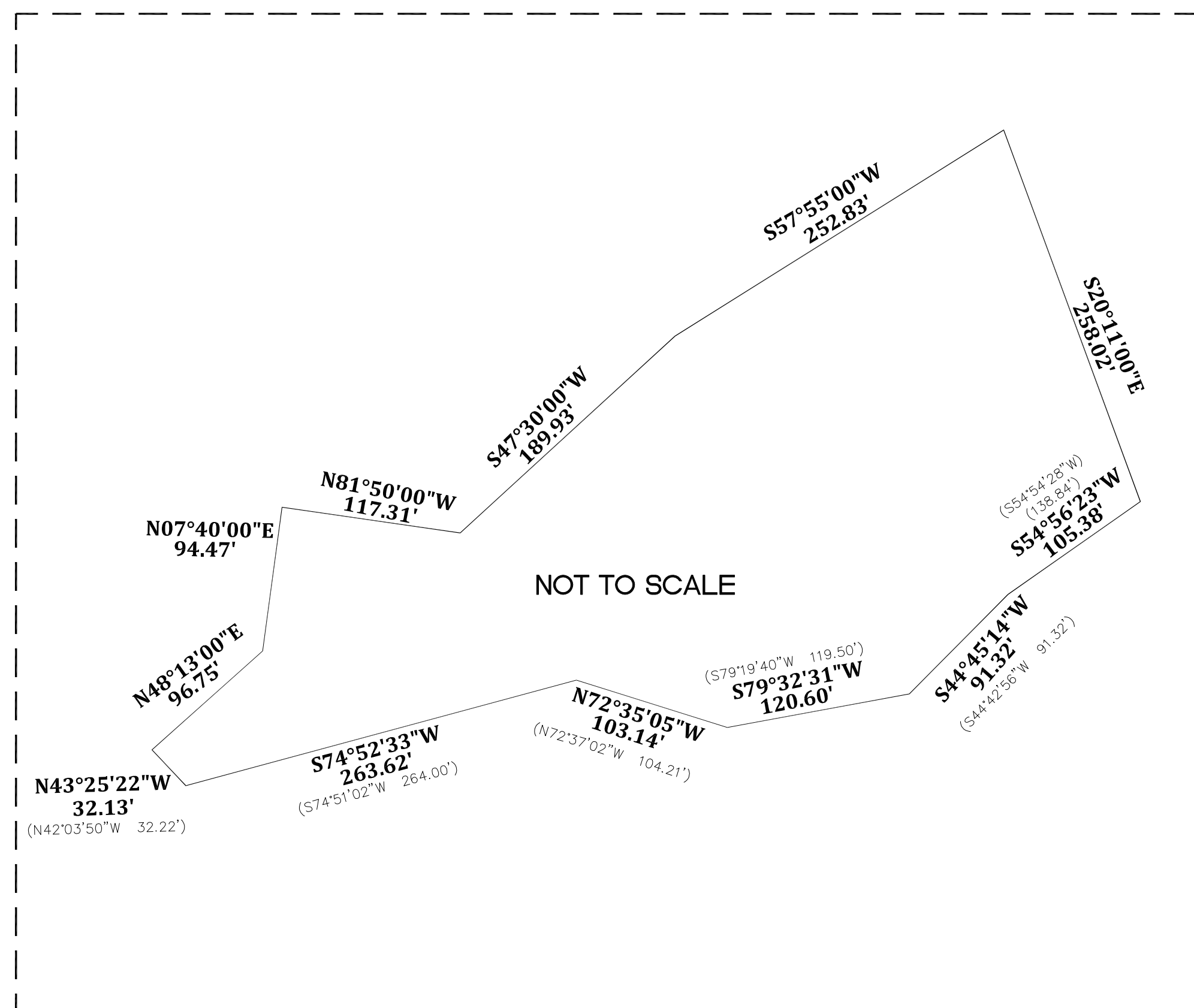
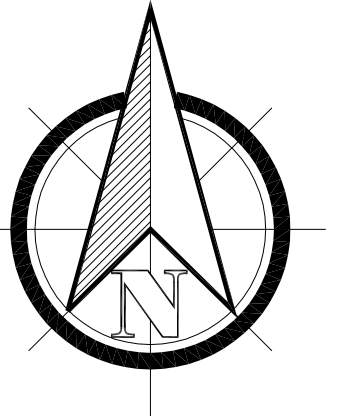
PROPOSED DESIGN  
RENDERINGS  
**A0.3**

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**PLAT OF SURVEY**

Lot 1 Certified Survey Map recorded as Document No. 60134, excepting there from all that part of said Lot 1 conveyed to John F. Probst and Marie I Probst, his wife in deed recorded as Document No. 873682; but also including that part of Lot 2 of said Certified Survey Map as described in the Deed to Harry V. Quadracci and Elizabeth E. Quadracci, his wife, recorded as Document No. 873683; all being a part of Section 28, Town 8 North, Range 18 East, Village of Chenequa, County of Waukesha, State of Wisconsin.

**Address:** 6067 N. HWY 83



**PINE LAKE**  
 WATER ELEVATION: 901.9'  
 8/25/16

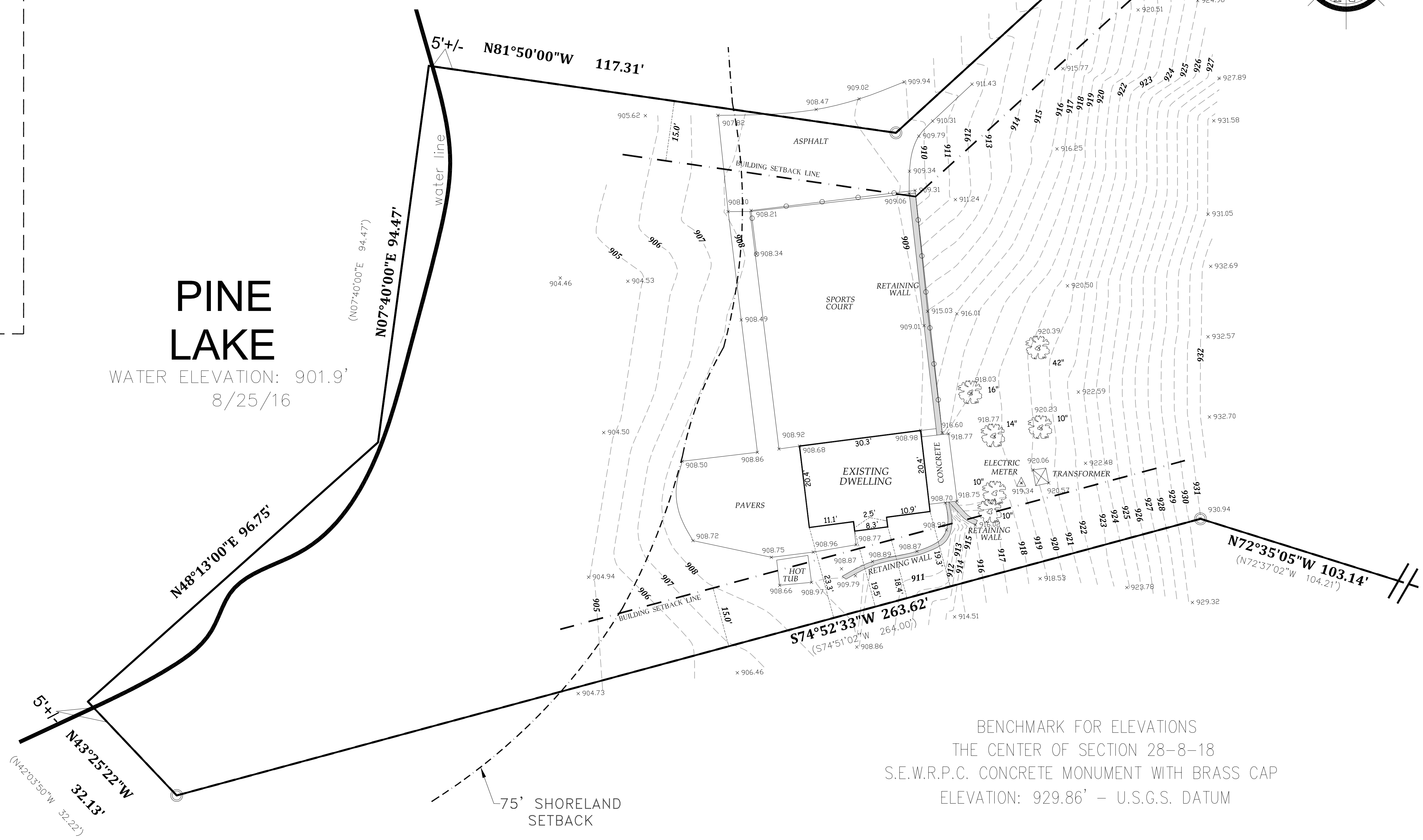
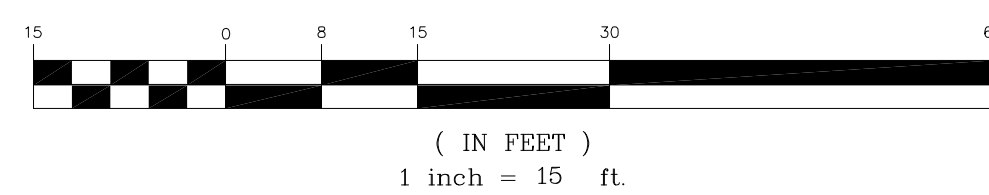
**NOTES**

- SURVEY UPDATED 02/24/23 TO SHOW IMPROVEMENTS AND TOPOGRAPHY IN "PROJECT AREA" ONLY. NO MONUMENTATION SET.
- NOTE: ALL TREE SIZES ARE APPROXIMATE AT CHEST LEVEL
- CERTIFIED SURVEY MAP DOES NOT CLOSE BY 43.26'
- LOT 1 OF CERTIFIED SURVEY MAP DOES NOT CLOSE BY 15.26'
- DEED FOR TAX KEY #CHQV 0398 989 DOES NOT CLOSE BY 0.89'
- ALL DEEDS HAVE SECOND CALLS TO MONUMENTATION.
- THIS SURVEY IS BASED ON EXISTING MONUMENTATION.

**LEGEND**

- - Denotes Found Iron Stake
- △ - Denotes Existing Set Iron Stake
- 908.00 - Denotes Existing Gas Meter
- 905- - Denotes Existing Electric Meter

**GRAPHIC SCALE**



BENCHMARK FOR ELEVATIONS  
 THE CENTER OF SECTION 28-8-18  
 S.E.W.R.P.C. CONCRETE MONUMENT WITH BRASS CAP  
 ELEVATION: 929.86' - U.S.G.S. DATUM



NOTE: THIS IS NOT AN ORIGINAL SURVEY UNLESS THIS SEAL IS RED.

*Marc C. Passarelli*  
 WISCONSIN REGISTERED LAND SURVEYOR

REVISION NO.	DESCRIPTION	DATE	BY	FIELD WORK BY	DATE
1	Topo Added	2/26/23	MWW	MWW/JE	02/07/23
2	Setback Lines Added	2/28/23	MCP	MWW	02/10/23
3	75' Shoreline Setback	8/08/23	MWW		
				APPROVED BY	DATE
				CADFILE XREF LMAN	

**BOUNDARY / TOPOGRAPHIC SURVEY**  
**QUADRACCI**  
 6067 N. HWY 83  
 HARTLAND, WI. 53029

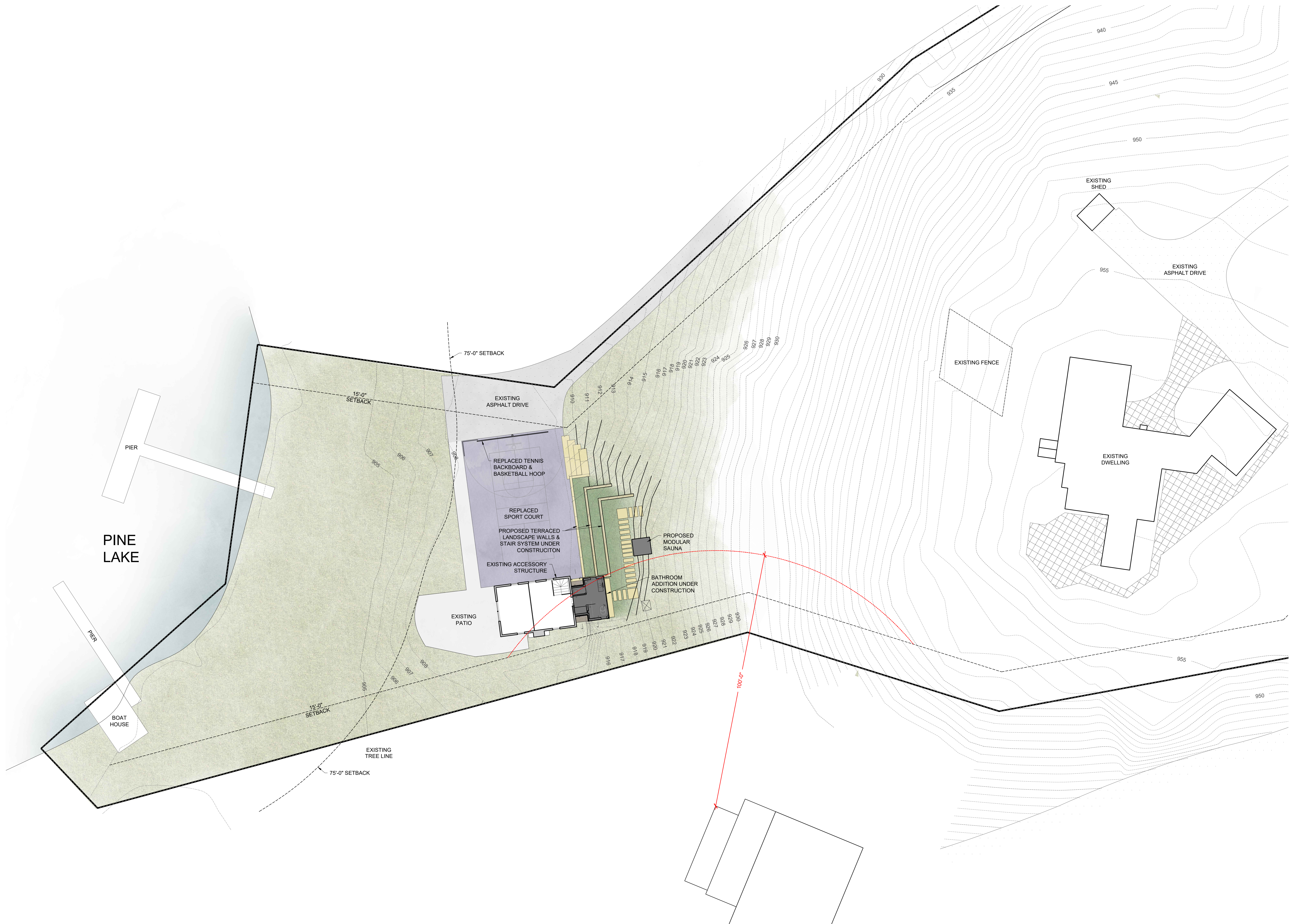
"THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO."

**SURVEYING ASSOCIATES, INC.**  
 MEMBER OF WISCONSIN SOCIETY OF LAND SURVEYORS & NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS

sai@wirr.com  
 2554 N. 100TH STREET  
 P.O. BOX 26596  
 WAUWATOSA, WISCONSIN 53226  
 (414) 257-2212 FAX: (414) 257-2443

MARC C. PASSARELLI P.L.S.

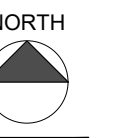
SAI PROJECT NUMBER	36451
PROJECT SCALE	1" = 15'
SHEET NUMBER	1 of 1



**QUADRACCI-FLORES**  
MODULAR  
SAUNA ADDITION

6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI

ISSUE	DATE
PLAN REVIEW	04.15.24

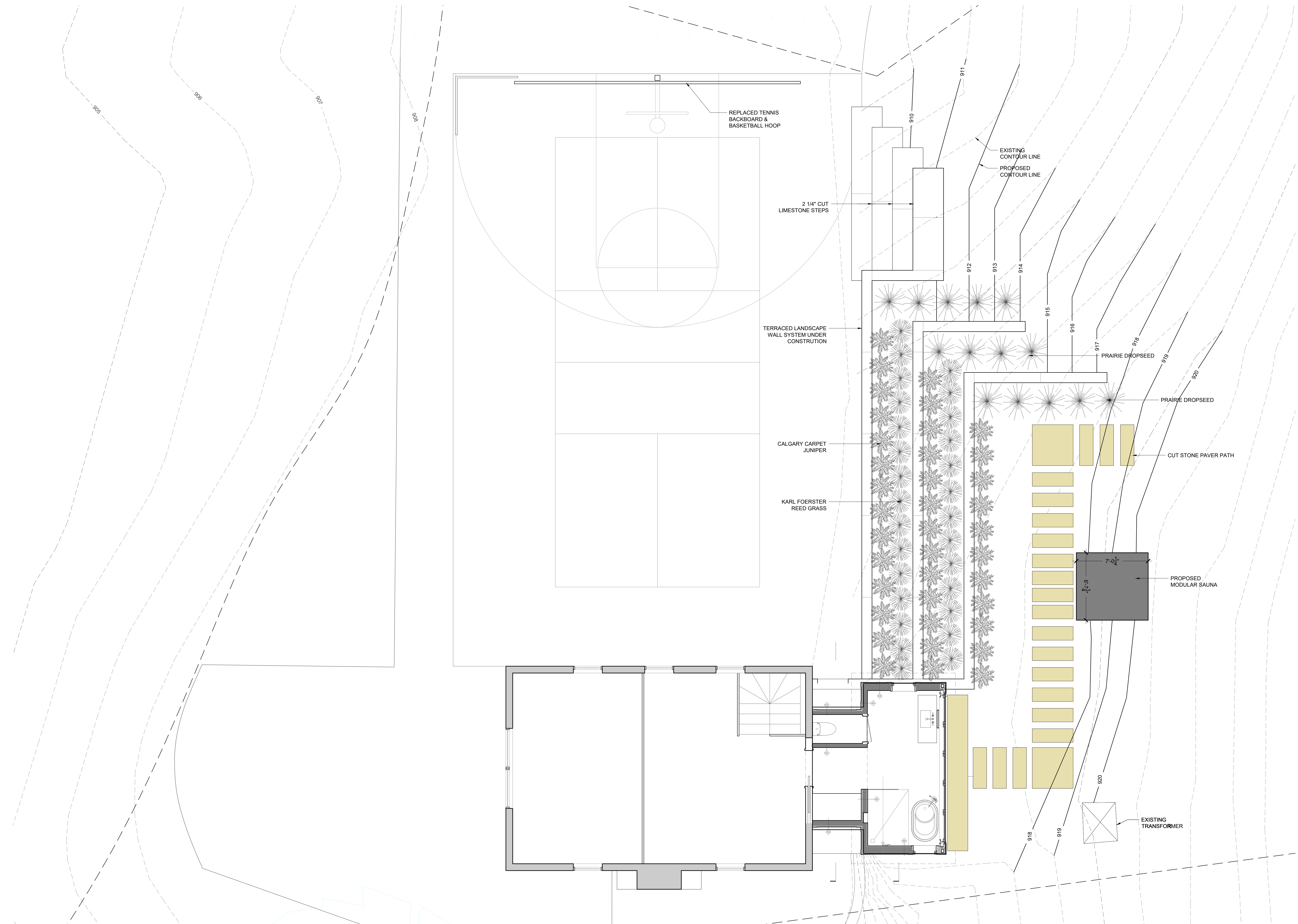


APRIL 15, 2024

SITE PLAN  
SCALE: 1/16" = 1'-0"

**A1.0**





**QUADRACCI-FLORES**  
MODULAR  
SAUNA ADDITION

6067 STATE ROAD 83  
VILLAGE OF CHENEQUA, WI

ISSUE	DATE
PLAN REVIEW	04.15.24



APRIL 15, 2024

LANDSCAPE PLAN  
SCALE: 1/4"=1'-0"

**L1.0**



## STAFF REVIEW

**Date:** May 6th, 2024

**Meeting Date & Time:** Monday, May 13<sup>th</sup> 2024 at 6:00 p.m.

**To:** Plan Commission, Village of Chenequa

**From:** Planning Department

**Subject:** Site Plan Review

**Contractor:** Austin Plumbing

**Owner:** Denise Spusta

**Location:** 6321 N Oakland Hills Road

**Project Description:** Proposed Solar Panels

**Zoning District:** Residence District

	REQUIRED RES. DISTRICT		PROPOSED PROJECT	
<b>LOT AREA:</b>	5	Acres	5	Acres
<b>LOT WIDTH: AVERAGE</b>	200	L.F. min.	375	L.F.

### COMMENTS:

1. The applicant proposes to install two roof mounted solar arrays on the existing dwelling
    - a. Page three of the packet shows proposed panel locations
      - i. A 27-panel array is proposed to be mounted over the garage and facing southward
      - ii. A 17-panel array is proposed to be mounted on the house facing westward.
  2. The proposed panels will not result in an increase in structure height
  3. The proposed panels are pure black as shown on page 9 of the included packet.
  4. This is a legal conforming lot
- c: Dan Neumer, Administrator  
Deanna Braunschweig, Clerk  
Paul Launer, Lake Country Inspections  
Denise Spusta, Owner  
Cody Lincoln, Zoning Administrator

# SPUSTA RESIDENCE

## NEW PHOTOVOLTAIC & ENERGY STORAGE SYSTEM

### PROJECT - 18.040 kW DC / 16.104 kW AC

#### PROJECT INFORMATION

##### PROPERTY OWNER

NAME: DENISE SPUSTA  
PHONE: (608) 575-5323

##### CONTRACTOR

NAME: DARREN KALAL  
PHONE: (262) 315-5745

##### DESIGN SPECIFICATIONS

OCCUPANCY: R-3  
CONSTRUCTION TYPE: SINGLE FAMILY RESIDENCE  
ZONING: RESIDENTIAL  
GROUND SNOW LOAD: 30 PSF  
WIND EXPOSURE: C  
WIND SPEED: 115 MPH

##### APPLICABLE CODES & STANDARDS

2015 INTERNATIONAL BUILDING CODE (IBC)  
2015 INTERNATIONAL FIRE CODE (IFC)  
2015 INTERNATIONAL MECHANICAL CODE (IMC)  
2015 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)  
2017 NATIONAL ELECTRICAL CODE (NEC)

##### SCOPE OF WORK

SYSTEM SIZE: STC: 44 X 410W = 18.040kW  
PTC: 44 X 392.7W = 17.279kW  
(44) REC SOLAR REC ALPHA REC410AA PURE (410W) SOLAR MODULES  
(44) ENPHASE IQ8A-72-2-USMICROINVERTERS  
(1) EATON DG225NRK 400A FUSED AC DISCONNECT WITH 200A FUSES  
(1) EATON DG223NRB 100A FUSED AC DISCONNECT WITH 80A FUSES  
(6) ENPHASE IQ BATTERY-5P  
(1) ENPHASE IQ SYSTEM CONTROLLER 3/3G  
(1) 200A PV LOAD CENTER  
(1) ROOF TOP COMBINER BOX  
(1) ENPHASE IQ LOAD CONTROLLER  
(1) RAPID SHUTDOWN DEVICE  
(1) ENPHASE IQ ENVOY COMMUNICATION GATEWAY

MSP UPGRADE: NO  
MAIN BREAKER DERATE: NO

##### RACKING & MOUNTING

PV ATTACHMENT TYPE: IRONRIDGE HALO ULTRAGRIP FOR COMP SHINGLE ROOF

RACKING TYPE: IRONRIDGE XR100 RAIL- ROOF MOUNT RACKING HARDWARE

SHEET #	SHEET NAME
T-1	COVER SHEET
T-2	PLAN NOTES
PV-1	SITE PLAN LAYOUT
PV-2	ATTACHMENT DETAILS
PV-3	MOUNTING DETAILS
E-1	ELECTRICAL CALCULATION
E-1.1	ELECTRICAL DIAGRAM
E-2	WARNING LABELS
S-1	SPEC SHEET
S-2	SPEC SHEET
S-3	SPEC SHEET
S-4	SPEC SHEET
S-5	SPEC SHEET
S-6	SPEC SHEET
S-7	SPEC SHEET

**CONTRACTOR**

**AUSTIN PLUMBING  
HEATING AIR & ELECTRIC**

**ADDRESS:**  
530 NORTON DRIVE  
HARTLAND, WI 53029  
UNITED STATES  
darren@teamaustin.com  
License#: 172292

**DESIGNER:**  
GREENWORLD  
RENEWABLES

**DESIGNER SIGNATURE:**

**SPUSTA  
RESIDENCE**

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

**SHEET  
T-1**

**COORDINATES:**  
43.133472, -88.393173

**AERIAL VIEW**



**1.1. PROJECT NOTES:**

- 1.2. THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) ARTICLE 690, ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.
- 1.3. THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION
- 1.4. GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS INTEGRATED WITH THE INVERTER IN ACCORDANCE WITH NEC 690.5(A)
- 1.5. ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4 & NEC 690.60: PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE INVERTERS: UL 1741 CERTIFIED, IEEE 1547, 929, 519 COMBINER BOX(ES): UL 1703 OR UL 1741 ACCESSORY
- 1.6. MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.
- 1.7. ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D), SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].
- 1.8. ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

**1.9. SCOPE OF WORK:**

- 1.10. PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

**1.11. WORK INCLUDES:**

- 1.12. PV ROOF ATTACHMENTS - IRONRIDGE HALO ULTRAGRIP FOR COMP SHINGLE ROOF
- 1.13. PV RACKING SYSTEM INSTALLATION - IRONRIDGE XR100 RAIL ROOF MOUNT RACKING HARDWARE
- 1.14. PV MODULE AND INVERTER INSTALLATION - REC SOLAR REC ALPHA REC410AA PURE (410W) SOLAR MODULES / ENPHASE IQ8A-72-2-US MICROINVERTERS
- 1.15. PV EQUIPMENT GROUNDING
- 1.16. PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
- 1.17. PV LOAD CENTERS (IF INCLUDED)
- 1.18. PV METERING/MONITORING (IF INCLUDED)
- 1.19. PV DISCONNECTS
- 1.20. PV GROUNDING ELECTRODE & BONDING TO (E) GEC
- 1.21. PV FINAL COMMISSIONING
- 1.22. (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV
- 1.23. SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE

**1.24. SITE NOTES:**

- 1.25. A LADDER WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- 1.26. THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH 30KWH STORAGE BATTERIES.
- 1.27. THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- 1.28. PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26.
- 1.29. ROOF COVERINGS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVES TO PROTECT THE BUILDING OR STRUCTURE.

**1.30. EQUIPMENT LOCATIONS:**

- 1.31. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.
- 1.32. WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A),(C) AND NEC TABLES 310.15 (B)(2)(A) AND 310.15 (B)(3)(C)
- 1.33. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
- 1.34. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
- 1.35. ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
- 1.36. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

**1.37. STRUCTURAL NOTES:**

- 1.38. RACKING SYSTEM
- 1.39. PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND
- 1.40. A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, ACCORDING TO RAIL MANUFACTURER'S INSTRUCTIONS.
- 1.41. JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS' SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED SEALED PER LOCAL REQUIREMENTS.
- 1.42. ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED WITH APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.
- 1.43. ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.
- 1.44. WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

**1.45. WIRING & CONDUIT NOTES:**

- 1.46. ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING. CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
- 1.47. VOLTAGE DROP LIMITED TO 2%.
- 1.48. DC WIRING LIMITED TO MODULE FOOTPRINT. OPTIMIZER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
- 1.49. AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK PHASE B OR L2- RED, OR OTHER CONVENTION IF THREE PHASE PHASE C OR L3- BLUE, YELLOW, ORANGE\*\*, OR OTHER CONVENTION NEUTRAL- WHITE OR GREY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH HIGHER VOLTAGE TO BE MARKED ORANGE [NEC 110.15

**1.51. GROUNDING NOTES:**

- 1.52. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.
- 1.53. PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC TABLE 250.122.
- 1.54. METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).
- 1.55. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45 AND INVERTER MANUFACTURER'S INSTRUCTIONS.

- 1.56. EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURERS' INSTALLATION REQUIREMENTS.
- 1.57. THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.
- 1.58. GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]
- 1.59. THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250, NEC 690.47 AND AHJ.
- 1.60. GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.5 IN GENERAL AND NEC 690.5 (A)(1) SPECIFICALLY.

**1.61. DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:**

- 1.62. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).
- 1.63. DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
- 1.64. RAPID SHUTDOWN OF ENERGIZED CONDUCTORS BEYOND 10 FT OF PV ARRAY OR 5 FT INSIDE A BUILDING WITHIN 10 SECONDS. CONTROLLED CONDUCTORS ≤30V AND ≤240VA [NEC 690.12]. LOCATION OF LABEL ACCORDING TO AHJ
- 1.65. ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.
- 1.66. OPTIMIZER BRANCHES CONNECTED TO A SINGLE BREAKER OR GROUPED FUSES IN ACCORDANCE WITH NEC 110.3(B).
- 1.67. IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.

**1.68. ELECTRICAL INTERCONNECTION NOTES:**

- 1.69. THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF THE BUSBAR RATING.
- 1.70. WHEN THE SUM OF THE PV SOURCES EQUALS >100% OF THE BUSBAR RATING, PV DEDICATED BACKFEED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD.
- 1.71. AT MULTIPLE PV OUTPUT COMBINER PANEL, THE TOTAL RATING OF ALL OVERCURRENT DEVICES SHALL NOT EXCEED THE AMPACITY OF THE BUSBAR. HOWEVER, THE COMBINED OVERCURRENT DEVICE MAY BE EXCLUDED.
- 1.72. SUPPLY-SIDE TAP INTERCONNECTION SHOULD BE WITH SERVICE ENTRANCE CONDUCTORS.
- 1.73. BACKFEEDING BREAKER FOR UTILITY-INTERACTIVE INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING.

**CONTRACTOR**

**AUSTIN PLUMBING HEATING AIR & ELECTRIC**

**ADDRESS:**  
**530 NORTON DRIVE**  
**HARTLAND, WI 53029**  
**UNITED STATES**  
**darren@teamaustin.com**  
**License#: 172292**

**DESIGNER:**  
**GREENWORLD**  
**RENEWABLES**

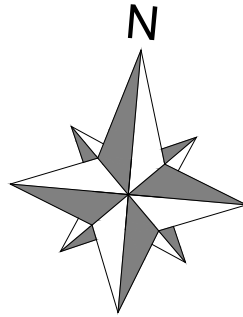
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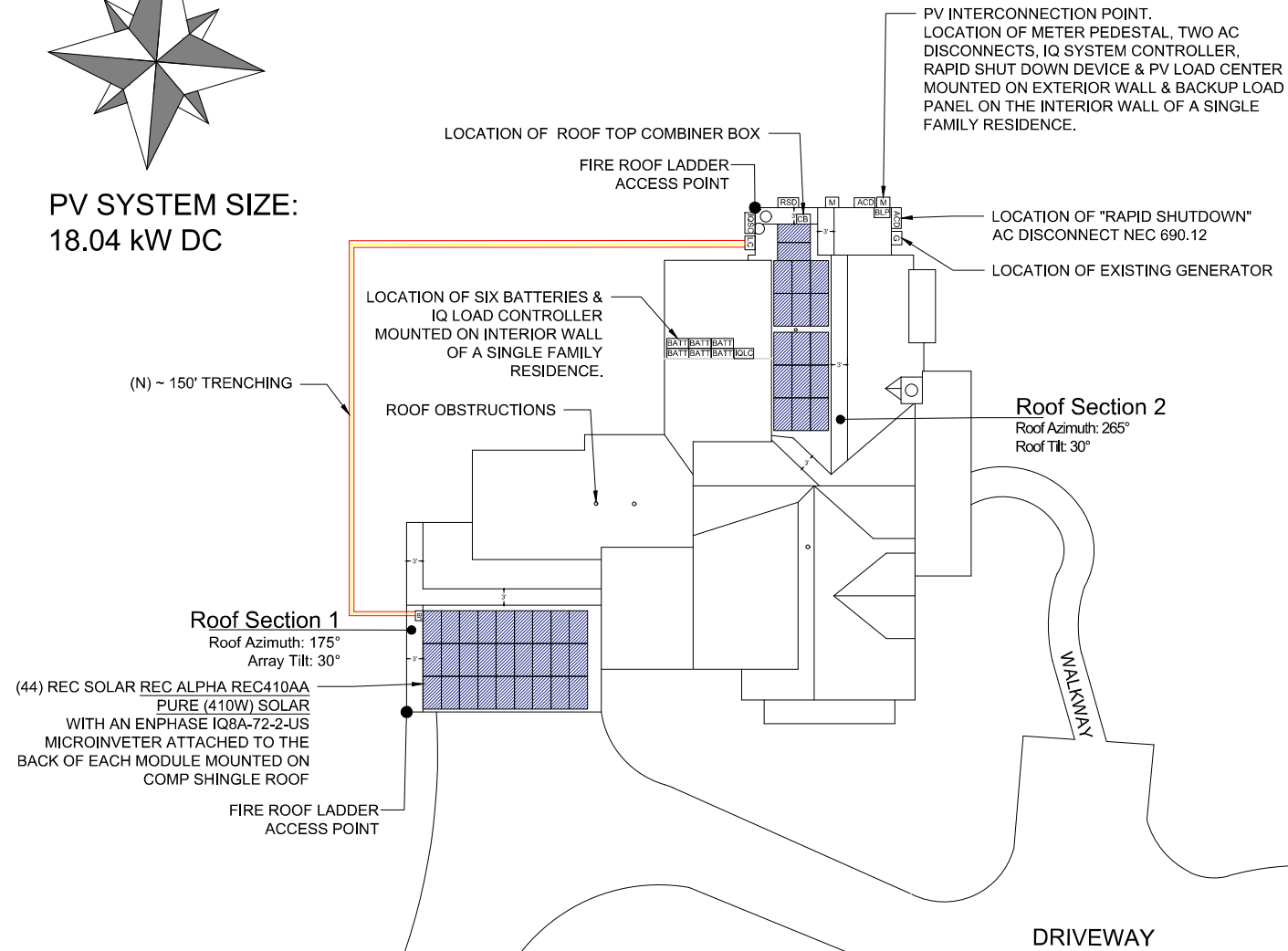
**SPUSTA RESIDENCE**

6321 OAKLAND HILLS RD,  
 NASHOTAH,  
 WI 53058

APN:CHQV0402987  
 DATE:4/11/2024



PV SYSTEM SIZE:  
18.04 kW DC



**CONSTRUCTION NOTES**

1. SOLAR PHOTOVOLTAIC SYSTEM TO BE INSTALLED ON RESIDENTIAL STRUCTURE.
2. THIS PROJECT HAS BEEN DESIGNED IN COMPLIANCE WITH THE IBC SECTION 1609 TO WITHSTAND A BASIC WIND SPEED OF 115 MPH (3 SECOND GUST), WIND EXPOSURE C.
3. THE ROOF MEMBERS ARE 2 "X 4" RAFTERS AT 24" ON CENTER. CONNECTION TO STRUCTURE SHALL NOT BE WITHIN 11" OF NAILING PLATES.
4. THE SOLAR PHOTOVOLTAIC INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
5. ALL CONDUCTORS AND CONDUITS MOUNTED ON ROOF SHALL BE MINIMUM 7/8" ABOVE ROOF SURFACE (INCLUDING CABLES UNDERNEATH MODULES AND RACKING).
6. ROOF ACCESS POINTS SHALL BE PROVIDED PER THE FOLLOWING
  - 6.1. LOCATED IN AREAS NOT REQUIRING PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS DOORS OR WINDOWS.
  - 6.2. LOCATED AT STRONG POINTS OF CONSTRUCTION IN LOCATIONS WHERE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS: TREES, WIRES, OR SIGNS.

**CONTRACTOR**

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**DESIGNER:**  
GREENWORLD  
RENEWABLES

**DESIGNER SIGNATURE:**

**SPUSTA  
RESIDENCE**

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

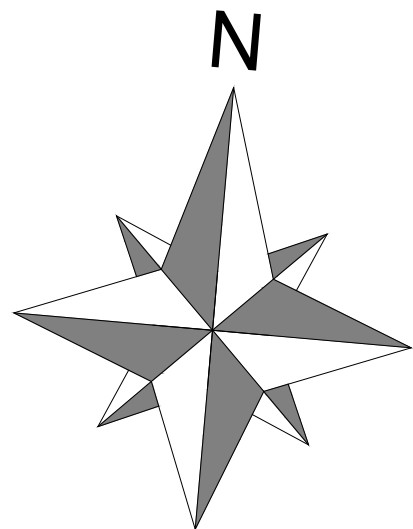
**LEGEND**

	NEW SOLAR PANELS
	METER PEDESTAL
	IQ SYSTEM CONTROLLER 3/3G
	BATTERY
	AC DISCONNECT
	COMBINER BOX
	IQ LOAD CONTROLLER
	GENERATOR
	BACKUP LOAD PANEL
	RAPID SHUTDOWN DEVICE

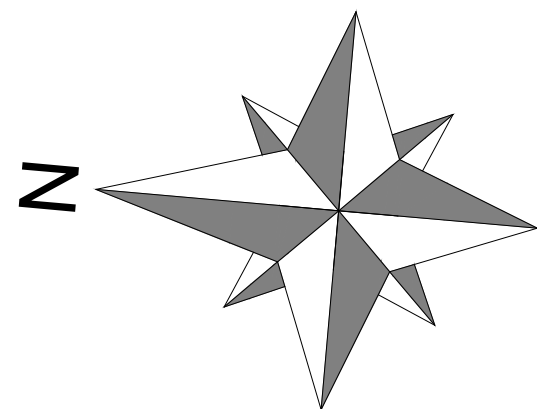
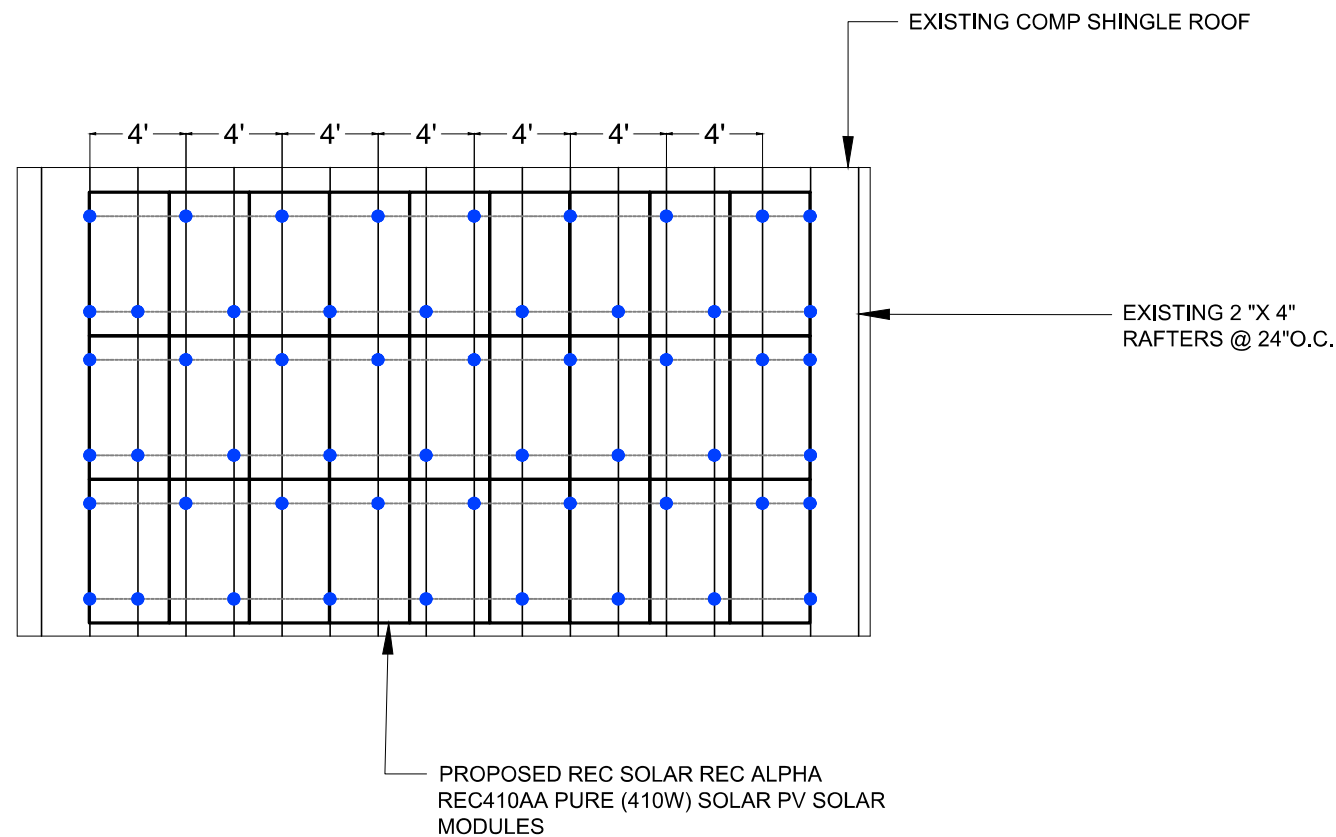
PV SYSTEM SITE PLAN

SCALE: 1/32" = 1'-0"

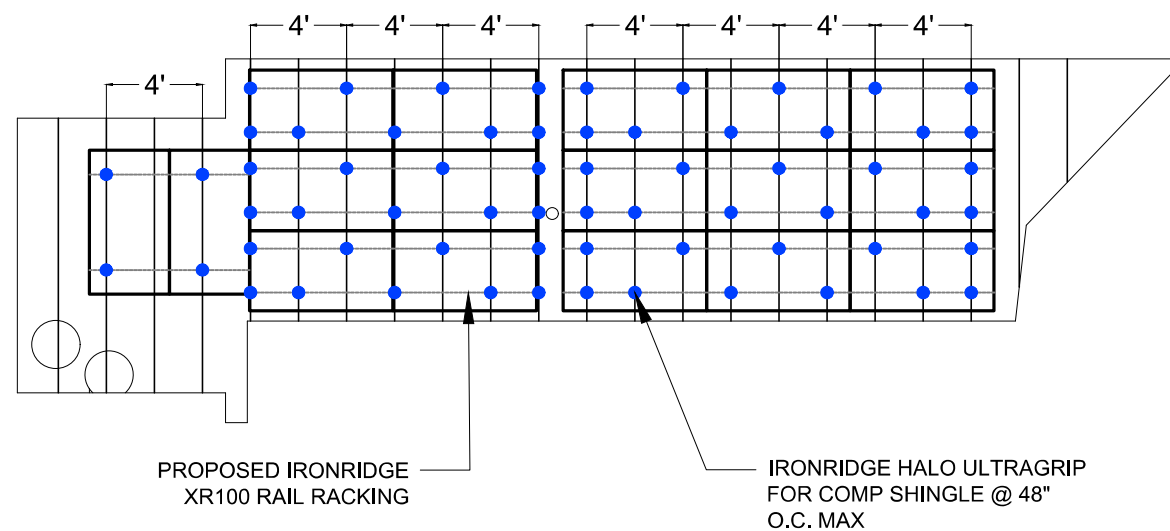
SHEET  
PV-1



**Roof Section 1**  
 Roof Azimuth: 175°  
 Array Tilt: 30°



**Roof Section 2**  
 Roof Azimuth: 265°  
 Roof Tilt: 30°



PV SYSTEM MOUNTING DETAILS

SCALE: 1/8" = 1'-0"

**CONTRACTOR**

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 HEATING AIR & ELECTRIC**

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 darren@teamaustin.com  
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 RENEWABLES

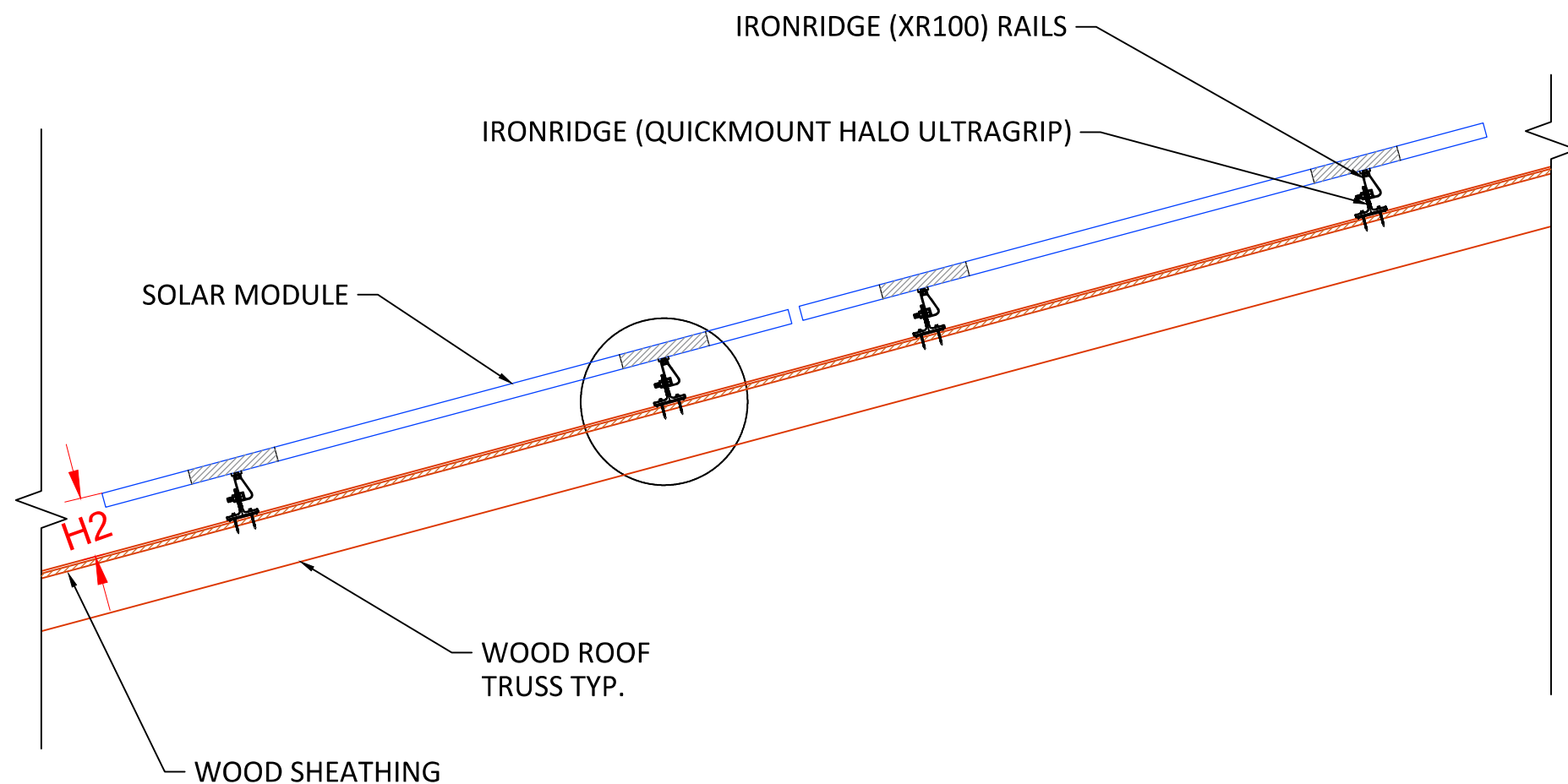
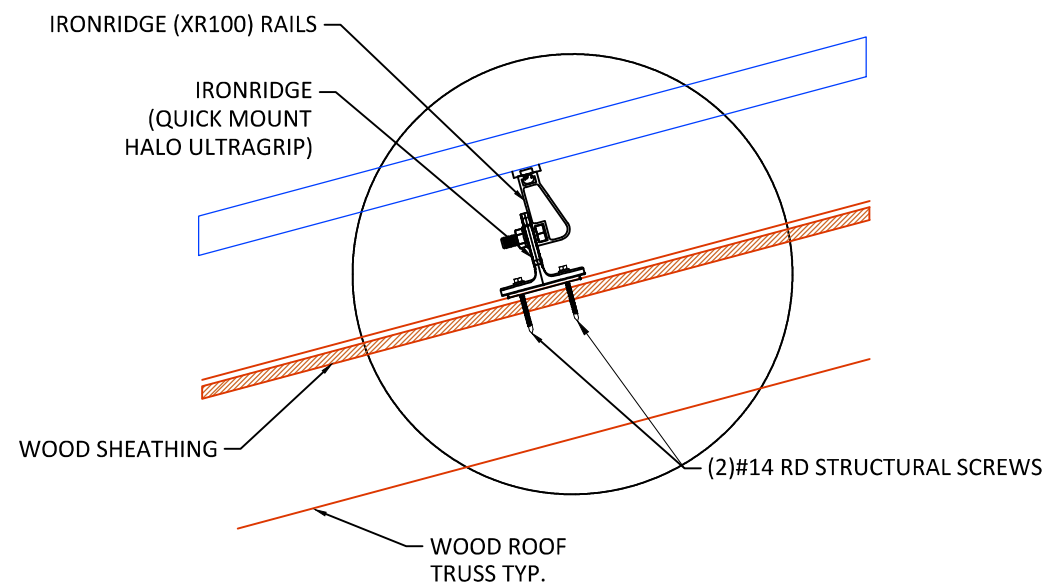
**DESIGNER SIGNATURE:**

**SPUSTA  
 RESIDENCE**

6321 OAKLAND HILLS RD,  
 NASHOTAH,  
 WI 53058

APN:CHQV0402987  
 DATE:4/11/2024

**SHEET  
 PV-2**



1. ROOF MATERIAL: COMP SHINGLE
2. ROOF STRUCTURE: RAFTERS
3. ATTACHMENT TYPE: IRONRIDGE HALO ULTRAGRIP
4. MODULE MANUFACTURER: REC SOLAR
5. MODULE MODEL: REC ALPHA REC410AA PURE (410W) SOLAR
6. MODULE LENGTH: 68.1"
7. MODULE WIDTH: 44"
8. MODULE WEIGHT: 47.4 LBS.
9. SEE SHEET S-1 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: 36"
11. RAFTERS SPACING: 24" O.C.
12. RAFTERS SIZE: 2 "X 4" NOMINAL
13. LAG BOLT DIAMETER: 5/16 IN.
14. LAG BOLT EMBEDMENT: 2.5 IN.
15. TOTAL # OF ATTACHMENTS: 118
16. TOTAL AREA: 915.57 SQ. FT.
17. TOTAL WEIGHT: 2085.60 LBS.
18. WEIGHT PER ATTACHMENT: 17.67 LBS.
19. DISTRIBUTED LOAD: 2.28 PSF
20. MAX. HORIZONTAL STANDOFF: 48 IN.
21. MAX. VERTICAL STANDOFF:  
LANDSCAPE: 26 IN., PORTRAIT: 44 IN.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER AND MODEL  
(OR EQUIV.): IRONRIDGE XR100 RAIL
24. RAIL WEIGHT: 0.436 PLF.
25. MAX. RAFTERS SPAN: 12 FT.
26. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

**CONTRACTOR**

**AUSTIN PLUMBING  
HEATING AIR & ELECTRIC**

**ADDRESS:  
530 NORTON DRIVE  
HARTLAND, WI 53029  
UNITED STATES  
darren@teamaustin.com  
License#: 172292**

**DESIGNER:  
GREENWORLD  
RENEWABLES**


**DESIGNER SIGNATURE:**

**SPUSTA  
RESIDENCE**

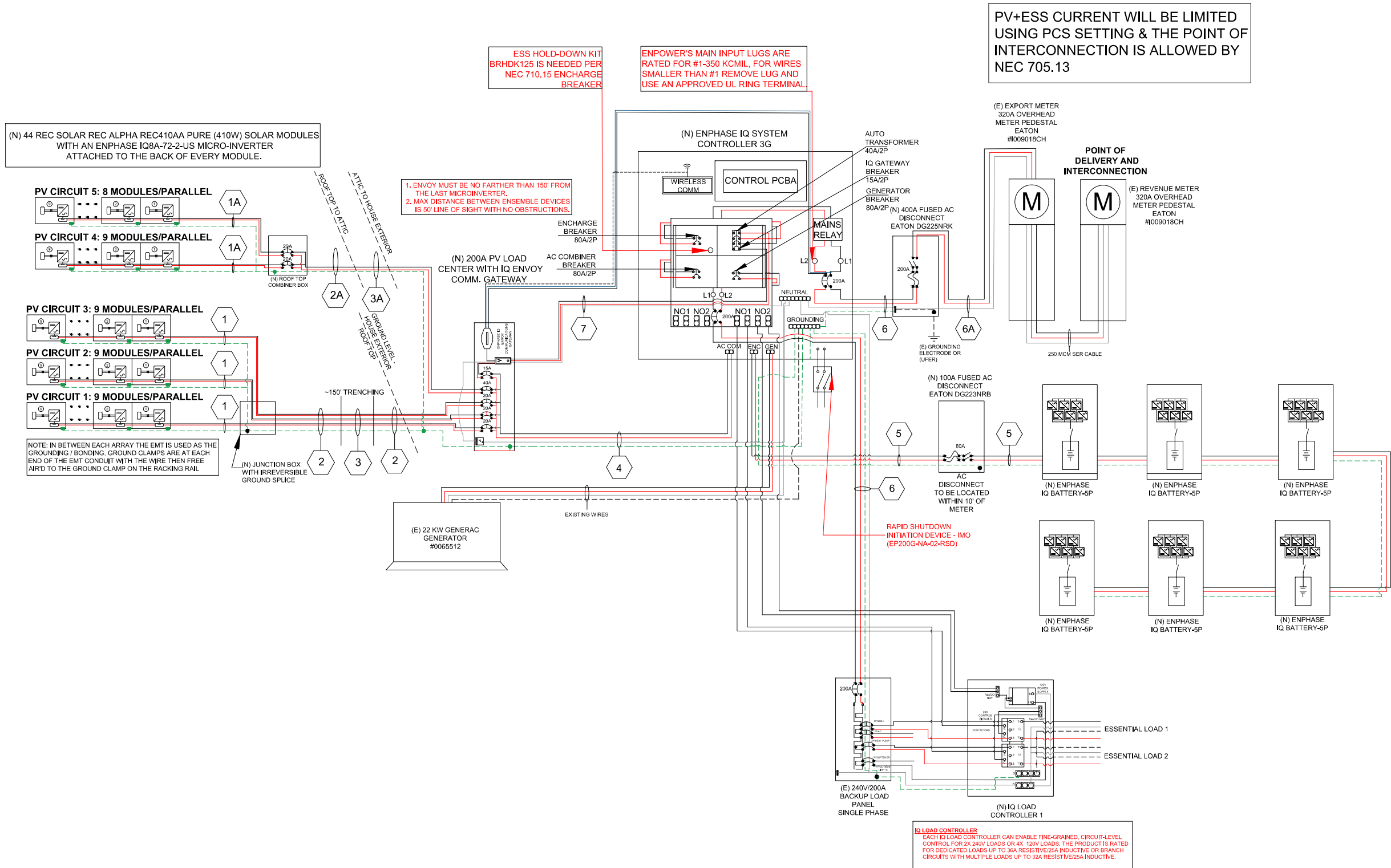
6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

**SHEET  
PV-3**

PV Module Ratings @ STC					SYSTEM SUMMARY					Inverter Ratings		
Module Make/Model	REC SOLAR REC ALPHA REC410AA PURE (410W) SOLAR MODULE				INVERTERS PER BRANCH	9	9	9	9	8	Inverter Make/Model	ENPHASE IQ8A-72-2-US
					MAX AC CURRENT	1.45A	13.05A	13.05A	13.05A	11.6A		
					MAX AC OUTPUT POWER	3294W	3294W	3294W	3294W	2928W		
Max Power-Point Current (Imp)	9.72A				ARRAY STC POWER	18040W					Max DC Volt Rating	60V
Max Power-Point Voltage (Vmp)	42.2V				ARRAY PTC POWER	17279W					Peak Output Power	366W
Open-Circuit Voltage (Voc)	49.4V				MAX AC CURRENT	63.80A					Max Nominal Voltage	240V
Short-Circuit Current (Isc)	10.42A				MAX AC POWER	16104W					Max AC Current	1.45A
Max Series Fuse (OCPD)	25A				DERATED (CEC) AC POWER	16846.83W					Max OCPD Rating	20A
Nominal Maximum Power at STC (Pmax)	410W									DESIGN TEMPERATURES		
Maximum System Voltage	1000V									ASHRAE EXTREME LOW	-24°C	
Voc Temperature Coefficient	-0.24%/°C									ASHRAE 2% HIGH	32°C	
Conduit and Conductor Schedule ~(75°C Copper column)						BATTERY SPECIFICATION						
Tag	Description	Wire Gauge	# of Conductors	Conduit Type	Conduit Size	MODEL NUMBER	ENPHASE ENERGY INC. IQBATTERY-5P-1P-NA [240V] [SI1-SB]					
1	Enphase Q cable - THWN-2	10 AWG	3	N/A - Free Air	N/A - Free Air	TOTAL CAPACITY	5KWH					
1	Bare Copper Ground (EGC/GEC)	6 AWG	1	N/A - Free Air	N/A - Free Air	USABLE CAPACITY	5KWH					
2	THWN-2	10 AWG	6	EMT	3/4"	OUTPUT CURRENT	16A					
2	THWN-2 - Ground	10 AWG	1	EMT	3/4"	NOMINAL DC VOLTAGE	76.8V					
3	THWN-2	12 AWG	3	PVC	1"	CONTRACTOR						
3	THWN-2 - Ground	12 AWG	1	PVC	1"	AUSTIN PLUMBING HEATING AIR & ELECTRIC						
1A	Enphase Q cable - THWN-2	10 AWG	2	EMT	3/4"	ADDRESS: 530 NORTON DRIVE HARTLAND, WI 53029 UNITED STATES darren@teamaustin.com License#: 172292						
1A	Bare Copper Ground (EGC/GEC)	6 AWG	1	EMT	3/4"	DESIGNER: GREENWORLD RENEWABLES						
2A	THWN-2	10/2	2	ROMEX		DESIGNER SIGNATURE: 						
2A	THWN-2 - Ground	10/2	1	ROMEX		SPUSTA RESIDENCE						
3A	THWN-2	10 AWG	2	EMT	3/4"	6321 OAKLAND HILLS RD, NASHOTAH, WI 53058						
3A	THWN-2 - Ground	10 AWG	1	EMT	3/4"	APN:CHQV0402987 DATE:4/11/2024						
4	THWN-2	4 AWG	3	EMT	1"	SHEET E-1						
4	THWN-2 - Ground	8 AWG	1	EMT	1"							
5	THWN-2	4 AWG	2	EMT	1"							
5	THWN-2	8 AWG	1	EMT	1"							
6	THWN-2	3/0 AWG	3	EMT	2"							
6	THWN-2	6 AWG	1	EMT	2"							
6A	THWN-2	3/0 AWG	3	EMT	2"							
7	THWN-2	10 AWG	3	EMT	3/4"							





PV+ESS CURRENT WILL BE LIMITED USING PCS SETTING & THE POINT OF INTERCONNECTION IS ALLOWED BY NEC 705.13

ESS HOLD-DOWN KIT BRHDK125 IS NEEDED PER NEC 710.15 ENCHARGE BREAKER

ENPOWER'S MAIN INPUT LUGS ARE RATED FOR #1-350 KCML. FOR WIRES SMALLER THAN #1 REMOVE LUG AND USE AN APPROVED UL RING TERMINAL

1. ENVOY MUST BE NO FARTHER THAN 150' FROM THE LAST MICROINVERTER.  
2. MAX DISTANCE BETWEEN ENSEMBLE DEVICES IS 50' LINE OF SIGHT WITH NO OBSTRUCTIONS.

**IQ LOAD CONTROLLER**  
EACH IQ LOAD CONTROLLER CAN ENABLE FINE-GRAINED, CIRCUIT-LEVEL CONTROL FOR 2X 240V LOADS OR 4X 120V LOADS. THE PRODUCT IS RATED FOR DEDICATED LOADS UP TO 36A RESISTIVE/25A INDUCTIVE OR BRANCH CIRCUITS WITH MULTIPLE LOADS UP TO 32A RESISTIVE/25A INDUCTIVE.

**CONTRACTOR**

**AUSTIN PLUMBING HEATING AIR & ELECTRIC**

**ADDRESS:**  
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UNITED STATES  
darren@teamaustin.com  
License#: 172292

**DESIGNER:**  
GREENWORLD RENEWABLES

**DESIGNER SIGNATURE:**  
*Chow*

**SPUSTA RESIDENCE**

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

**⚠ WARNING**  
ELECTRICAL SHOCK HAZARD

TERMINALS ON LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION:  
INVERTER(S), AC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).  
PER CODE(S): NEC 2017: 690.13(B)

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

LABEL LOCATION:  
UTILITY SERVICE ENTRANCE/METER, INVERTER/DC DISCONNECT IF REQUIRED BY LOCAL AHJ, OR OTHER LOCATIONS AS REQUIRED BY LOCAL AHJ.  
PER CODE(S): NEC 2017: 690.56(C)(3), IFC 2015: 1204.5.3

**⚠ WARNING**  
POWER SOURCE OUTPUT CONNECTION

**DO NOT RELOCATE THIS OVERCURRENT DEVICE**

LABEL LOCATION:  
ADJACENT TO PV BREAKER AND ESS OCPD (IF APPLICABLE).  
PER CODE(S): NEC 2017: 705.12(B)(2)(3)(b)

**⚠ WARNING**

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR.

LABEL LOCATION:  
MAIN SERVICE PANEL (IF APPLICABLE).  
PER CODE(S): NEC 2017: 705.12(B)(2)(3)(C)

**⚠ WARNING**  
PHOTOVOLTAIC SYSTEM COMBINER PANEL

**DO NOT ADD LOADS**

LABEL LOCATION:  
PHOTOVOLTAIC AC COMBINER (IF APPLICABLE).  
PER CODE(S): NEC 2017: 705.12(B)(2)(3)(c),

**PHOTOVOLTAIC AC DISCONNECT**

MAXIMUM AC OPERATING CURRENT: 63.8 AMPS  
NOMINAL OPERATING AC VOLTAGE: 240.0 VAC

LABEL LOCATION:  
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.  
PER CODE(S): NEC 2017: 690.54

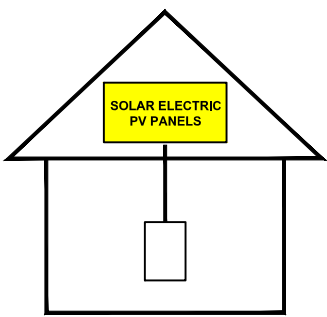
**PHOTOVOLTAIC AC DISCONNECT**

MAXIMUM AC OPERATING CURRENT: 86.4 AMPS  
NOMINAL OPERATING AC VOLTAGE: 240.0 VAC

LABEL LOCATION:  
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.  
PER CODE(S): NEC 2017: 690.54

**SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**

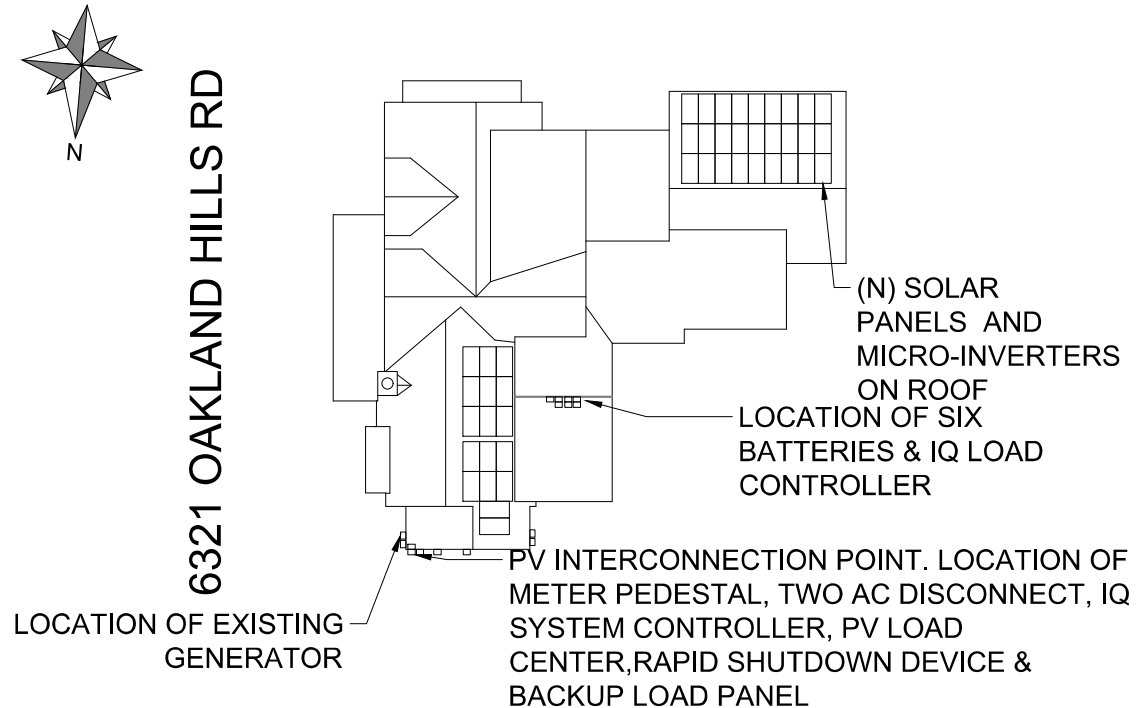
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.



LABEL LOCATION:  
ON OR NO MORE THAT 3 M (10 FT) FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.  
PER CODE(S): NEC 2017: 690.56(C)(1)(a)

# CAUTION:

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS AS SHOWN



PERMANENT SIGNAGE NOTES:

1. NOT ALL PLACARDS SHOWN MAY BE REQUIRED BY LOCAL AHJ. CONTRACTOR TO VERIFY PLACARD REQUIREMENTS WITH LOCAL AHJ BEFORE INSTALLATION.
2. ALL PLAQUES AND SIGNAGE REQUIRED BY THE LATEST EDITION OF THE CALIFORNIA ELECTRICAL CODE
3. ALTERNATE POWER SOURCE PLACARD SHALL BE METALLIC OR PLASTIC, ENGRAVED OR MACHINE PRINTED LETTERS IN A CONTRASTING COLOR TO THE PLAQUE. THIS PLAQUE WILL BE ATTCHED BY POP RIVETS OR SCREWS OR OTHER APPROVED METHOD.
4. DIRECTORY PLACARD MARKING CONTENT AND FORMAT: RED BACKGROUND, WHITE LETTERING, MINIMUM 3/8" LETTER HIEGHT, ALL CAPITAL LETTERS, ARIAL OR SIMILAR FONT, NON BOLD, REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.

**CONTRACTOR**

**AUSTIN PLUMBING HEATING AIR & ELECTRIC**

**ADDRESS:**  
530 NORTON DRIVE  
HARTLAND, WI 53029  
UNITED STATES  
darren@teamaustin.com  
License#: 172292

**DESIGNER:**  
GREENWORLD RENEWABLES

**DESIGNER SIGNATURE:**

**SPUSTA RESIDENCE**

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

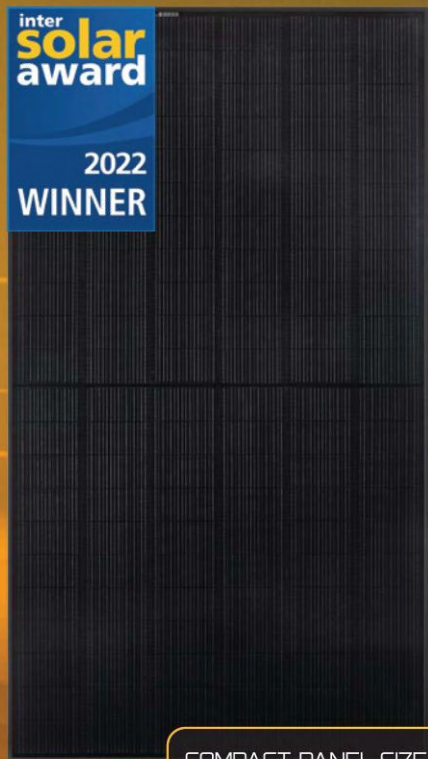
APN:CHQV0402987  
DATE:4/11/2024

**SHEET E-2**

SOLAR'S MOST TRUSTED



inter solar award  
2022 WINNER



COMPACT PANEL SIZE

# REC ALPHA<sup>®</sup> PURE SERIES PRODUCT SPECIFICATIONS

410 WP  
20.6 W/FT<sup>2</sup>  
22.2% EFFICIENCY

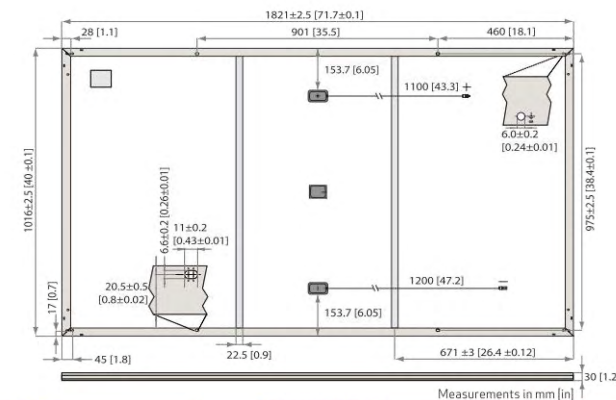


## REC ALPHA PURE SERIES PRODUCT SPECIFICATIONS



### GENERAL DATA

Cell type:	132 half-cut REC heterojunction bifacial cells with lead-free, gapless technology, 6 strings of 22 cells in series
Glass:	0.13in (3.2mm) solar glass with anti-reflective surface treatment in accordance with EN 12150
Backsheet:	Highly resistant polymer (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4mm <sup>2</sup> ) in accordance with IEC 62852, IP68 only when connected
Cable:	12 AWG (4mm <sup>2</sup> ) PV wire, 43+47 in (11+1.2 m) in accordance with EN 50618
Dimensions:	71.7 x 40 x 1.2 in (19.91 ft <sup>3</sup> ) / 1821 x 1016 x 30 mm (L85 m <sup>3</sup> )
Weight:	45 lbs (20.5 kg)
Origin:	Made in Singapore



### ELECTRICAL DATA

	Product Code: RECxxxAA Pure				
Power Output - P <sub>MAX</sub> (Wp)	390	395	400	405	410
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V <sub>MPP</sub> (V)	40.6	41.0	41.4	41.8	42.2
Nominal Power Current - I <sub>MPP</sub> (A)	9.61	9.64	9.67	9.69	9.72
Open Circuit Voltage - V <sub>OC</sub> (V)	48.4	48.6	48.8	49.1	49.4
Short Circuit Current - I <sub>SC</sub> (A)	10.38	10.39	10.40	10.41	10.42
Power Density (W/ft <sup>2</sup> )	19.6	19.8	20.1	20.3	20.6
Panel Efficiency (%)	21.1	21.4	21.6	21.9	22.2

STC

### ELECTRICAL DATA

Power Output - P <sub>MAX</sub> (Wp)	297	301	305	308	312
Nominal Power Voltage - V <sub>MPP</sub> (V)	38.3	38.6	39.0	39.4	39.8
Nominal Power Current - I <sub>MPP</sub> (A)	7.77	7.79	7.82	7.83	7.85
Open Circuit Voltage - V <sub>OC</sub> (V)	45.6	45.8	46.0	46.3	46.6
Short Circuit Current - I <sub>SC</sub> (A)	8.38	8.39	8.40	8.41	8.42

NMOT

### MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (146 lbs/ft <sup>2</sup> )
Maximum test load (rear):	-4000 Pa (83.5 lbs/ft <sup>2</sup> )
Max series fuse rating:	25 A
Max reverse current:	25 A

\*See installation manual for mounting instructions. Design load = Test load / 1.5 (safety factor)

### WARRANTY

	Standard			REC ProTrust		
Installed by an REC Certified Solar Professional	No	Yes	Yes			
System Size	All	<25 kW	25-500 kW			
Product Warranty (yrs)	20	25	25			
Power Warranty (yrs)	25	25	25			
Labor Warranty (yrs)	0	25	10			
Power in Year 1	98%	98%	98%			
Annual Degradation	0.25%	0.25%	0.25%			
Power in Year 25	92%	92%	92%			

See warranty documents for details. Conditions apply

Available from:

Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

### CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730
IEC 62804 PID
IEC 61701 Salt Mist
IEC 62716 Ammonia Resistance
UL 61730 Fire Type Class 2
IEC 62782 Dynamic Mechanical Load
IEC 61215-2:2016 Hailstone (35mm)
IEC 62321 Lead-free acc. to RoHS EU 863/2015
ISO 14001, ISO 9001, IEC 45001, IEC 62941



### TEMPERATURE RATINGS\*

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of P <sub>MAX</sub> :	-0.24 %/°C
Temperature coefficient of V <sub>OC</sub> :	-0.24 %/°C
Temperature coefficient of I <sub>SC</sub> :	0.04 %/°C

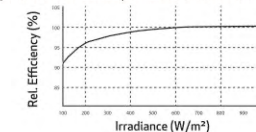
\*The temperature coefficients stated are linear values

### DELIVERY INFORMATION

Panels per pallet:	33
Panels per 40 ft GP/high cube container:	792 (24 pallets)
Panels per 53 ft truck:	891 (27 pallets)

### LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Specifications subject to change without notice. Ref: PM-DS-12-06-Rev-9-02-23



REC Solar PTE. LTD.  
20 Tuas South Ave. 14  
Singapore 637312  
post@recgroup.com



## CONTRACTOR

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UNITED STATES  
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DESIGNER:  
GREENWORLD  
RENEWABLES

DESIGNER SIGNATURE:

*Chris D*

## SPUSTA RESIDENCE

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

SHEET  
S-1



DATA SHEET



## IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

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IQ8SE-DS-0001-01-EN-US-2022-03-17

### Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

### High productivity and reliability

- Produce power even when the grid is down\*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

### Microgrid-forming

- Complies with the latest advanced grid support\*\*
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

\* Only when installed with IQ System Controller 2, meets UL 1741. IQ8H-208V operates only in grid-tied mode.  
\*\* IQ8 Series Microinverters supports split phase, 240V. IQ8H-208 supports split phase, 208V only.

## IQ8 Series Microinverters

INPUT DATA [DC]		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US
Commonly used module pairings <sup>2</sup>	W	235 – 350	235 – 440	260 – 460	295 – 500	320 – 540+	295 – 500+
Module compatibility		60-cell/120 half-cell, 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell					
MPPT voltage range	V	27 – 37	29 – 45	33 – 45	36 – 45	38 – 45	38 – 45
Operating range	V	25 – 48		25 – 58			
Min/max start voltage	V	30 / 48		30 / 58			
Max input DC voltage	V	50		60			
Max DC current <sup>3</sup> [module Isc]	A					15	
Overvoltage class DC port						II	
DC port backfeed current	mA					0	
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit					
OUTPUT DATA [AC]		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range <sup>4</sup>	V	240 / 211 – 264				208 / 183 – 250	
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz	60					
Extended frequency range	Hz	50 – 68					
AC short circuit fault current over 3 cycles	Arms	2				4.4	
Max units per 20 A (L-L) branch circuit <sup>5</sup>		16	13	11	11	10	9
Total harmonic distortion		<5%					
Overvoltage class AC port		III					
AC port backfeed current	mA	30					
Power factor setting		1.0					
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging					
Peak efficiency	%	97.5	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	97	97
Night-time power consumption	mW	60					
MECHANICAL DATA							
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)					
Relative humidity range		4% to 100% (condensing)					
DC Connector type		MC4					
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")					
Weight		1.08 kg (2.38 lbs)					
Cooling		Natural convection – no fans					
Approved for wet locations		Yes					
Pollution degree		PD3					
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure					
Environ. category / UV exposure rating		NEMA Type 6 / outdoor					
COMPLIANCE							
Certifications		CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01					

(1) The IQ8H-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility> (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SE-DS-0001-01-EN-US-2022-03-17

### CONTRACTOR

**AUSTIN PLUMBING  
HEATING AIR & ELECTRIC**

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License#: 172292**

**DESIGNER:  
GREENWORLD  
RENEWABLES**

**DESIGNER SIGNATURE:**

**SPUSTA  
RESIDENCE**

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

**SHEET  
S-2**

## Enphase IQ Envoy

The **Enphase IQ Envoy™** communications gateway delivers solar production and energy consumption data to Enphase Enlighten™ monitoring and analysis software for comprehensive, remote maintenance and management of the Enphase IQ System.

With integrated revenue grade production metering and optional consumption monitoring, Envoy IQ is the platform for total energy management and integrates with the Enphase Ensemble™ and the Enphase IQ Battery™.



### Smart

- Enables web-based monitoring and control
- Bidirectional communications for remote upgrades
- Supports power export limiting and zeroexport applications

### Simple

- Easy system configuration using Enphase Installer Toolkit™ mobile app
- Flexible networking with Wi-Fi, Ethernet, or cellular

### Reliable

- Designed for installation indoors or outdoors
- Five-year warranty



To learn more about Enphase offerings, visit [enphase.com](https://enphase.com)



## Enphase IQ Envoy

### MODEL NUMBERS

Enphase IQ Envoy™ ENV-IQ-AM1-240	Enphase IQ Envoy communications gateway with integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional consumption monitoring (+/- 2.5%). Includes one 200A continuous rated production CT (current transformer).
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### ACCESSORIES (Order Separately)

Enphase Mobile Connect™ CELLMODEM-M1 (4G based LTE-M/5-year data plan) CELLMODEM-M1-B (4G-based LTE-M1/5-year data plan)	Plug and play industrial grade cellular modem with data plan for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.)
Consumption Monitoring CT CT-200-SPLIT	Split-core consumption CTs enable whole home metering.
Ensemble Communications Kit COMMS-KIT-01	Installed at the IQ Envoy. For communications with Enphase Encharge™ storage and Enphase Enpower™ smart switch. Includes USB cable for connection to IQ Envoy or Enphase IQ Combiner™ and allows wireless communication with Encharge and Enpower.

### POWER REQUIREMENTS

Power requirements	120/240 VAC split-phase. Max 20 A overcurrent protection required.
Typical Power Consumption	5W

### CAPACITY

Number of microinverters polled	Up to 600
---------------------------------	-----------

### MECHANICAL DATA

Dimensions (WxHxD)	21.3 x 12.6 x 4.5 cm (8.4" x 5" x 1.8")
Weight	17.6 oz (498 g)
Ambient temperature range	-40° to 65° C (-40° to 149° F) -40° to 46° C (-40° to 115° F) if installed in an enclosure
Environmental rating	IP30. For installation indoors or in an NRTL-certified, NEMA type 3R enclosure.
Altitude	To 2000 meters (6,560 feet)
Production CT	- Limited to 200A of continuous current / 250A OCPD – 72kW AC - Internal aperture measures 19.36mm to support 250MCM THWN conductors (max) - UL2808 certified for revenue grade metering
Consumption CT	- For electrical services to 250A with parallel runs up to 500A - Internal aperture measures 0.84" x 0.96" (21.33mm x 24.38mm) to support 3/0 THWN conductor - UL2808 certified, for use at service entrance for services up to 250Vac

### INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Ethernet	802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
Mobile	CELLMODEM-M1 (4G) or CELLMODEM-M1-B (4G). Not included. Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.

### COMPLIANCE

Compliance	UL 61010-1 CAN/CSA C22.2 No. 61010-1 47 CFR, Part 15, Class B, ICES 003 IEC/EN 61010-1:2010, EN50065-1, EN61000-4-5, EN61000-6-1, EN61000-6-2 Metering: ANSI C12.20 accuracy class 0.5 (PV production only)
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To learn more about Enphase offerings, visit [enphase.com](https://enphase.com)

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**License#: 172292**

**DESIGNER:**  
**GREENWORLD**  
**RENEWABLES**

**DESIGNER SIGNATURE:**

*Chris L*

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WI 53058

APN:CHQV0402987  
DATE:4/11/2024

SHEET  
S-3



## IQ System Controller 3/3G

The Enphase IQ System Controller 3/3G connects the home to grid power, the IQ Battery system, and solar PV. It provides microgrid interconnect (MID) functionality by automatically detecting and seamlessly transitioning the home energy system from grid power to backup power in the event of a grid failure. It consolidates interconnection equipment into a single enclosure and streamlines grid-independent capabilities of PV and storage installations by providing a consistent, pre-wired solution for residential applications.



**IQ Series Microinverters**  
The high-powered smart grid-ready IQ Series Microinverters (M Series, IQ6, IQ7, and IQ8 Series) dramatically simplify the installation process.



**IQ Battery 5P**  
Fully integrated AC battery system, includes six field-replaceable IQBD-BAT microinverters.



**IQ Combiner 5/5C**  
Consolidates PV interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications.



**IQ Load Controller**  
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.

### Easy to install

- Connects to service entrance<sup>(1)</sup> or main load center
- Includes neutral-forming transformer
- Mounts on single stud with centered brackets
- Provides conduit entry from the bottom, left, or right
- Includes color-coded wires for ease of wiring the System Shutdown Switch
- Integrates hold-down functionality to eliminate the need for hold-down kits and special breakers

### Flexible

- Can be used for Sunlight Backup, Home Essentials Backup, or Full Energy Independence
- IQ System Controller 3 integrates with IQ Battery 5P
- IQ System Controller 3G integrates with select AC standby generators. See the [Generator Integration Tech Brief](#) for a list of generators
- Provides a seamless transition to backup

### Safe and reliable

- System Shutdown Switch can be used to disconnect PV, battery, and generator systems
- System Shutdown Switch acts as a rapid shutdown initiator for grid-forming IQ8 PV Microinverters for the safety of maintenance technicians/first responders
- 10-year limited warranty

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(1) IQ System Controller 3 is not suitable for use as service equipment in Canada.  
(2) IQ System Controller 3G is not suitable for use as service equipment in Canada.  
(3) Two units of CT-200-SPLIT or CT-200-CLAMP must be bought separately for generator integration.  
(4) The IQ System Controller 3 is rated at 22 kAIC.  
(5) Integrated hold-down kit support breakers (BR230/BR230/BR240) without provided hole.  
(6) "A" indicates alternating current (AC) supply.  
(7) Power Control System.

## IQ System Controller 3/3G

MODEL NUMBER	DESCRIPTION
SC200DMC240US01	IQ System Controller 3 streamlines the grid-independent capabilities of PV and storage installations. Integrates hold-down capability. Supports IQ Battery 5P units up to 40 kWh (without PCS) and 80 kWh (with PCS). Does not support generator integration.
SC200GDMC240US01	IQ System Controller 3G streamlines the grid-independent capabilities of PV and storage installations. Integrates hold-down capability. Supports IQ Battery 5P units up to 20 kWh (without PCS) and 40 kWh (with PCS). Supports generator integration.
WHAT'S IN THE BOX	
IQ System Controller 3/3G	Includes neutral-forming transformer (NFT) and microgrid interconnect device (MID)
System Shutdown Switch	Includes pre-wired red, black, orange, and purple 12 AWG wire (EP200G, NA, O2, RSD)
Wall-mounting bracket	Screws provided in the accessories kit for mounting
4-pole circuit breaker	Pre-installed Quad breaker (BRF-20A40A-4P-340V), 20 A, 40 A, 10 kAIC, Eaton BQC320240 <sup>(1)</sup>
Accessories kit	IQ System Controller 3/3G Hardware kit, including labels, CTBL, headers, screws, fiber plates, and Quick Install Guide (QIG) (EP200G-LITK1)
OPTIONAL ACCESSORIES AND REPLACEMENT PARTS	
CT-200-SPLIT	200 A split core current transformers for metering (accuracy: ±2.5%) <sup>(2)</sup>
CT-200-CLAMP	200 A clamp-type current transformers for metering (accuracy: ±2.5%) <sup>(3)</sup>
Main or load circuit breakers (order separately, as needed)	<ul style="list-style-type: none"> <li>BRK-100A-2P-240V, 2-pole, 100A, 25kAIC, CSR2100N or CSR2100</li> <li>BRK-125A-2P-240V, 2-pole, 125A, 25kAIC, CSR2125M</li> <li>BRK-150A-2P-240V, 2-pole, 150A, 25kAIC, CSR2150N</li> <li>BRK-175A-2P-240V, 2-pole, 175A, 25kAIC, CSR2175M</li> <li>BRK-200A-2P-240V, 2-pole, 200A, 25kAIC, CSR2200N</li> </ul>
Distributed energy resource (DER) circuit breakers (order separately, as needed) <sup>(4)</sup>	<ul style="list-style-type: none"> <li>BRK-30A-2P-240V-B, 2-pole, 30 A, 10 kAIC, BR230B/BR230</li> <li>BRK-30A-2P-240V-B, 2-pole, 30 A, 10 kAIC, BR230</li> <li>BRK-40A-2P-240V-B, 2-pole, 40 A, 10 kAIC, BR240B/BR240</li> <li>BRK-40A-2P-240V-B, 2-pole, 40 A, 10 kAIC, BR240</li> <li>BRK-60A-2P-240V, 2-pole, 60 A, 10 kAIC, BR260</li> <li>BRK-80A-2P-240V, 2-pole, 80 A, 10 kAIC, BR280</li> </ul>
EP200G-HNDL-R1	IQ System Controller 3/3G installation handle kit (order separately)
CTRL-SC3-NA-01	Control cable, 500 ft, spool (order separately)
ALTERNATE DER CIRCUIT BREAKERS	
GE/ABB	THQA, 21ex (20/40/60/80 A)
Siemens	Q2xx (30/40/60/80 A)
Siemens (quad breaker)	Q34020CT2 (20/40 A)
ELECTRICAL SPECIFICATIONS	
Nominal voltage/Range (L-L)	240 V <sup>(1)</sup> ±3%
Voltage measurement accuracy	±1% V nominal (±1.2V L-N and ±2.4V L-L)
Auxiliary (dry) contact for load control, excess PV control, and generator two-wire control	24 V, 1A
Nominal frequency/Range	60 Hz/58–63 Hz
Frequency measurement accuracy	±0.1 Hz
Maximum continuous current rating	160 A
Maximum input overcurrent protection device	200 A
Maximum output overcurrent protection device	200 A
Maximum overcurrent protection device rating for generator circuit	80 A IQ System Controller 3G only - SC200GDMC240US01
Maximum overcurrent protection device rating for storage circuit	2 x 80 A IQ System Controller 3 - SC200DMC240US01, 1 x 80 A IQ System Controller 3G - SC200GDMC240US01

(2) Factory installed quad breaker (Siemens or Eaton), NFT pre-wired to 40 A terminal of the quad breaker.  
(3) Two units of CT-200-SPLIT or CT-200-CLAMP must be bought separately for generator integration.  
(4) The IQ System Controller 3 is rated at 22 kAIC.  
(5) Integrated hold-down kit support breakers (BR230/BR230/BR240) without provided hole.  
(6) "A" indicates alternating current (AC) supply.  
(7) Power Control System.

ELECTRICAL SPECIFICATIONS									
Maximum overcurrent protection device rating for PV combiner unit	80 A								
Internal busbar rating	200 A								
Neutral-forming transformer (NFT)	<ul style="list-style-type: none"> <li>Breaker rating (pre-installed): 40 A between L1 and Neutral, 40 A between L2 and Neutral</li> <li>Continuous rated power: 3,600 VA</li> <li>Maximum continuous unbalanced current: 30 A @ 120 V</li> <li>Peak unbalanced current: 60 A @ 120 V for two seconds</li> </ul>								
MECHANICAL DATA									
Dimensions (WxHxD)	50 cm x 91.6 cm x 24.6 cm (19.7 in x 36 in x 9.7 in)								
Weight	39.4 kg (87 lbs)								
Ambient temperature range	-40°C to 50°C (-40°F to 122°F)								
Cooling	Natural convection and a heat shield								
Enclosure environmental rating	Outdoor, NEMA type 3B, polycarbonate construction								
Maximum altitude	3500 meters (8000 feet)								
WIRE SIZES									
Connections (All lugs are rated to 90°C)	<table border="1"> <tr> <td>Main lugs and backup load lugs</td> <td>Cu/Al: 6 AWG–300 kcmil</td> </tr> <tr> <td>CBR breaker bottom wiring lugs</td> <td>Cu/Al: 2 AWG–300 kcmil</td> </tr> <tr> <td>AC combiner lugs, IQ Battery lugs, and generator lugs</td> <td>14 AWG–3 AWG</td> </tr> <tr> <td>Neutral (large lugs)</td> <td>Cu/Al: 6 AWG–300 kcmil</td> </tr> </table>	Main lugs and backup load lugs	Cu/Al: 6 AWG–300 kcmil	CBR breaker bottom wiring lugs	Cu/Al: 2 AWG–300 kcmil	AC combiner lugs, IQ Battery lugs, and generator lugs	14 AWG–3 AWG	Neutral (large lugs)	Cu/Al: 6 AWG–300 kcmil
Main lugs and backup load lugs	Cu/Al: 6 AWG–300 kcmil								
CBR breaker bottom wiring lugs	Cu/Al: 2 AWG–300 kcmil								
AC combiner lugs, IQ Battery lugs, and generator lugs	14 AWG–3 AWG								
Neutral (large lugs)	Cu/Al: 6 AWG–300 kcmil								
Neutral and ground bars	<table border="1"> <tr> <td>Large holes (5/16–3/4 UNF)</td> <td>14 AWG–1/0 AWG</td> </tr> <tr> <td>Small holes (1/2–3/4 UNF)</td> <td>14 AWG–6 AWG</td> </tr> </table>	Large holes (5/16–3/4 UNF)	14 AWG–1/0 AWG	Small holes (1/2–3/4 UNF)	14 AWG–6 AWG				
Large holes (5/16–3/4 UNF)	14 AWG–1/0 AWG								
Small holes (1/2–3/4 UNF)	14 AWG–6 AWG								
COMPLIANCE									
Compliance (under progress)	UL 1741, UL 1741 SA, IEEE 1547-2018 (UL 1741-SE, 3rd Ed.), UL 1741 PCS CRD, UL1998, UL 869A, UL 678, UL 508F, UL 508, CSA S2.3 No. 1071, 47 CFR Part 15 Class B, ICES 003, IEC 618 AC176. The IQ System Controller 3/3G is approved for use as service equipment in the United States.								
WARRANTY									
Limited warranty (restrictions apply)	Up to 10 years (EP200G-NA-O2-RSD has a 9-year warranty)								
COMPATIBILITY <sup>(7)</sup>									
Battery	IQ Battery 5P (QBATTERY-5P-0-NA)								
Microinverters	IQ8, IQ7, IQ6, and M Series Microinverters <sup>(8)</sup>								
IQ Combiner	IQ Combiner 5/5C (X-IQ-AMI-340-60, X-IQ-AMI-340-5)								
Communications Kit 2	COMMS-KIT-02								

(7) Sections from these standards were used during the safety evaluation and included in the UL 1741 listing.  
(8) For more details, refer to IQ System Controller 3/3G Quick Install Guide.  
(9) M Series Microinverters can only be supported in states that have not yet adopted IEEE 1547-2018. Enphase does not support mixing IQ8 Series Microinverters with other series on the same IQ Gateway.

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APN:CHQV0402987  
DATE:4/11/2024



DATA SHEET NA PRELIMINARY



### IQ Battery 5P

The IQ Battery 5P all-in-one AC-coupled system is powerful, reliable, simple, and safe. It has a total usable energy capacity of 5.0 kWh and includes six embedded grid-forming microinverters with a 3.84 kVA continuous power rating. It provides backup capability and installers can quickly design the right system size to meet the customer needs.

#### Dimensions



#### Powerful

- Provides 3.84 kVA continuous and 7.68 kVA peak power
- Doubles the available power per kWh of prior generations of IQ Battery 5P
- Includes six embedded IQBD-BAT Microinverters

#### Reliable

- 15-year limited warranty
- Cools passively with no moving parts or fans
- Uses wired communication for fast and consistent connection
- Updates software and firmware remotely

#### Simple

- Fully integrated AC battery system
- Installs and commissions easily
- Supports Backup, Self-Consumption, and Time-of-use (TOU) modes
- Offers homeowners remote monitoring and control from the Enphase App
- Field replaceable components

#### Safe

- Tested to meet UL 9540A, the highest industry standard for battery safety
- Uses lithium iron phosphate (LFP) chemistry for maximum safety and longevity



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IQB-5P-05H-00000-1-0 EN-US-2023-09-22

### IQ Battery 5P

MODEL NUMBER	
IQBATTERY-5P-3P-NA	The IQ Battery 5P system with integrated IQ Microinverters and battery management system (BMS) with battery controller.
WHAT'S IN THE BOX	
IQ Battery 5P unit	IQ Battery 5P unit (B05-102-US00-1-3)
ID cover and conduit cover	IQ Battery 5P cover with two conduit covers for left-side and right-side of the unit
Bottom mounting bracket and top shield	Bottom mounting bracket for mounting bracket on the wall. One top shield required for UL9540A
M5 seismic screws	Two M5 seismic screws for securing battery unit on bottom bracket
M4 grounding screws	Two M4 grounding screws to secure top shield on bottom wall-mount bracket
M5 ID cover grounding screws	Two M5 ID Cover grounding screws for EMI/EMC requirement
Cable ties	Six cable ties for securing field cables to the unit
CTRL connector	Spare CTRL connector without resistor for CTRL wiring
CTRL connector with resistor	Spare CTRL connector with resistor for CTRL wiring
Quick Install Guide (QIG)	QIG for instructions on IQ Battery unit installation
OPTIONAL ACCESSORIES AND REPLACEMENT PARTS	
IQBD-BAT-RMA	IQBD-BAT Microinverter for field replacement
B05-102-US00-1-3-RMA	IQ Battery 5P Battery unit for field replacement
B05-CX-0550-O	IQ Battery 5P cover for field replacement
B05-PI-0550-O	IQ Battery 5P pedestal mount
B05-CP-096-O	IQ Battery 5P conduit plates for field replacement. Includes one left-side and one right-side conduit plate
B05-WB-0543-O	IQ Battery 5P wall bracket for field replacement. Includes one wall-mount bracket and one top shield
IQBATTERY-HNDL-5	IQ Battery 5P lifting handles. Includes one left-side and one right-side lifting handle
B05-ACFB-080-O	IQ Battery 5P AC filter board for field replacement
B05-BMSNA-0490-O	IQ Battery 5P BMS board for field replacement
B05-CANB-063-O	IQ Battery 5P control communication board for field replacement
B05-NICS-0524-O, B05-NUCS-0524-O	IQ Battery 5P control switch preinstalled on the wiring cover for field replacement
OUTPUT (AC)	
Rated (continuous) output power	3.84 kVA
Peak output power	7.68 kVA (3 seconds), 6.14 kVA (10 seconds)
Nominal voltage/Range	240/211-264 VAC
Nominal frequency/Range	60/57-63 Hz
Rated output current (@240 VAC)	16 A
Peak output current (@240 VAC)	32 A (3 seconds), 25.8 A (10 seconds)
Power factor (adjustable)	0.85 leading, 0.85 lagging
Maximum output overcurrent protection	20 A per unit
Interconnection	Single-phase
AC round-trip efficiency <sup>1</sup>	90%
Chemistry	Lithium iron phosphate (LFP)
Altitude	Up to 3,000 meters (9,842 feet)
Mounting	Wall-mount or pedestal-mount (sold separately)

<sup>1</sup>Supported in both grid-connected and backup/off-grid operation.  
<sup>2</sup>AC to the battery to AC at 50% power rating.

IQB-5P-05H-00000-1-0 EN-US-2023-09-22

### IQ Battery 5P

BATTERY	
Total capacity	5.0 kWh
Usable capacity	5.0 kWh
DC round-trip efficiency	96%
Nominal DC voltage	76.8 V
Maximum DC voltage	88.4 V
Ambient operating temperature range (charging)	-30°C to 60°C (-4°F to 142°F) non-condensing
Ambient operating temperature range (discharging)	-30°C to 65°C (-4°F to 147°F) non-condensing
Optimum operating temperature range	0°C to 30°C (32°F to 86°F)
Chemistry	Lithium iron phosphate (LFP)
MECHANICAL DATA	
Dimensions (HxWxD)	880 mm x 550 mm x 188 mm (34.6 in x 21.7 in x 7.4 in)
Lifting weight	66.3 kg (146.1 lbs)
Total installed weight	78.9 kg (174 lbs)
Enclosure	Outdoor (NEMA 3R)
IQBD-BAT Microinverter enclosure	NEMA type 0
Cooling	Natural convection
FEATURES AND COMPLIANCE	
Compatibility	Compatible with IQ and M Series Microinverters, IQ System Controller 3/3i, IQ Combiner 5/6C, IQ Gateway for grid-tied and backup operation
Communication	Wired control communication
Services	Backup, Self-Consumption, TOU, and NEM Integrity
Monitoring	Enphase Installer Platform and Enphase App monitoring options; API integration CA Rule 21 (UL 1741-5A), IEEE 1547-2018 (UL 1741-5B, 3rd Ed.) CAN/CSA C22.2 No. 6073-16 UL 9540, UL 9540A, UL 36-3, UL 998, UL 993, NEMA Type 3R, AC108 EMC CE/CIS Part 15, Class B, CISR QD3 Cell Module: UL 1973, UN 38.3 Inverters: UL 62109-1, IEC 62109-2
Compliance	
LIMITED WARRANTY	
Limited warranty	180R capacity, up to 15 years or 8,000 cycles <sup>1</sup>

<sup>1</sup>Whichever occurs first. Restrictions apply.

IQB-5P-05H-00000-1-0 EN-US-2023-09-22

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DATE:4/11/2024

## SHEET S-5



## The Respect Your Roof Deserves

When integrating with a home, solar attachments must be dependable for the lifetime of the rooftop. Due to recent innovations, many asphalt shingles have bonded courses. A mount that protects without the need to pry shingles can really speed things up.

Halo UltraGrip®(HUG®) is here to respect the roof. Its Halo is a cast-aluminum barrier that encases the UltraGrip, our industrial-grade, foam-and-mastic seal. This allows HUG to accelerate the installation process and provide the utmost in waterproofing protection. Give your roof a HUG.®



**UltraGrip® Seal Technology**  
HUG UltraGrip utilizes a state-of-the-art seal design that uses a unique, foam-and-mastic combination. The foam-backed adhesive provides an entirely new flashing system that conforms and adheres to every nook and cranny of composition shingles, filling gaps and shingle step-downs (up to 1/8" in height).

**Multi-Tiered Waterproofing**  
HUG® utilizes a multi-tiered stack of components to provide revolutionary waterproofing protection. The Halo cast-aluminum, raised-perimeter foundation surrounds the UltraGrip base—a foam-backed mastic seal combination that prevents water intrusion by adhering and sealing with the shingle surface.

Halo UltraGrip™ is part of the QuickMount® product line.



**Rafter & Deck Mounting Options**  
Mount HUG® to the roof rafters, the roof deck, or both with our custom-engineered RD (rafter-or-deck) Structural Screw. The RD Structural Screw anchors HUG to the roof with an EPDM sealing washer, completing the stack of waterproofing barriers. See backside for more installation information.

**Triple Rated & Certified to Respect the Roof™**  
UL 2703, 441 (27)  
TAS 100(A)-95

Tech Brief

QuickMount® HUG

## Adaptive, Rafter-Friendly Installation

Tech Brief



**Hit the rafter? Good to go!**  
When you find a rafter, you can move on. Only 2 RD Structural Screws are needed.

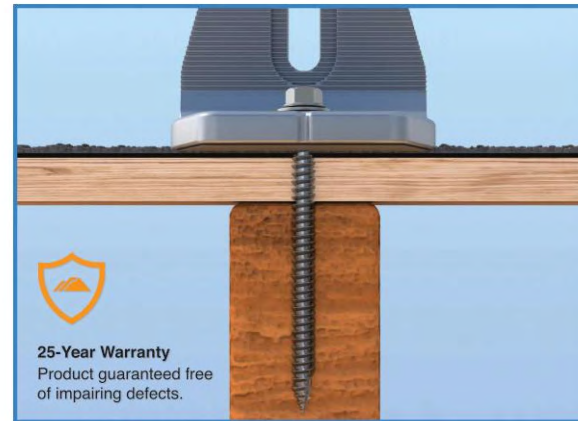


**Miss the rafter? Try it again.**  
Place another screw to the left or right. If rafter is found, install 3rd and final screw.



**Still no luck? Install the rest.**  
If more than 3 screws miss the rafter, secure six screws to deck mount it.

## Trusted Strength & Less Hassle



**25-Year Warranty**  
Product guaranteed free of impairing defects.

Structural capacities of HUG® were reviewed in many load directions, with racking rail running cross-slope or up-slope in relation to roof pitch.

For further details, see the HUG certification letters for attaching to rafters and decking.

IronRidge designed the HUG, in combination with the RD Structural Screw to streamline installs, which means the following:

- No prying shingles
- No roof nail interference
- No pilot holes necessary
- No sealant (in most cases)
- No butyl shims needed

### Attachment Loading

The rafter-mounted HUG has been tested and rated to support 1004 (lbs) of uplift and 368 (lbs) of lateral load.

### Structural Design

Parts are designed and certified for compliance with the International Building Code & ASCE/SEI-7.

### Water Seal Ratings

HUG passed both the UL 441 Section 27 "Rain Test" and TAS 100(A)-95 "Wind Driven Rain Test" by Intertek.

### UL 2703 System

Systems conform to UL 2703 mechanical and bonding requirements. See Flush Mount Manual for more info.

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**DESIGNER:**  
GREENWORLD RENEWABLES  
**DESIGNER SIGNATURE:**

## SPUSTA RESIDENCE

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DATE:4/11/2024

SHEET  
S-6





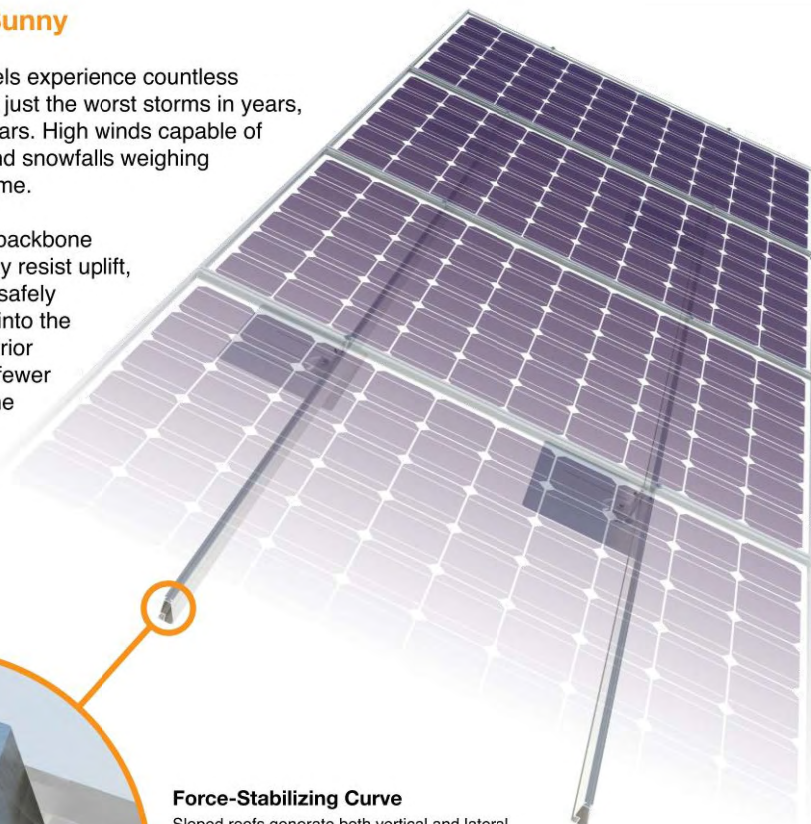
Tech Brief

## 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 6000-series aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



Tech Brief

## 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 spans up to 6 feet, while remaining light and economical.

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



#### XR100

XR100 is a residential and commercial mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 10 feet.

- 10' 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 up to 12 feet for commercial applications.

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

### Rail Selection

The table below was prepared in compliance with applicable engineering codes and standards.\* Values are based on the following criteria: ASCE 7-16, Gable Roof Flush Mount, Roof Zones 1 & 2e, Exposure B, Roof Slope of 8 to 20 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed certification letters.

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

\*Table is meant to be a simplified span chart for conveying general rail capabilities. Use approved certification letters for actual design guidance.

### CONTRACTOR

#### AUSTIN PLUMBING HEATING AIR & ELECTRIC

ADDRESS:  
530 NORTON DRIVE  
HARTLAND, WI 53029  
UNITED STATES  
darren@teamaustin.com  
License#: 172292

### DESIGNER:

GREENWORLD  
RENEWABLES

### DESIGNER SIGNATURE:

## SPUSTA RESIDENCE

6321 OAKLAND HILLS RD,  
NASHOTAH,  
WI 53058

APN:CHQV0402987  
DATE:4/11/2024

SHEET  
S-7



## STAFF REVIEW

**Date:** May 6, 2024

**Meeting Date & Time:** Monday, May 13<sup>th</sup> at 6:00 p.m.

**To:** Plan Commission, Village of Chenequa

**From:** Planning Department

**Subject:** Site Plan Review

**Owner:** Michael Kelly

**Location:** 4667 N Pine Meadows Lane

**Project Description:** Review non-conforming landscaping project

**Zoning District:** Residence District – Lot Abutting Lake

Dear Village Board of Trustees,

During a routine site inspection, I was made aware of a zoning violation on Mr. Kelly's property at 4667 N Pine Meadows Lane. Onsite, I discovered three separate retaining walls that were constructed during the winter months without obtaining proper Village approvals.

Following my site visit, a certified letter was sent to Mr. Kelly's residence. A copy of this letter is attached in the packet for your review.

Mr. Kelly was instructed to;

- 1.) Immediately install erosion control (Completed)
- 2.) Develop a remediation plan to present to the Village Plan Commission and Board of Trustees

Included in your packets, Mr. Kelly has indicated the location of the retaining walls that were recently installed (in red) and the location of existing walls (in black). Currently, Mr. Kelly wishes for the retaining walls to remain and is not proposing an alternate solution.

It is my interpretation that these walls are structures, two of which currently impede on the 75' setback of the ordinary high-water mark. The allowable structures within the shoreland buffer zone are outlined in 6.5(4)(a)(i). I do not believe retaining walls are currently permissible under Chenequa zoning code.

If Mr. Kelly chooses to pursue keeping the retaining walls, he must proceed with the Village Board of Appeals to either challenge the Zoning Administrator's interpretation on the code or ask for a variance.

c: Dan Neumer, Administrator  
Deanna Braunschweig, Clerk  
Paul Launer, Lake Country Inspections  
Michael Kelly, Owner  
Cody Lincoln, Zoning Administrator



# Village of Chenequa

Daniel R. Neumer  
Administrator/Chief

31275 W County Road K  
Chenequa, WI 53029

February 26, 2024

Michael Kelly  
4667 N Pine Meadows Lane  
Hartland, WI 53029

Dear Mr. Kelly,

During a site visit to your property located at 4667 N Pine Meadows Lane following the issuance of a cutting permit, we observed an extensive amount of landscape work had been completed on your property without proper approvals. The following items were found to have been completed without permits.

- 1.) Grading activities near the lake are currently in progress.
- 2.) Retaining walls were illegally installed.

Of the items listed above, the following shall be corrected as they are not currently in compliance with Chenequa Village Ordinance.

- 1.) The newly installed retaining walls encroach on the 75' setback from Pine lake.
  - a. 6.3(46) defines a structure as *"Anything permanently placed on or in the ground for any use whatsoever; including but not limited to any new or existing building, fences, pillars, gated entrances requiring a permit under Section 5.19 and recreational facilities. Private driveways shall not be considered to be structures."*
  - b. 6.5(4)(a)(i)(B) lists the allowable structures within this setback.  
*Within the area located between the thirty (30) foot line referred to in (A) above and a line seventy-five (75) feet from the lake frontage and parallel thereto there may be constructed and maintained uncovered terraces, patios, one (1) uncovered stairway, ground level marine railways, below-ground water pumping facilities, and one (1) uncovered walkway located at or beneath the ground level.*
- 2.) Erosion Control measures specified in 5.18 have not been followed and must be put into place in order to prevent sediment from flowing into Pine Lake.

As previously stated, no permits to do this work have been applied for. This is in violation of local ordinance. You must now apply for an after-the-fact permit from the Village of Chenequa. This permit

application shall include detailed plans outlining your proposed plan of remediation. Fines and penalties may apply even if the permit is approved.

The plans you submit will be reviewed by the Plan Commission and Village Board. If they feel that your proposed modifications sufficiently resolves the problem, you may proceed with the project. **Item #2 of the above listed nonconformities shall be corrected within 5 business days of the date on this letter.** Failure to comply with this order shall result in the Village moving forward with all necessary action outlined in Chapter 6.10 (Violation, Penalty) to bring the site into compliance.

Sincerely,

A handwritten signature in black ink, appearing to read 'Cody Lincoln', written in a cursive style.

Cody Lincoln

Zoning Administrator/Village Forester

cc: Jo Anne Villavicencio- Village President  
Dan Neumer, Administrator  
Deanna Braunschweig, Clerk  
Paul Launer, Lake Country Inspections



New retaining walls  
and north  
walkway



Existing retaining walls





Existing retaining  
walls and  
south stairway



Existing retaining walls



*Existing Retaining  
Walls*



Middle stairway



## **NOTICE OF INTENT TO CREATE A QUIET ZONE**

The Village of Chenequa, Wisconsin is making notice of its intent to create a New Railroad Crossing Quiet Zone within its corporate limits.

This Notice of Intent to create a Quiet Zone is made in accordance with the Final Rule of the Federal Railroad Administration published in the Federal Register pertaining to Title 49 of the Code of Federal Regulations Part 222.43.

The Quiet Zone is being established by the Village of Chenequa, Wisconsin along a portion of railway line operated by Canadian Pacific Kansas City (CPKC).

### **QUIET ZONE DESCRIPTION:**

A segment measuring 1.00 mile of railway operated by Canadian Pacific Kansas City (CPKC), along the Chicago-St. Paul Line, Watertown Subdivision, from Milepost 111.00 to Milepost 112.00, is being established as a New Quiet Zone within the Village of Chenequa, Wisconsin. The restrictions would be imposed on the routine sounding of locomotive horns at all times (24 hours a day).

There is one public grade crossing within the Quiet Zone, identified as U.S. DOT National Highway-Rail Grade Crossing Inventory Number 39054U, which crosses Veelson Road. Veelson Road is a Village road operated and maintained by the Village of Chenequa, Wisconsin. No other public crossings and no private crossings exist within this Quiet Zone segment.

The public grade crossing within the Quiet Zone was recently upgraded by WISDOT and CPKC to include four quadrant gates along with the flashing lights, sufficient to satisfy the Supplementary Safety Measure (SSM) requirement of Title 49 of the Code of Federal Regulations Part 222.39(a)(1), allowing for public authority designation of a Quiet Zone. The crossing also includes all traffic signs and pavement markings currently required in accordance with the latest provisions of the MUTCD. The only remaining improvement proposed is the installation of "No Train Horn" signs (MUTCD W10-9 signs) for each approach, which will be installed prior to when the Quiet Zone is established (they will be bagged and not visible until the Quiet Zone Establishment Date).

### **DOCUMENTATION OF NOTICE OF INTENT**

Please submit all information or comments about the proposed Quiet Zone in writing to the Village of Chenequa, Wisconsin. The name, address, and contact information of the person who will act as the Village's point of contact during the quiet zone development process is as follows:

Daniel Neumer  
Village Administrator / Chief of Police  
Village of Chenequa  
31275 W County Road K  
Chenequa, WI 53029  
Telephone: (262) 367-2239  
Email: [chief@chenequa.org](mailto:chief@chenequa.org)

This notice is being sent out before **April 19**, 2024 to the following entities:

Associate Administrator of Safety  
Federal Railroad Administration  
1200 New Jersey Avenue  
Washington DC 20590

Mr. Brian Osborne  
Manager Public Works – US East Region  
CPKC  
120 South 6th Street, Suite 700  
Minneapolis, MN 55402

Mr. Don Vruwink  
Commissioner  
of the Commissioner of Railroads  
4822 Madison Yards Way, Suite S633  
Madison, WI 53705

Ms. Lisa Stern  
Chief of Railroads  
Wisconsin Department of Transportation  
4802 Sheboygan Avenue, Room 701  
Madison, WI 53702

Mr. Aaron Thompson  
Central Reporting Group  
Amtrak  
40 Massachusetts Avenue NE  
Washington, DC 20002

Please send all comments or no-comment statement by **June 19**, 2024.



# *Resolution of Appreciation*

## **Robert Bellin**

WHEREAS, Robert Bellin has served the Village of Chenequa as Village Trustee from April 2014 to April 2024 and has served as a committee member for the Public Safety Committee, Operations Committee, Plan Commission, Lake Country Fire and Rescue Board, and Hwy 83 Task Force during this same period of time. Robert joined and served on the Chenequa Fire Department since 1975; and,

WHEREAS, he has devoted much valuable time and personal attention to the work and duties as Trustee for the Village Board and as a committee member for the many committees on behalf of the citizens of Chenequa, continually having met his responsibilities with purpose and dedication; and,

WHEREAS, the citizens of Chenequa recognize and deeply appreciate the time and service he contributed to the preservation and improvement of the quality of life in our community; and,

NOW, THEREFORE, BE IT RESOLVED that the Village Board of the Village of Chenequa, Wisconsin, hereby express their profound gratitude on behalf of the citizens of Chenequa to Robert Bellin for his loyal and faithful public service he has given by means of this resolution, which shall be spread upon the permanent records of the Village Board.

Adopted by the Village Board of Chenequa this 13<sup>th</sup> day of May 2024.

Jo Ann F. Villavicencio  
Village President