

# Longhouse Cooperative

772 Elm St. Extension, Ithaca, NY 14850

607-339-5384 Longhousetim@gmail.com

## Via Electronic Filing

Hon. Kathleen H. Burgess  
Secretary to the Commission  
New York State Public Service Commission  
Agency Building 3  
Albany, NY 12223-1350

Re: Petition to submeter at Longhouse Cooperative

Dear Secretary Burgess:

Longhouse Cooperative is a NY State housing cooperative incorporated in 1975 and consisting of nine households in four buildings and situated on 30 acres of land. The Board of directors consists of all member/owners in the cooperative and meets monthly to deal with management of the cooperative. We have no employees and no paid officers, nor do we maintain any office. All management functions of the cooperative are carried out by the members directly on a voluntary basis.

The cooperative, with the unanimous support of all members, wishes to install a solar array on our land capable of providing all of the electrical power used by the cooperative and its members. Currently we have direct metering from NYSEG for each residence and for common structures. We propose to change to having NYSEG master meter the cooperative, which will then submeter to each residence and the common areas.

### INFORMATION REQUIRED BY 16 NYCRR § 96.5

- a) Each residence at Longhouse is currently direct metered by NYSEG. The existing utility meters will be replaced with Itron Centron C1S Class 200 Watthour meters. These meters are on the Commission approved meter list. Cut sheets for this meter can be found in Attachment A.
- b) The solar array we are installing is sized to provide 100% of our usage so most of the time we will not be buying power from our utility (NYSEG).

All costs associated with installing the solar array will be divided by the projected total KWH production over 20 years. This will produce a charge per KWH that will be billed to the sub-meters according to their usage. The cooperative will have 4 NYSEG meters. Two will be located near the

solar array and each of those will be a host meter matched against a satellite meter near the buildings for the purpose of remote net metering. The monthly fixed charges for these meters will be divided equally among the sub-meters. Whenever there are also NYSEG charges for power production and delivery, these charges including all associated fees and taxes, these will be divided among the sub-meters in proportion to their usage for the billing period.

Attachment B is the spread sheet that will be used to calculate monthly bills to Longhouse residents for any utility charges. Although the numbers on this sample are only for illustration purposes, this is the actual spread sheet that will calculate each individual's charges when actual meter readings and utility costs are entered. For billing, we will simply circulate this spreadsheet. This will allow each member to see exactly how their charges were calculated and how their usage compares with others. This is in keeping with the transparency that we maintain in all of our financial affairs.

At no time will these rates exceed the rate cap in these regulations. All meter reading data and billing calculations will be retained for 6 years.

c) Our HEFPA compliance plan is attached as Attachment C.

d) The submeterer identification form is attached as Attachment D.

e) This section does not apply as this is not a rental property.

f) Attached to this filing as Attachment E is a rider to the proprietary lease covering these requirements which will be provided to each owner/shareholder and which will be signed by them.

g) Attached to this filing as Attachment F is a copy of the letter sent to NYSEG notifying them of this petition to submeter.

h) This section is not applicable because there are no rental units.

i) It is the right and responsibility of individual members at Longhouse Cooperative to make modifications in their units for energy efficiency or other purposes. The measures taken by some members include: weatherization, double pane windows, energy star appliances, CFL and LED lighting,

and heating with wood, gas, or air source heat pumps. Through the proposed installation of solar panels the cooperative will reduce the use of grid sourced electricity to zero for the entire cooperative including all living units.

**Description of Solar PV System:**

Longhouse Cooperative has selected Taitem Engineering, P.C. to design, engineer, and install the Cooperative's PV system. We signed a system purchase agreement and supporting documentation on June 11, 2015, and a NYSERDA application was submitted on June 16, 2015. The project is currently in the permitting process with Town of Ithaca.

The planned system is a ground mounted 41.34 kW DC solar array using 156 Kyocera KU265-6MCA 265 Watt modules, a Schletter FS driven pile racking system, and 6 SMA transformerless inverters with a combined output of 41.1 kW AC (3 x SB7700TL-US, 3 x SB6000TL-US). The system is designed to offset the combined energy use of Cooperative members and ancillary site loads.

The array will be located in a large field adjacent to the Cooperative housing units. The site location has excellent solar access and the array will be near the utility point of interconnection which were primary factors when choosing array location.

Detailed plans for the solar array are included as Attachment G.

j) Attachment H is a list of energy efficiency measures that Longhouse Cooperative will provide and recommend to its member/residents.

k) This section is not applicable. No residents are receiving income-based housing assistance.

l) This section is not applicable. No units use electric heat.

m) This petition to submeter is part of a project to install PV panels sufficient to supply 100% of the cooperative's electrical usage.

# Attachment A

## Meter Cut Sheet



# C1S

CENTRON® Meter

The CENTRON C1S solid-state meter is used for measuring single-phase energy consumption. With this solid-state meter, Itron presents a platform for residential metering with the flexibility to adapt as your needs expand and change.

The CENTRON C1S is available as an energy meter with an LCD register. As an option, the meter is available with interchangeable personality modules, including demand, time-of-use (TOU), load profile and various communication options.

## FEATURES

### Flexible Platform

- » The CENTRON meter can easily be upgraded to any of the option modules available
- » All calibration data is permanently stored in the base of the meter on the CENTRON metrology board

### Personality Modules

- » The interchangeable personality modules are part of a snap-in register assembly
- » The personality module houses all register or communication functions

### Enhanced Performance

- » Low starting watts
- » Low burden
- » Captures energy that was not monitored in the past by electromechanical meters

### Tamper Resistant

- » Measures energy even if the meter is inverted

### Standard Features

- » Electronic LCD register
- » Polycarbonate cover
- » Test LED Unattended Processing

### Option Module Upgrades

- » Demand module (C1SD)
- » TOU with demand module (C1ST)
- » Load profile with TOU and demand module (C1SL)
- » R300 900 MHz RF module (C1SR)

### Option Availability

- » Glass cover
- » Electronic detent
- » Identification/Accounting aids

## Product Availability

Meter Version	Class	Volts	Wire	Form	Digits/Mult	Energy Setting	Catalog Number Glass	Catalog Number Poly
C1S	100	120	2	1S	5x1	Undetented	G980225	G980205
C1S	200	240	3	2S	5x1	Undetented	G980194	G980181
C1S	320	240	3	2S	5x1	Undetented	G980236	G980213
C1S	20	120	2	3S	5x1	Undetented	G980247	G980248
C1S	20	240	3	4S	5x1	Undetented	G980255	G980223
CN1S	200	120	3	12S	5x1	Undetented	G980257	G980195
CN1S	200	120	3	25S	5x1	Undetented	G980265	G980266

## Technical Data

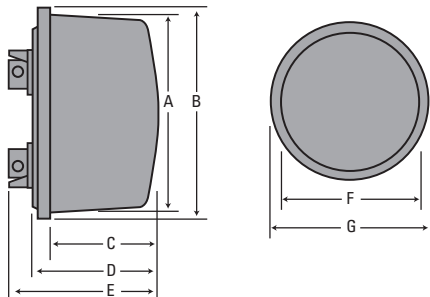
Meets applicable standards:

- » ANSI C12.1 - 1995
- » ANSI C12.10 - 1997
- » ANSI C12.20 (Class 0.5) - 1998
- » ANSI C37.90.1 - 1989
- » ANSI C62.45 - 1992
- » IEC 61000-4-4
- » IEC 61000-4-2
- » FCC Part 15, Subclass C

## Reference Information

- » CENTRON Technical Reference Guide
- » CENTRON C1SR Specification Sheet
- » CENTRON C1SC Specification Sheet
- » CENTRON C1SD, T, L Specification Sheet
- » Hardware Specification Form
- » ZRO-C2A Handheld Meter Resetter Instructions

## Dimensions



## SPECIFICATIONS

### Dimensions

Polycarbonate						
A	B	C	D	E	F	G
6.29"	6.95"	2.7"	3.16"	4.53"	6.29"	6.95"
16 cm	17.7 cm	6.9 cm	8 cm	11.5 cm	16 cm	17.7 cm
Glass						
A	B	C	D	E	F	G
6.42"	6.95"	3.03"	3.55"	4.9"	6.42"	6.95"
16.3 cm	17.7 cm	7.7cm	9 cm	12.5 cm	16.3 cm	17.7 cm

### Shipping Weights

Polycarbonate			Glass		
	Pounds (approx)	Kilograms		Pounds (approx)	Kilograms
4 Meter Cartons	8.9	4.04	4 Meter Cartons	13.96	6.35
120 Meter Pallets	260-265	117.936	120 Meter Pallets	335	151.956

### Specifications

Power Requirements	Voltage Rating: 240 Operating Voltage: ± 20% (60 Hz); ±10% (50 Hz)	Frequency: 60Hz, 50hz Operating Range: ± 3 Hz
Operating Environment	Temperature: -40° to +85°C	Humidity: 0% to 95% non-condensing
Transient / Surge Suppression	ANSI C37.90.1-1989 ANSI C62.45-1992	IEC 61000-4-4
Accuracy	ANSI C12.20 0.5 accuracy class	
General LCD Display	Five-digit liquid crystal display Annunciator height: 0.088"	Data digit height: 0.4" Electronic load indicator
Characteristic Data	Starting watts: 5 watts	
Temperature Rise Specifications	Meets ANSI C12.1 section 4.7.2.9	
Burden Data*	Voltage circuit:	
	Voltage: 240	Watts: 0.5      VA: 7.5
	Current coil-self contained test amp current: 60 Hz	
Service: 3-Wire	Test current: 30 (amps)	VA: <0.50



At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with over 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water.

To realize your smarter energy and water future, start here: [www.itron.com](http://www.itron.com)

### ITRON ELECTRIC METERING

313-B North Highway 11  
West Union, SC 29696  
USA

**Phone:** 1.877.487.6602  
**Fax:** 1.864.638.4950

### CORPORATE HEADQUARTERS

2111 N Molter Road  
Liberty Lake, WA 99019  
USA

**Phone:** 1.800.635.5461  
**Fax:** 1.509.891.3355

# Attachment B

## Monthly Billing Spreadsheet

# Longhouse Monthly Electric Billing Spread Sheet For Purchased Power

Meter	last meter reading	current meter reading	usage	NYSEG fixed charge	NYSEG Usage Charge	Total
Bldg 1 Unit 1	10	12	2	6.355	0.18	6.535
Bldg 1 Unit 2	20	21	1	6.355	0.09	
Bldg 1 Unit 3	30	33	3	6.355	0.27	
Bldg 2 Unit 1	40	41	1	6.355	0.09	6.445
Bldg 2 Unit 2	50	53	3	6.355	0.27	6.625
Bldg 2 Unit 3	60	64	4	6.355	0.36	6.715
Bldg 2 basement	70	77	7	6.355	0.63	6.985
Bldg 3 Unit 1	80	85	5	6.355	0.45	6.805
Bldg 3 Unit 2	90	92	2	6.355	0.18	6.535
Bldg 3 basement	100	109	9	6.355	0.81	7.165
Bldg 4	110	111	1	6.355	0.09	6.445
Pump House	120	122	2	6.355	0.18	6.535
Total of all meters			40	76.26	3.6	79.86



# Attachment C

## HEFPA Compliance Plan

# **HEFPA IMPLEMENTATION PLAN**

**Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850**

1. Deferred Payment Agreement Package
2. Budget Billing Agreement
3. Late Payment Procedures
4. Complaint Resolution Plan
5. Termination of Electric Service Plan
6. Disclosure Statement

**1.           Deferred Payment Agreement Package**

A.     Deferred Payment Agreement

B.     Asset Evaluation Form

C.     Past Due Reminder Notice

## A. Residential Deferred Payment Agreement

Customer's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Account #: \_\_\_\_\_

The total amount owed to Longhouse Cooperative for this account as of MM/DD/ YYYY is \$XX.XX.

Longhouse Cooperative is required to offer a payment agreement that you are able to pay considering your financial circumstances. **This agreement should not be signed if you are unable to keep the terms.** Alternate terms may be available if you can demonstrate financial need. Alternate terms may include no down payment and payments as low as \$10 per month above your current bills. **If you sign and return this form, along with the down payment by MM/DD/YYYY, you will be entering into a payment agreement and by doing so will avoid termination of service.**

Assistance to pay utility bills may be available to recipients of public assistance or supplemental security income from you local social services office. This agreement may be changed if your financial circumstances change significantly because of conditions beyond your control. If after entering into this agreement, you fail to comply with the terms, Longhouse Cooperative may terminate your service. If you do not sign this agreement or pay the total amount due of \$XX.XX by MM\DD\YYYY, Longhouse Cooperative may seek to terminate your service. **If you are unable to pay these terms, if further assistance is needed, or if you wish to discuss this agreement, please call the Longhouse Cooperative C/O Longhouse Cooperative Management, 770 Elm Street, Ithaca, New York 14850 at (607) 277-1810.**

### Payment of Outstanding Balance:

Your current monthly budget amount is:     \$XX.XX

If you are not already enrolled in our Budget Billing Program, which allows you to pay for your service in equal monthly installments, and wish to enroll, check the box below, and we will start you on our program immediately.

**Yes! I would like Budget**

**Billing Residential Deferred Payment**

**Agreement Acceptance of Agreement:**

Customer's Signature: \_\_\_\_\_

Date:

This agreement has been accepted by Longhouse Cooperative. If you and Longhouse Cooperative cannot negotiate a payment agreement, or if you need further assistance, you may contact the Public Service Commission at 1-800-342-3377.

Return one copy of this agreement signed, with the down payment, by MM/DD/YYYY. If it is not signed and returned your contract may be terminated and Longhouse Cooperative, Inc. may pursue suspension of your electric service.

Please return the completed document to Longhouse Cooperative., *C/O Longhouse Cooperative Management, 770 Elm Street, Ithaca, New York 14850 at (607) 277-1810.*

## B. Asset Evaluation Form

Unit Owner's Name: \_\_\_\_\_

Account No.: \_\_\_\_\_

1. Employer Name, Address and Phone Number
  
2. What is your monthly income?
  
3. Please identify all other forms of income (Unemployment, Disability, and Public Assistance) and the amounts of each
  
4. Please list all checking and savings accounts and balances:
  
5. Please list all credit cards, balances due and the amount of the monthly payment on each:
  
  
  
  
  
  
  
  
  
  
6. What is your monthly maintenance payment?
  
7. List other assets (i.e., Stocks and Bonds):
  
  
  
  
  
  
  
  
  
  
8. List other debts (bank loans, credit lines, utility bills, etc.) and the amount of the monthly payment on each:

9. Identify all other monthly expenditures by amount:

- Food expenses \$ \_\_\_\_\_
- Medical expenses \$ \_\_\_\_\_
- Telephone bills \$ \_\_\_\_\_
- Utility bills \$ \_\_\_\_\_
- Mandatory loan/creditcard payments \$ \_\_\_\_\_
- Other \$ \_\_\_\_\_



**SPECIAL PROTECTIONS  
REGISTRATION FORM**

Please complete this form if any of the following applies. Return this form to:

**Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850  
(607) 351-5736**

**ACCOUNT INFORMATION**

(Be sure to complete before mailing)

Name

Address

Apartment

Town/City

Zip

Telephone # Daytime

Evening

Account Number (as shown on bill)

**I would like to be considered for Special Protections.**

In my household (Check):

- D Unit Owner is 62 years of age or over, and any and all persons residing therewith are either 62 years of age or under 18 years of age
  
- D Unit Owner is blind (Legally or Medically)
  
- D Unit Owner has a permanent disability
  
- D Unit Owner/resident of my house has a Medical Hardship (type):
  
  
  
  
  
  
  
  
  
  
- D Unit Owner/resident of my house has a Life Support Hardship (type):

**I receive government assistance.**

D I receive Public Assistance (PA). My case number is:

D I receive Supplemental Security Income (SSI). Note: SSI benefits are not the same as Social Security Retirement Benefits. My Social Security Number(to provide this is optional) is:

**Please send me more information about:**

D Balanced Billing

**To be Completed by Third Party**

Please let me know if this customer's bill is overdue or if the service might be turned off. As "Caregiver" I understand that I am not responsible for payment of this bill.

Caregiver/Agency

Address

Apartment

Town/City

Zip

Telephone Number Daytime

Evening

Designee Signature

### **C. Past Due Reminder Notice**

**Customer's Name:** \_\_\_\_\_

**Premise Address:** \_\_\_\_\_

**Account Number:** \_\_\_\_\_

On MM/DD/YYYY, you signed a Residential Deferred Payment Agreement (DPA) which obligated you to make a down payment of \$XX.XX by MM/DD/YYYY and regular payments of \$XX.XX, in addition to your current charges, in order to avoid Longhouse Cooperative exercising its right to terminate your electric service. You have failed to comply with the terms of the Residential Deferred Payment Agreement. We are notifying you that you must meet the terms of the existing DPA by making the necessary payment within 20 calendar days of the date payment was due, or a final termination notice may be issued to terminate your contract with us.

If you are unable to make payment under the terms of the Residential Deferred Payment Agreement because your financial circumstances have changed significantly due to events beyond your control, you should immediately contact us at (607) 351-5735 because a new payment agreement may be available. Assistance to pay utility bills may be available to recipients of public assistance or supplemental security income from your local social service office.

The total amount owed to Longhouse Cooperative for this account as of MM/DD/YYYY is \$XX.XX.

**Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850  
(607) 351-5736**

## 2. Budget Billing Agreement

### 2. A Budget Billing Plan (“Plan”)

**Customer’s Name:** \_\_\_\_\_ **Address:**  
**Account #:** \_\_\_\_\_

Under this Plan, Longhouse Cooperative is to provide services in return for your agreement to make payments according to the terms of this Plan.

This Plan requires that you pay \$XX.XX per month for the 12 month period starting with the billing cycle commencing on MM/DD/YYYY and ending on MM/DD/YYYY.

Such equal monthly payment is based on an estimate of your annual billing, which has been calculated by multiplying the average monthly consumption, by the current estimate of commodity prices over the above-referenced 12-month period. Your average monthly consumption is \_\_\_\_\_ kWh, based on your last 12 months actual consumption. If the service address for which you will be billed under this Plan is a new property, which has not been served or for which 12 months of data is not available, your average monthly consumption will be based on a similar property in the area in which the service address is located.

The Plan shall be subject to regular review for conformity with actual billings. Longhouse Cooperative reserves the right to recalculate such monthly payment to reflect either an increase or decrease in the average monthly consumption. Longhouse Cooperative reserves the right to recalculate your budget billing account monthly.

Each month, you will be billed the equal monthly payment and you will be required to pay such amount stated on the bill. Your bill will also inform you what your consumption for the period was, as well as the actual charge you would have incurred if you were not on the Plan. If you fail to pay the bill when due, Longhouse Cooperative reserves its right to initiate termination of your electric service pursuant to the Home Energy Fair Practices Act and the procedures outlined in this HEFPA plan.

In the last month of the Plan, Longhouse Cooperative will true up your account based on a comparison of the billing under this billing plan and the amount you would have been charged for the budget period if you were not on the plan. If you owe Longhouse Cooperative a sum of

money due to the true up, you will be billed for the amount due. If you have been over billed, you will be issued a credit to be applied to the next plan year.

[  ] **Yes! I would like Budget**

### **Billing Acceptance of Agreement**

**Customer's Signature:** \_\_\_\_\_ **Date:**

*\*Return one signed copy to Longhouse Cooperative*

**770 Elm Street**

**Ithaca, New York 14850**

*(607) 351-5736 by date*

## 2.B HEFPA Quarterly Billing Plans (“Plan”)

**Customer’s Name:** \_\_\_\_\_

**Premise Address:** \_\_\_\_\_

**Account Number:** \_\_\_\_\_

Under this plan, Longhouse Cooperative agrees to provide services in return for your agreement to make payments according to terms of this Plan.

The Customer confirms that he/she is greater than 62 years old, and that the Customer’s bills in the preceding 12 months starting on MM/DD/YY and ending on MM/DD/YY, did not exceed \$150.

Under this Plan, the Customer will receive the first bill on MM/DD/YY covering actual charges incurred during the 3-month period MM/DD/YY to MM/DD/YY, and you will receive quarterly bills thereafter on or before MM/DD/YY, MM/DD/YY, and MM/DD/YY for actual charges incurred during each such preceding 3-month period.

On the dates specified above, you will be billed for actual charges incurred and you will be required to pay such amount stated on the bill. If you fail to pay the bill when it is due, Longhouse Cooperative reserves its right to initiate termination of your electric service pursuant to the Home Energy Fair Practices Act and the procedures outlined in this HEFPA plan.

### **D Yes! I would like Quarterly Billing:**

**Customer’s Signature:** \_\_\_\_\_

**Date:**

**\*Return one signed copy to: Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850  
(607) 351-5736**

**By MM/DD/YYYY.**

### 3.

### Late Payment Procedures

Longhouse Cooperative reserves the right to charge a late payment fee. The late payment fee shall be consistent with the Longhouse Cooperative policies regarding the unpaid balance of any bill for electric service including accumulated late payment interest for electric service provided to its Shareholders/Tenants. The invoice to each Shareholder/Tenant will provide the following:

1. The amount billed
2. Late payment charge, if applicable, for past unpaid bills
3. Due date for payment after which a late payment charge will be applicable

All charges for late payments will not be imposed for a minimum of 30 days beyond a bill payment date.

If 30 days have passed since a bill payment was due and the Shareholder/Tenant has not paid the bill, Longhouse Cooperative may add a late payment charge of up to 1.5% per month on the unpaid balance to the next bill.

Late payment fees shall not apply to any charges subject of a pending complaint before Longhouse Cooperative or the Public Service Commission.

4.

## **Complaint Resolution Plan**

Regarding the resolution of complaints involving electric service, the Shareholder/ Tenant shall first present to the designated Longhouse representative, a complaint which may be in letter form or telephone call, including the action or relief requested. The representative shall investigate and respond to the complaint in writing within ten days of the receipt of the complaint. The complainant shall be advised of the disposition of the complaint and the reasons therefore.

If the complainant is dissatisfied with representative's response, he or she may request a review of said determination from the Longhouse board of directors by filing a written or verbal protest within fourteen days from the date of the response to the managing agent or representative. No particular form of protest is required.

The complainant can also contact the Public Service Commission at New York State Department of Public Service, 3 Empire State Plaza, Albany, NY 12223, or 90 Church Street, New York, New York 10007 or call their toll free HELP Hotline at 1 (800) 342-3377, access their website at [www.dps.state.ny.us](http://www.dps.state.ny.us) and file a complaint. The website can be accessed for any information on HEFPA.



## **RIGHTS AND COMPLAINT PROCEDURE**

As a Shareholder/Tenant customer for electricity you have certain rights assured by Home Energy Fair Practices Act (HEFPA).

This statement is an overview of those rights and the Cooperative's policies and procedures. The Longhouse treasurer is available to assist you at 607-351-5735. If you have an electrical emergency, please call the maintenance coordinator at (607) 339-5389. If you would like to contact us by mail, please write to us at **Longhouse Cooperative , 770 Elm Street, Ithaca, New York 14850 at (607) 351-5735).**

The Longhouse representative shall investigate and respond to the complaint within ten (10) days of receipt of the complaint. If the complaint is concerning the sub-meter malfunction we shall arrange for testing the sub-meter within ten (10) days. The complainant shall be advised of the disposition of the complaint and the reason therefore. If the complainant is dissatisfied with representative's response he/she may request a review of said determination by filing a written or verbal protest within fourteen (14) days from the date of the response to the representative.

No particular process form is required. The complainant can also contact Public Service Commission at New York State Department of Public Service, 3 Empire State Plaza, Albany, NY 12223 or 90 Church Street, New York, New York 10007 or call their toll free HELP Hotline at 1(800) 342-3377 and file a complaint. The bills you receive show the amount of kilowatts you used. You may request budget billing. Budget billing divides your electrical cost into equal monthly payments. At the end of the year you shall be responsible to pay for all electric costs in excess of your budget billing amount paid.

If you are having difficulty paying your bill please contact us by telephone or by letter in order to make a payment agreement. We can determine the length of the agreement and the amount of each monthly payment if you can show financial need. You may not have to make a down payment and installment payments become aware of such hardship we can refer you to the Department of Social Services. We will not shut off your service under any circumstances.

Payments may be as little as \$10.00 per month. Every effort will be made to help you find a way to pay your bill. Special protections may be available if you and those living with you are age 18 or younger or 62 and older, blind or disabled. Additionally, you can designate a third party as an additional contact to receive notices of past due balances.

Attached is a special protection form. Please fill it out if you qualify for any special protection described on said form and return it to Longhouse Coopeative. The special protection form should be returned to

**Longhouse Cooperative**  
**770 Elm Street**  
**Ithaca, New York 14850**  
**(607) 351-5736**

The Home Energy Fair Practices Act identifies the rights that each customer of electric service is entitled too. These rights have been identified in this Home Energy Fair Practices Act Plan. The entire Home Energy Fair Practices Act is available for your review in the Longhouse Cooperative's Management Office. Longhouse Cooperative, shall afford you all the notices and protections available to you pursuant to the Home Energy Fair Practices Act (HEFPA) before any action(s) based on non- payment is commenced.

## **5. Termination of Electric Service Plan**

Longhouse Cooperative will not terminate service to any member/resident under any circumstances.

# Past Due Reminder Notice

**Customer's Name:** \_\_\_\_\_

**Premise Address:** \_\_\_\_\_

**Account Number:** \_\_\_\_\_

On MM/DD/YY you signed a Residential Deferred Payment Agreement (DPA) which obligated you to make a down payment of \$XX.XX by MM/DD/YY and regular payments of \$XX.XX in addition to your current charges, in order to avoid termination. You have failed to comply with the terms of the Residential Deferred Payment Agreement. We are notifying you that you must meet the terms of the existing DPA by making the necessary payment within 20 calendar days of the date payment was due.

If you are unable to make payment under the terms of the Residential Deferred Payment Agreement because your financial circumstances have changed significantly due to events beyond your control, you should immediately contact us at (607) 351-5735 because a new payment agreement may be available. Assistance to pay utility bills may be available to recipients of public assistance or supplemental security income from your local social services office by calling (718) 274-4767.

The total amount owed to Longhouse Cooperative. for this account as of MM/DD/YY is: \$XX.XX.

# FAILURE TO MAKE PAYMENT NOTICE

\_\_\_\_\_ **Date**

**Customer's Name:** \_\_\_\_\_ **Address:**  
**Account #:** \_\_\_\_\_

Dear (unit owner/tenant's name):

Your account is now 90 days overdue.

**PLEASE REMIT \$XX.XX BY MM/DD/YYYY .**

If you are unable to make payment because your financial circumstances have changed significantly due to events beyond your control, please contact us at (607) 351-5735. If you or anyone in your household meets any of the following conditions, please contact us: medical emergency, elderly, blind or disabled.

Sincerely,

Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850

\*Note: this notice is required by the PSC as part of a HEFPA compliance plan, but it can never be used because Longhouse Cooperative does not reserve the right to terminate electrical service in its submetering lease addendum.

## NOTIFICATION TO SOCIAL SERVICES OF CUSTOMERS INABILITY TO PAY

Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850

Customer's Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Account No. \_\_\_\_\_

Customer has been sent a final notice of termination. If the total payment due of \$XX.XX is not paid by MM/DD/YYYY, termination of service may occur anytime after MM/DD/YYYY.

\*Note: this notice is required by the PSC as part of a HEFPA compliance plan, but it can never be used because Longhouse Cooperative does not reserve the right to terminate electrical service in its submetering lease addendum.

## FINAL TERMINATION NOTICE

\_\_\_\_\_ **Date**

**Customer's Name:** \_\_\_\_\_ **Address:**  
**Account #:** \_\_\_\_\_

Dear (Customer's name):

By letter, dated MM/DD/YYYY, Longhouse Cooperative notified you that your failure to remit the past due amount of \$XX.XX by MM/DD/YYYY would result in Longhouse Cooperative terminating your service. Our records indicated that we have not received your payment. Please remit \$XX.XX or your service will be terminated after MM/DD/YYYY.

If you disagree with the amount due, you may call or write

**Longhouse Cooperative**

**770 Elm Street**

**Ithaca, New York 14850**

**(607) 351-5736**

or you may contact the Public Service Commission at 1(800)342-3377.

THIS IS A FINAL TERMINATION NOTICE. PLEASE BRING THIS NOTICE TO THE ATTENTION OF NORTH QUEENSVIEW HOMES, INC. WHEN PAYING THIS BILL.

**PLEASE REMIT \$XX.XX BY MM/DD/YYYY TO AVOID TERMINATION OF YOUR ELECTRIC SERVICE.**

If you are unable to make payment because your financial circumstances have changed significantly due to events beyond your control, please contact us at (607) 351-5735. If

you or anyone in your household meets any of the following conditions, please contact us: medical emergency, elderly, blind or disabled.

Sincerely,

Longhouse Cooperative  
770 Elm Street  
Ithaca, New York 14850



## **6. Disclosure Statement**

Longhouse Cooperative certifies that the method of rate calculation, rate cap, complaint procedures, tenant protections and the enforcement mechanism will be incorporated in plain language in all current and future documents for the shareholders of Longhouse Cooperative.

All apartments shall be billed an equal share of the fixed cost of being connected to the grid through a NYSEG meter and a charge per kWhr sufficient to cover amortization of the solar array and any charges from NYSEG that are based on usage. These charges will be based on the number of kWhrs used as indicated by the Shareholders meter. This charge will be compared to the charge if the shareholder was an SC-1 customer of NYSEG. The lower of the two charges will be the charge sent to the shareholder.

Each submeter will be read monthly and each Tenant will be billed monthly for electric service. Billing information will be in plain language and will include the billing period, amount of consumption, taxes, service charges, charge for the period and total amount due.

# Attachment D

## Submeter Identification Form



**New York State Public Service Commission  
Office of Consumer Policy**



**Submetering Identification Form**

Name of Entity: <i>Longhouse Cooperative Inc.</i>			Corporate Address: <i>770 Elm St. EXT.</i>		
City: <i>ITHACA</i>	State: <i>NY</i>	Zip: <i>14850</i>	Web Site:		
Phone: <i>607-334-5384</i>			Utility Account Number:		
Chief Executive: <i>Wynelle Stejn</i>			Account Holder Name:		
Phone: <i>607-351-5585</i>			E-mail:		
DPS Case Number:					

**Primary Regulatory Complaint Contact**

**Secondary Regulatory Complaint Contact**

Name: <i>Leni Hochman</i>			Name:		
Phone: <i>607-351-5735</i>			Phone:		
Fax:			Fax:		
E-mail: <i>leni@longhousecoop.org</i>			E-mail:		
Address: <i>772 Elm St. EXT.</i>			Address:		
City: <i>ITHACA</i>	State: <i>NY</i>	Zip: <i>14850</i>	City:	State:	Zip:

*We do not send complaints to personal e-mail addresses. A shared e-mail address must be provided or the transmission will default to the fax number listed above. Please enter the e-mail address, if any, to which we should send complaints: leni@longhousecoop.org*

Name of Property: <i>Longhouse COOP</i>			Service Address: <i>772 Elm St. EXT.</i>		
City: <i>ITHACA</i>	State: <i>NY</i>	Zip: <i>14850</i>			
Electric Heat? <input checked="" type="checkbox"/> <i>Yes</i>			Electric Hot Water? <input checked="" type="checkbox"/> <i>IN 2 units</i>		
# Units Occupied by: Sr. Citizens <i>3</i> Disabled <input type="checkbox"/>			Total # of Units <i>9</i>		
Rent Stabilized <input type="checkbox"/>	# Rent Controlled <input type="checkbox"/>	# Rent-Regulated <input type="checkbox"/>	# Market Rate <input type="checkbox"/>		
Rental: <input checked="" type="checkbox"/>	Condo: <input checked="" type="checkbox"/>	Co-Op: <input checked="" type="checkbox"/>			
# Low Income <input type="checkbox"/>	# Section 8 <input type="checkbox"/>	# Landlord Assist Program <input type="checkbox"/>	# Other <input type="checkbox"/>		
Submeter / Billing Agent:			Address:		
City:	State:	Zip:			
Contact Name:		Contact Phone:	Contact Fax:		

**Please return this form within 5 days to:**

Hon. Kathleen H. Burgess, Secretary to the Commission  
NYS Public Service Commission  
3 Empire State Plaza  
Albany, NY 12223-1350  
E-mail: secretary@dps.ny.gov

(Rev. 9/20/13)

**Changes in contact information should be submitted within 5 days of any personnel change.**

# Attachment E

## Submetering Lease Addendum

## **Longhouse Lease Rider: Electrical Submetering**

1. Provision of electricity. Lessor shall provide electricity to Lessee from a combination of power produced from a solar array on Longhouse property and power purchased from NYSEG, the local electric utility.
2. Determination of usage. Power usage by the Lessee will be determined by a submeter owned and maintained by the Lessor which measures the usage in Lessor's unit.
3. Charges. Lessor will charge Lessee monthly for electrical usage calculated as follows:
  1. A fixed fee per kwh will be charged for power provided from the solar array.
  2. All fixed charges from NYSEG that are not based on usage will be divided equally between the submeters at Longhouse.
  3. NYSEG charges based on usage will be divided among all the submeters at Longhouse proportionally to usage at that meter during the billing period.
4. In no event will the total rate for a billing period exceed the rates and charges of the distribution utility for delivery and commodity in that billing period to similarly-situated, direct-metered residential customers (see 16 NYCRR § 96.1 [i]).
4. Billing. Lessor will provide Lessee with an itemized billing showing usage and how the charges were arrived at.
5. Payment. Payment for electrical usage shall be due at the same time as monthly rent payments, but does not constitute additional rent. Lessee will pay electrical bills to Lessor on the terms and at the times herein provided, without any deduction on account of any set-off or claim that Lessee may have against the Lessor.
6. Default. Failure of Lessee to pay an electrical bill shall be treated in the same way as failure to meet any other obligation as a member of Longhouse Cooperative (see paragraph 11 of this lease and paragraph 10 of Article 8 of the Longhouse bylaws). Lessor will not terminate Lessee's electrical service as a way to compel payment.
7. HEFPA Rights. Lessee's rights under the Home Energy Fair Practices Act, including complaint procedures, are contained in the attached HEFPA Compliance Plan.
8. Refunds. Submetering refunds will be credited to submetered residents affected by the submeterer's actions that led to such refunds provided that the submeterer has such contact information for such resident.

# Attachment F

## Notification to NYSEG

# Longhouse Cooperative

770 Elm St. Extension, Ithaca, NY 14850

607-339-5384 Longhousetim@gmail.com

11/21/15

Ms. Kathy Grande  
New York State Electric and Gas Corporation  
P.O. Box 5224  
Binghamton, New York 13902-5224

**Re: Petition to submeter at Longhouse Cooperative, 770 Elm St. Extension, Ithaca, NY 14850 in the territory of New York State Electric and Gas.**

Dear Ms. Grande:

Please be advised that on 11/21/15 Longhouse Cooperative submitted to the New York State Public Service Commission a petition to submeter electricity at the above named property. We have been working with Rick Hansen in your Ithaca office, who is fully informed about this project.

Enclosed for your convenience is a copy of this petition.

Sincerely,



Tim Joseph  
Maintenance and Infrastructure Coordinator

# Attachment G

## Solar Array



**PHOTOVOLTAIC SYSTEM**

**SYSTEM SIZE**

DC KW STC 41.34 kW

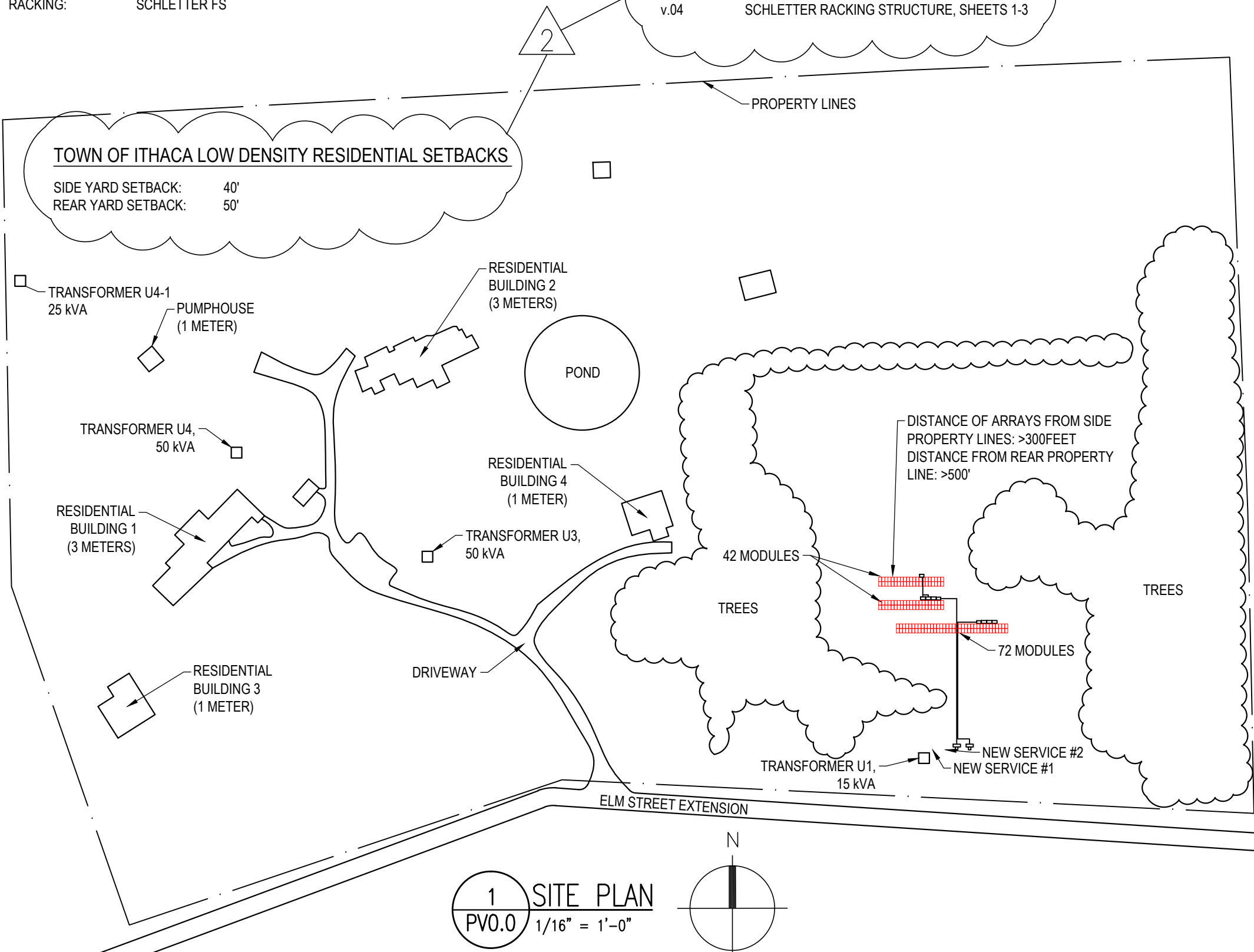
**EQUIPMENT**

PV MODULES: (156) KYOCERA KU265GX-6MCA, 265W  
 INVERTER(S): (3) SMA SUNNYBOY SB7700TL-22-US, 7000W  
 (3) SMA SUNNYBOY SB6000TL-22-US, 6000W  
 RACKING: SCHLETTNER FS

FOR INSTALLER USE ONLY:  
 POST INSTALL SUNEYES REQUIRED?  YES  NO

**SHEET INDEX**

NUMBER	TITLE
PV0.0	SITE PLAN
PV0.1	SITE PLAN DETAIL
PV0.2	STRING DETAIL
PV1.0	NOTES
PV3.0	84 MODULE ELECTRICAL 3-LINE DIAGRAM
PV3.1	72 MODULE ELECTRICAL 3-LINE DIAGRAM
v.04	SCHLETTNER RACKING STRUCTURE, SHEETS 1-3



**TOWN OF ITHACA LOW DENSITY RESIDENTIAL SETBACKS**

SIDE YARD SETBACK: 40'  
 REAR YARD SETBACK: 50'

**APPLICABLE CODES**

THE INSTALLATION OF SOLAR ARRAYS AND PV POWER SYSTEMS SHALL BE IN ACCORDANCE WITH THE 2010 NYS BUILDING CODE

**JURISDICTIONAL INFORMATION**

JURISDICTION: TOWN OF ITHACA  
 ADDRESS:  
 PHONE: 607-273-1783

**NOTES/SCOPE OF WORK**

**DESCRIPTION:**  
 INSTALL 41.34 KW GROUND MOUNTED SOLAR PHOTOVOLTAIC SYSTEM

- SCOPE OF WORK:**
- INSTALL TWO NEW SERVICES AT TRANSFORMER U1
  - BACKFEED 84 MODULES TO NEW SERVICE #1 LOCATED AT TRANSFORMER U1
  - BACKFEED 72 MODULES TO NEW SERVICE #2 LOCATED AT TRANSFORMER U1
  - COMBINE ALL SERVICES AT TRANSFORMER U3 SO THAT THEY ARE METERED THROUGH ONE MASTER METER. REPLACE NYSEG METERS WITH EASY READ ELECTROMECHANICAL METERS AND INSTALL EGAUGE MONITORING.
  - COMBINE ALL SERVICES AT TRANSFORMER U4 SO THAT THEY ARE METERED THROUGH ONE MASTER METER. REPLACE NYSEG METERS WITH EASY READ ELECTROMECHANICAL METERS AND INSTALL EGAUGE MONITORING.



LONGHOUSE COOPERATIVE  
 770 ELM STREET EXTENSION  
 ITHACA, NY 14850

REV	ISSUED FOR	DATE
0	NYSERDA	6/11/15
1	NYSEG	8/6/15
2	PERMIT	9/16/15

TITLE:  
**SITE PLAN**

DESIGNED BY: NK  
 CHECKED BY:  
 SCALE: AS NOTED  
 SHEET NUMBER:

**PV0.0**

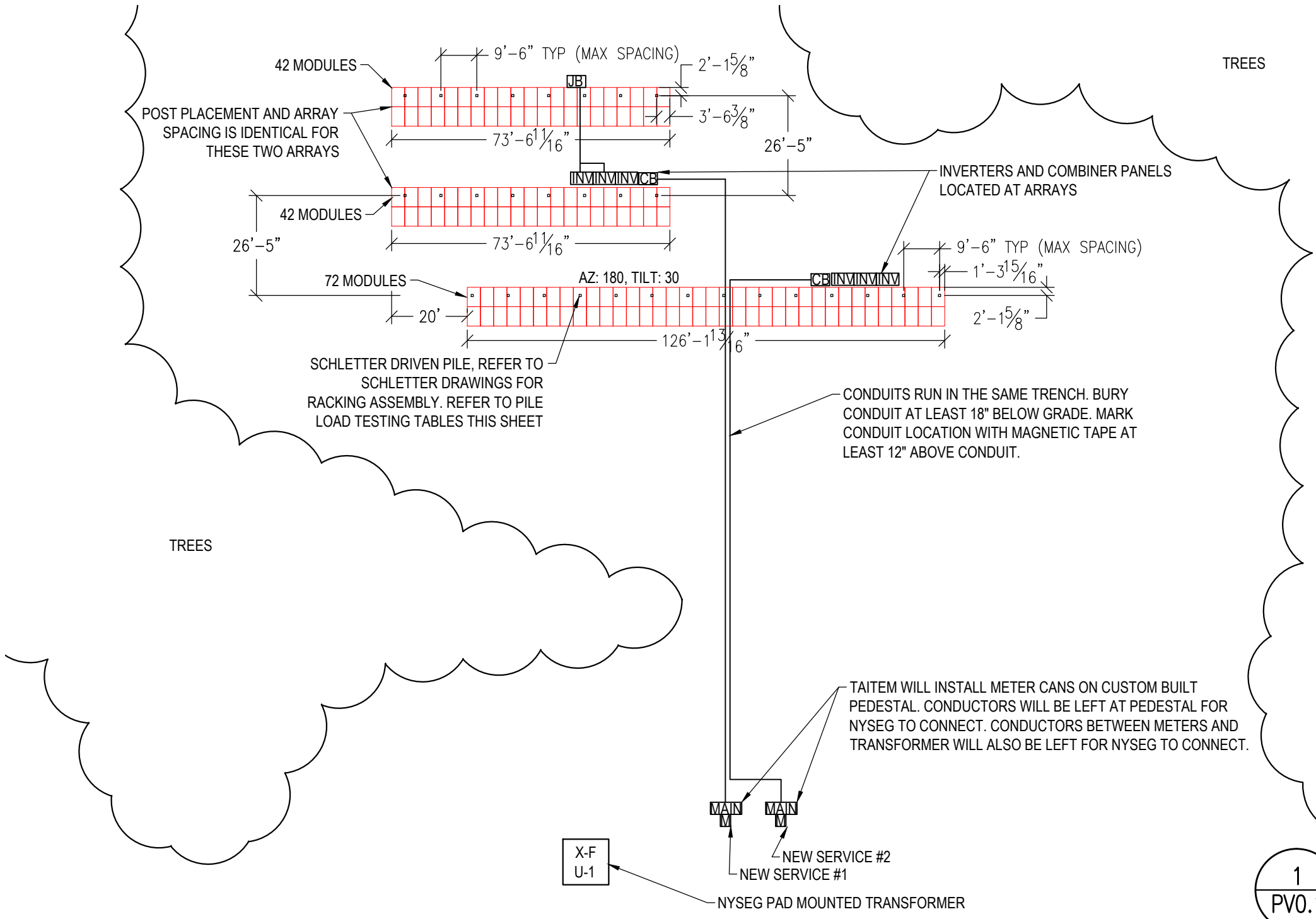
1 SITE PLAN  
 PV0.0 1/16" = 1'-0"

# SCHLETTER GROUND MOUNT TESTING PARAMETERS (ASCE 7-05) V = 90MPH, GROUND SNOW = 40PSF

	POUNDS	BAR	MAXIMUM DEFLECTION
REQUIRED TENSION CAPACITY	5,220	210	0.75"
REQUIRED SHEAR/LATERAL CAPACITY	3,080	125	0.75"



KEY	
—	CONDUIT RUN
□	SOLAR MODULE
MAIN	MAIN SERVICE DISCO
M	UTILITY METER
SD-XF	STEP-DOWN X-FORMER
INV	INVERTER
#	# STRING CONFIG.
△	SUNEYE LOCATION
SUB	SUBPANEL
DC	DC DISCONNECT
AC	AC DISCONNECT
JB	JUNCTION BOX
μ	MONITORING UNIT
CB	COMBINER PANEL
□	ROOF OBSTRUCTION



### SCHLETTER GROUND MOUNT TEST RESULTS

TEST PRESSURE	DEFLECTION	
	TENSION TEST	LATERAL TEST
20 BAR		
40 BAR		
60 BAR		
80 BAR		
100 BAR		
120 BAR		
140 BAR		
160 BAR		
180 BAR		
200 BAR		
220 BAR		

LONGHOUSE COOPERATIVE  
770 ELM STREET EXTENSION  
ITHACA, NY 14850

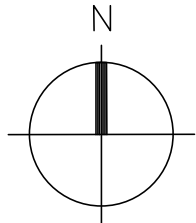
REV	ISSUED FOR	DATE
0	NYSERDA	6/11/15
1	NYSEG	8/6/15
2	PERMIT	9/16/15

TITLE:  
**SITE PLAN DETAIL**

DESIGNED BY: NK  
CHECKED BY: AEL  
SCALE: AS NOTED

SHEET NUMBER:  
**PV0.1**

1 SITE PLAN DETAIL  
PV0.1 1/32" = 1'-0"



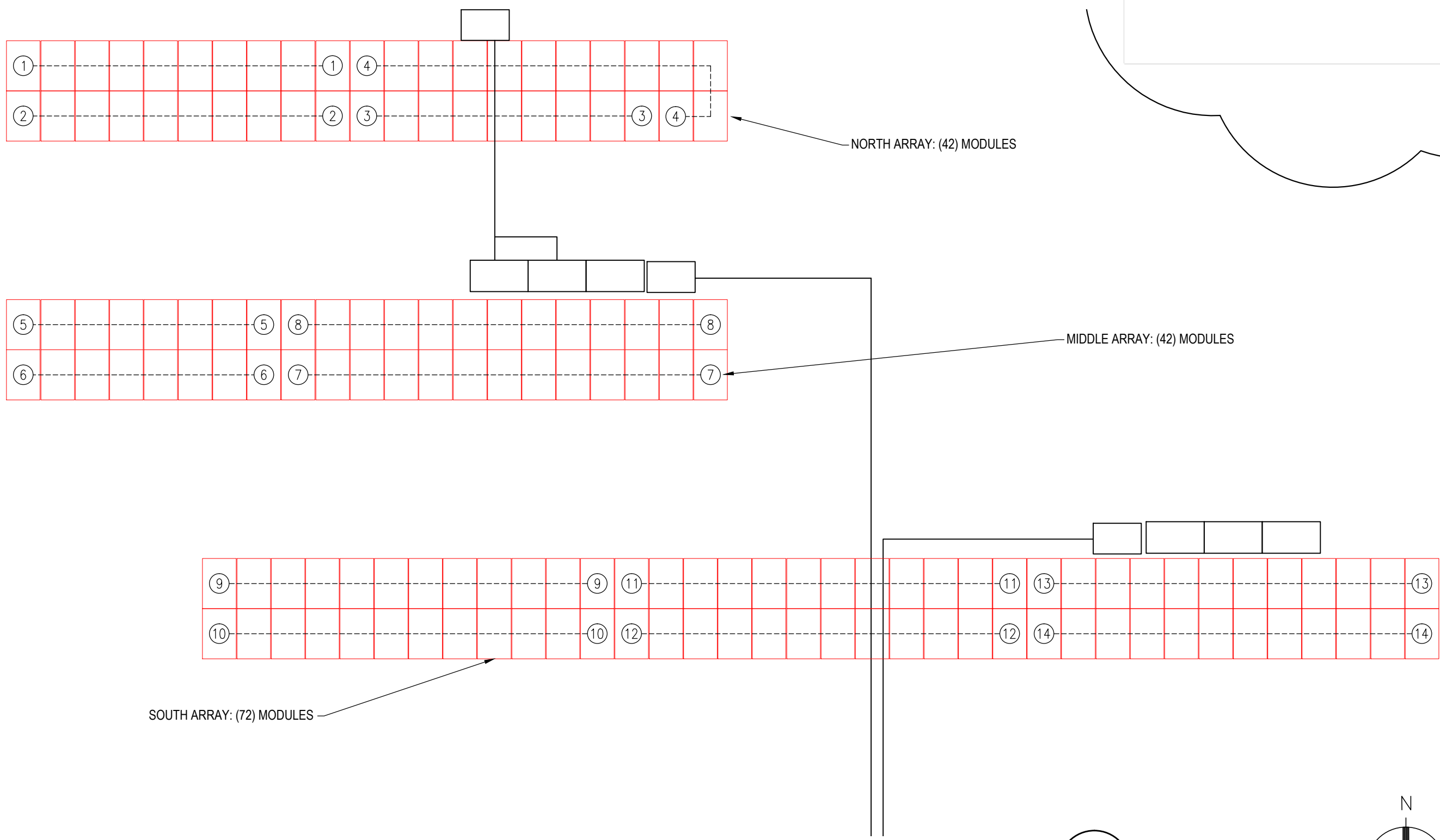
LONGHOUSE COOPERATIVE  
 770 ELM STREET EXTENSION  
 ITHACA, NY 14850

REV	ISSUED FOR	DATE
0	NYSERDA	6/11/15
1	NYSEG	8/6/15
2	PERMIT	9/16/15

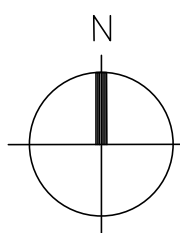
TITLE:  
**STRING DETAIL**

DESIGNED BY: AEL  
 CHECKED BY:  
 SCALE: AS NOTED  
 SHEET NUMBER:

**PV0.2**



1 SITE PLAN DETAIL  
 PV0.1 3/32" = 1'-0"



**GENERAL INSTALLATION NOTES:**

**BONDING & GROUNDING**

1. USE STEEL LOCKNUTS FOR ALL METAL CONDUIT FITTINGS.
2. BOND ALL METAL CONDUIT:
  - a. WHEN GEC ENCLOSED: USE A GROUNDING BUSHING ON BOTH ENDS OF EACH CONDUIT RUN, WITH THE GEC RUN CONTINUOUSLY THROUGH THE BUSHING LUGS. EXCEPTION: SHORT NON-FERROUS NIPPLES MAY BONDED USING STEEL LOCKNUTS IF NO RINGED KNOCKOUT ON AT LEAST ONE END.
  - b. WHEN NO GEC ENCLOSED: USE AT LEAST ONE GROUNDING BUSHING PER CONDUIT RUN, INSTALLED IN THE MOST ACCESSIBLE LOCATION. EXCEPTION: SHORT METAL NIPPLES MAY BONDED USING STEEL LOCKNUTS IF NO RINGED KNOCKOUT ON AT LEAST ONE END.
3. TERMINATE METAL CONDUIT ONLY IN LISTED JUNCTION BOXES AND BOND AS DESCRIBED ABOVE, SHORT SECTIONS OF CONDUIT RUN BETWEEN ROOF PV SUB-ARRAYS FOR THE PURPOSE OF SUPPORTING PV WIRE SHALL BE EVALUATED ON A CASE BY CASE BASIS. DO NOT INSTALL BONDING BUSHINGS EXPOSED TO MOISTURE AND WEATHER UNLESS LISTED FOR OUTDOOR USE.
4. BOND ALL METAL ENCLOSURES:
  - a. USE THE MANUFACTURER'S BONDING KIT/BUS FOR ALL METAL BOXES AND ENCLOSURES.
  - b. USE A BONDING JUMPER OR OTHER BEST WAY FOR DIRECTION CONNECTION FROM EGC TO THE GROUND BUS. OUTDOOR RATED GREEN WIRE NUTS ARE PERMISSIBLE FOR SPLICING EGC IF NOT A COMBINED EGC/GEC.
5. INSTALL A GROUNDING ELECTRODE CONDUCTOR (GEC) ON ALL INVERTERS UNLESS OTHERWISE NOTED.
6. GROUNDING ELECTRODE CONDUCTORS (GEC) MUST BE CONTINUOUS AND IRREVERSIBLY SPLICED FROM THE INVERTER(S) TO THE TERMINATION POINT DESIGNATED ON THE 3-LINE DRAWING.
7. WHEN MAKING A SUPPLY SIDE CONNECTION, BOND THE AC NEUTRAL AND GROUND AT THE SERVICE POINT AC DISCONNECT SWITCH USING THE APPROPRIATE BONDING SCREW.
8. BOND AGRICULTURAL METAL ROOF PANELS UNDER ARRAY TOGETHER USING THREADED STAINLESS STEEL 10-32 SCREW AND NUT WITH STAR WASHERS BOTH SIDES. MAKE A SINGLE EGC CONNECTION FROM ONE OF THE BONDED ROOF PANELS TO #6 AWG BARE COPPER CONDUCTOR USING A LISTED UNDERGROUND/OUTDOOR LAY-IN LUG. MAKE ALL BONDS EITHER AT THE LOWER DRIP EDGE OF THE ROOF OR UNDER A RIDGE CAP.
9. DO NOT RUN BARE COPPER EQUIPMENT GROUNDING CONDUCTOR (EGC) IN CONTACT WITH OTHER METAL, METAL CONDUIT (INSIDE OR OUTSIDE OF CONDUIT).

**GENERAL PRACTICES**

10. ALL PV ARRAY CONDUCTORS SHALL BE CLOSELY SECURED TO PV RACK WITH ADEQUATE STRAIN RELIEF. NO CONDUCTORS SHALL BE READILY ACCESSIBLE, SUBJECT TO PHYSICAL DAMAGE, IN CONTACT WITH ROOF, OR DROOPING BETWEEN RACK AND ROOF.
11. INVERTER ARC FAULT AND GROUND FAULT PROTECTION SHALL BE ENABLED.
12. AC DISCONNECT SWITCHES SHALL BE WIRED WITH UTILITY ON "LINE" CONNECTION AND INVERTER OUTPUT ON "LOAD" SO THAT SWITCH BLADES AND FUSES ARE DE-ENERGIZED WHEN SWITCH IS OPEN.
13. CONDUIT PENETRATIONS LEADING FROM OUTSIDE TO INSIDE STRUCTURES SHALL BE SEALED AT THE JUNCTION BOX OF PULL BODY NEAREST THE PENETRATION.
14. DOUBLE-LUGGING (2 WIRES ON ONE LUG) IS PERMITTED ONLY WHERE SWITCH OR CONNECTOR INSTRUCTIONS SPECIFICALLY ALLOW IT.
15. DISCONNECT SWITCH, CIRCUIT BREAKER, AND SERVICE PANEL ENCLOSURES SHALL BE WIRED ONLY IN THE EXACT WAY THEY ARE DESIGNED. DO NOT ADD ADDITIONAL COMBINER HARDWARE, DIN RAIL CONNECTORS, ETC., INSIDE ENCLOSURES.  
EXCEPTIONS: WIRE NUTS FOR EGC; POLARIS TYPE CONNECTORS.
16. DO NOT ATTACH OR WIRE TIE ANY CONDUCTORS (EGC, COMMUNICATIONS, ETC.) TO ANY CONDUIT.
17. ALL SERVICE SWITCHES, CIRCUIT BREAKERS, AND FUSES SHALL BE 22000 AMPERES INTERRUPTING RATING (AIR).
18. ALL UNDERGROUND CONDUIT SHALL BE BURIED A MINIMUM OF 18" BELOW THE SURFACE WITH MAGNETIC WARNING TAPE BURIED ABOVE IT. DEEPER BURIAL WILL BE NOTED AS REQUIRED ON PLANSETS.
19. DO NOT DRILL WEEP HOLES IN JUNCTION BOXES. USE APPROPRIATE NEMA RATING BOX WITH GOOD CARE AND WORKMANSHIP TO INSTALL ALL SEALS AND WIRE GROMMETS CORRECTLY.



LONGHOUSE COOPERATIVE  
 770 ELM STREET EXTENSION  
 ITHACA, NY 14850

REV	ISSUED FOR	DATE
0	NYSERDA	6/11/15
1	NYSEG	8/6/15
2	PERMIT	9/16/15

TITLE:  
**NOTES**

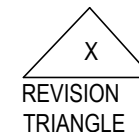
DESIGNED BY: TR

CHECKED BY: NK

SCALE: AS NOTED

SHEET NUMBER:

**PV1.0**



2

LONGHOUSE COOPERATIVE  
770 ELM STREET EXTENSION  
ITHACA, NY 14850

REV	ISSUED FOR	DATE
0	NYSERDA	6/11/15
1	NYSEG	8/6/15
2	PERMIT	9/16/15

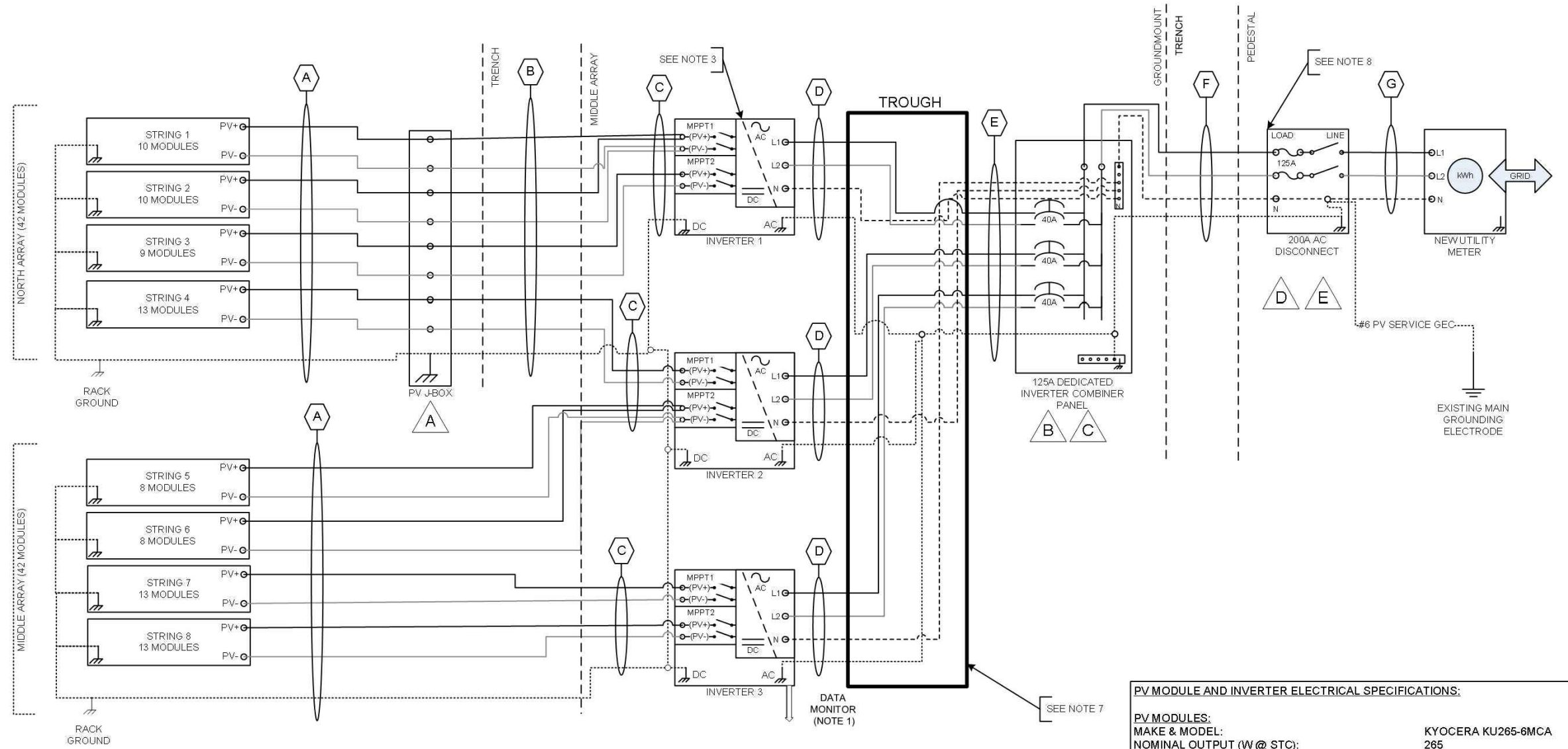
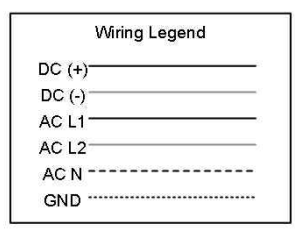
TITLE:  
**84 MODULE  
ELECTRICAL  
3-LINE DIAGRAM**

DESIGNED BY: NK  
CHECKED BY: AEL  
SCALE: AS NOTED  
SHEET NUMBER:

**PV3.0**

X	CONDUCTORS	CONDUIT	INSTALLATION NOTES
A	(8) #10 PV-WIRE, (1) #6 BARE CU EGC	NONE	
B	(8) #10 THWN-2, (1) #10 THWN-2 EGC	1 in. PVC	SEE NOTES 4 & 5
C	(6) #10 THWN-2, (1) #10 THWN-2 EGC	3/4 in. PVC to RACEWAY	SEE NOTE 4
D	(3) #8 THWN-2, (1) #8 THWN-2 EGC/GEC	3/4 in. PVC to RACEWAY	SEE NOTE 4
E	(9) #8 THWN-2, (1) #8 THWN-2 EGC/GEC	1-1/4 in. PVC to RACEWAY	SEE NOTE 4
F	(3) 1/0 THWN-2, (1) #6 THWN-2 EGC/GEC	1-1/2" in. PVC	SEE NOTES 4 & 6
G	(3) 2/0 THWN-2	1-1/2" in. PVC	SEE NOTE 4

- PV3.0 SPECIFIC INSTALLATION NOTES. COMPONENTS ARE NEW UNLESS MARKED AS "EXISTING" ON DRAWING**
- INSTALL SYSTEM MONITORING USING SMA WEBCONNECT CARDS AND A ZIGBEE ANTENNA.
  - UNGROUND PV ARRAY AND INVERTER. DC GEC NOT REQUIRED. INVERTER AC EGC OVERSIZED TO #8 WIRE FOR SURGE PROTECTION.
  - INSTALLERS TO CHANGE THE FOLLOWING INVERTER UNDERFREQUENCY SETTINGS: "UPPER MINIMUM THRESHOLD" TO BE CHANGED FROM 59.3HZ TO 57.0HZ, AND "UPPER MINIMUM THRESHOLD TRIPPING TIME" TO BE CHANGED FROM 160MS TO 500MS.
  - CONDUIT SIZE NOTED IS THE MINIMUM DIAMETER ALLOWABLE PER NEC. OVERSIZING FOR AN EASIER WIRE PULL IS AT INSTALLER'S DISCRETION.
  - TRENCH LENGTH BETWEEN ARRAYS IS APPROXIMATELY 35 FEET LONG.
  - COMBINER OUTPUT FROM NORTH AND MIDDLE ARRAYS WILL BE RUN IN SAME TRENCH WITH COMBINER PANEL OUTPUT FROM LARGER SOUTH ARRAY. TRENCH LENGTH IS APPROXIMATELY 200 FEET LONG.
  - WIRING TROUGHS MAY BE USED FOR BOTH AC AND DC PV CIRCUITS. ALL MODULE OUTPUT, INVERTER INPUT AND OUTPUT, AND CONDUCTORS OF MULTIPLE INVERTERS SHALL BE GROUPED AND IDENTIFIED AT ALL TERMINATION, CONNECTION, AND SPLICE POINTS. DO NOT RUN NON-PV CIRCUITS IN TROUGH WITHOUT CONSULTING DESIGN ENGINEER.
  - MAIN AC DISCONNECT FOR SUPPLY SIDE PV CONNECTION SHALL BE SERVICE RATED. INSTALL MAIN BONDING JUMPER SCREW IN NEUTRAL BUS. INSTALL NEW SERVICE GROUNDING ELECTRODE CONDUCTOR UNSPLICED OR IRREVERSIBLY SPLICED FROM DISCONNECT NEUTRAL BUS AND TERMINATED WITH CRIMP TO THE EXISTING GROUNDING ELECTRODE CONDUCTOR. GEC SHALL NOT BE LANDED ON EQUIPMENT GROUNDING BUS OF DISCONNECT OR OTHER SERVICE EQUIPMENT.



A	TYPE	MAKE	MODEL	QUANTITY
A	600V, PASS THROUGH JUNCTION BOX (NEMA 4X)	MOTION TECH.	MT-JB-7X7-4	1
B	240V, 125A, 1PH, 8SP, 12CT HOM ELINE LOAD CENTER, CONV LUGS	SQUARE D	HOM 816L 125PRB	1
C	240V, 40A, 2-POLE BREAKER, HOM ELINE	SQUARE D	HOM 240	3
D	FUSIBLE, 240V, 200A 2-POLE DISCONNECT (NEMA 3R)	SQUARE D	D224NRB	1
E	250VAC, 125A, UL CLASS RK5 FUSE	BUSSMAN	FRN-R-125	2

**PV MODULE AND INVERTER ELECTRICAL SPECIFICATIONS:**

<b>PV MODULES:</b>	
MAKE & MODEL:	KYOCERA KU265-6MCA
NOMINAL OUTPUT (W @ STC):	265
VMPP (V):	31
VOC(V):	38.3
IMPP (A):	8.55
ISC (A):	9.26
VOC temp coef (%/degC):	-0.36
NUMBER OF MODULES	84
TOTAL STC SYSTEM POWER (DC KW)	22.26
<b>INVERTER:</b>	
MAKE & MODEL:	SMA SB7700TL-US-22
AC OPERATING VOLTAGE (VAC):	240
MAX CONTINUOUS CURRENT (AAC):	32
MAX INPUT VOLTAGE (VDC):	600

2

LONGHOUSE COOPERATIVE  
770 ELM STREET EXTENSION  
ITHACA, NY 14850

REV	ISSUED FOR	DATE
0	NYSERDA	6/11/15
1	NYSEG	8/6/15
2	PERMIT	9/16/15

TITLE:  
**72 MODULE  
ELECTRICAL  
3-LINE DIAGRAM**

DESIGNED BY: NK

CHECKED BY: AEL

SCALE: AS NOTED

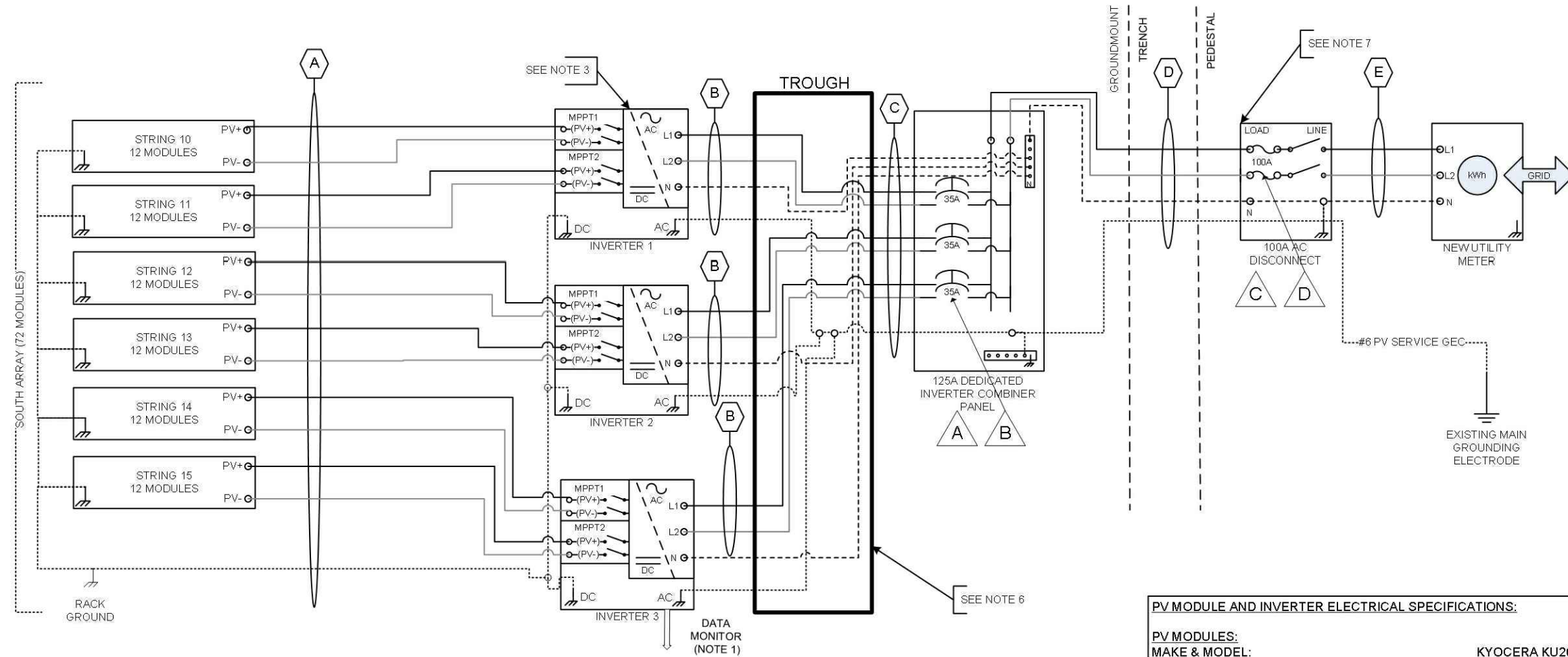
SHEET NUMBER:

**PV3.1**

CONDUCTOR & CONDUIT SCHEDULE			
TAG	CONDUCTORS	CONDUIT	INSTALLATION NOTES
A	(12) #10 PV-WIRE, (1) #6 BARE CU EGC	NONE	
B	(3) #8 THWN-2, (1) #8 THWN-2 EGC/GEC	3/4 in. PVC TO RACEWAY	SEE NOTES 2 & 4
C	(9) #8 THWN-2, (1) #8 THWN-2 EGC/GEC	1-1/4 in. PVC TO RACEWAY	SEE NOTE 4
D	(3) #1 THWN-2, (1) #6 THWN-2 EGC/GEC	1-1/2 in. PVC TO RACEWAY	SEE NOTES 4 & 5
E	(3) #1 THWN-2	1-1/4 in. PVC	SEE NOTE 4

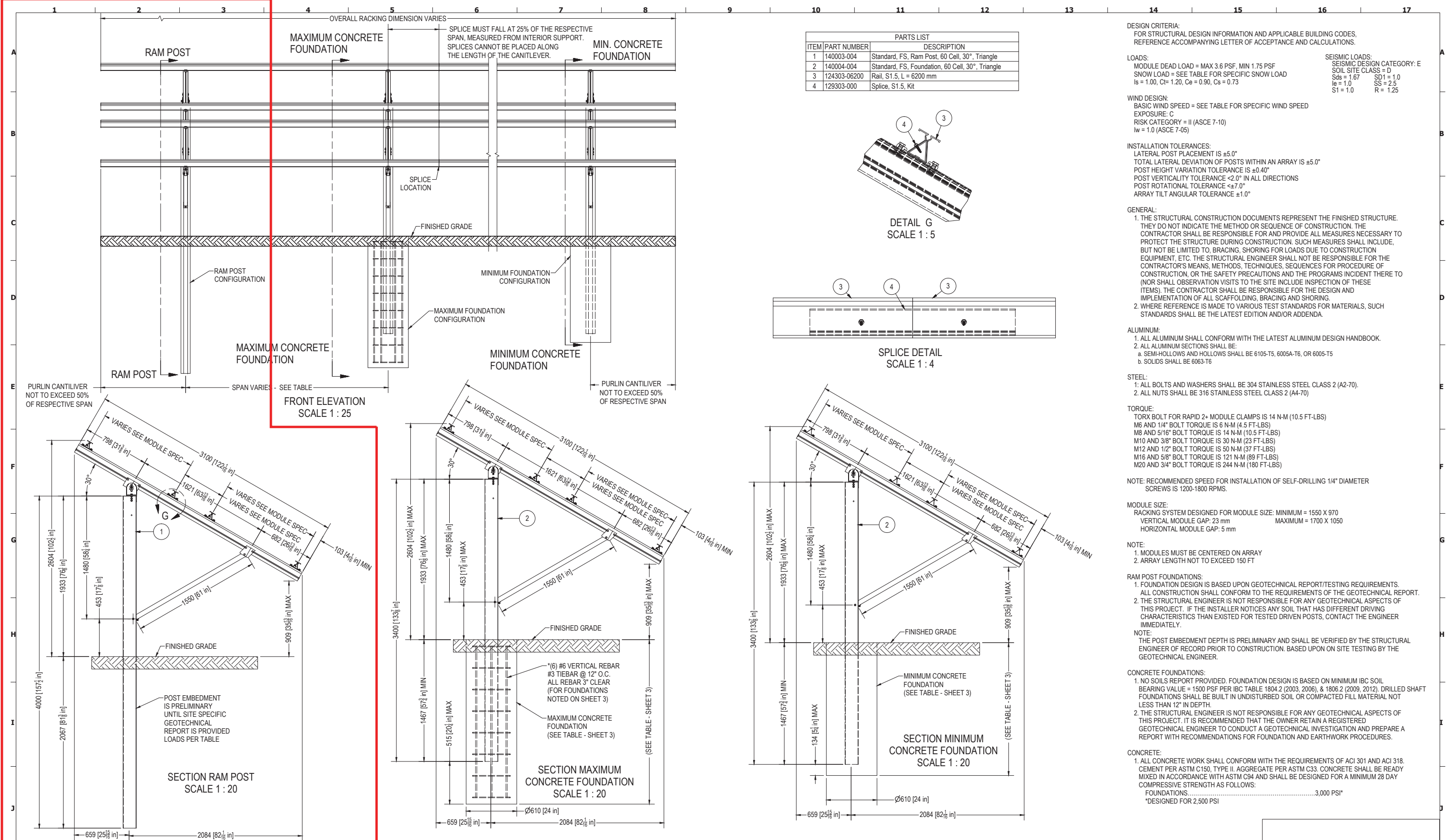
- PV3.0 SPECIFIC INSTALLATION NOTES. COMPONENTS ARE NEW UNLESS MARKED AS "EXISTING" ON DRAWING.**
- INSTALL SYSTEM MONITORING USING SMA WEBCONNECT CARDS AND A ZIGBEE ANTENNA.
  - UNGROUND PV ARRAY AND INVERTER. DC GEC NOT REQUIRED. INVERTER AC EGC OVERSIZED TO #8 WIRE FOR SURGE PROTECTION.
  - INSTALLERS TO CHANGE THE FOLLOWING INVERTER UNDERFREQUENCY SETTINGS: "UPPER MINIMUM THRESHOLD" TO BE CHANGED FROM 59.3HZ TO 57.0HZ, AND "UPPER MINIMUM THRESHOLD TRIPPING TIME" TO BE CHANGED FROM 160MS TO 500MS.
  - CONDUIT SIZE NOTED IS THE MINIMUM DIAMETER ALLOWABLE PER NEC. OVERSIZING FOR AN EASIER WIRE PULL IS AT INSTALLER'S DISCRETION.
  - COMBINER OUTPUT FROM SOUTH ARRAY WILL BE RUN IN SAME TRENCH WITH COMBINER PANEL OUTPUT FROM TWO SMALLER ARRAYS. TRENCH LENGTH IS APPROXIMATELY 200 FEET.
  - WIRING TROUGHS MAY BE USED FOR BOTH AC AND DC PV CIRCUITS. ALL MODULE OUTPUT, INVERTER INPUT AND OUTPUT, AND CONDUCTORS OF MULTIPLE INVERTERS SHALL BE GROUPED AND IDENTIFIED AT ALL TERMINATION, CONNECTION, AND SPLICE POINTS. DO NOT RUN NON-PV CIRCUITS IN TROUGH WITHOUT CONSULTING DESIGN ENGINEER.
  - MAIN AC DISCONNECT FOR SUPPLY SIDE PV CONNECTION SHALL BE SERVICE RATED. INSTALL MAIN BONDING JUMPER SCREW IN NEUTRAL BUS. INSTALL NEW SERVICE GROUNDING ELECTRODE CONDUCTOR UNSPLICED OR IRREVERSIBLY SPLICED FROM DISCONNECT NEUTRAL BUS AND TERMINATED WITH CRIMP TO THE EXISTING GROUNDING ELECTRODE CONDUCTOR. GEC SHALL NOT BE LANDED ON EQUIPMENT GROUNDING BUS OF DISCONNECT OR OTHER SERVICE EQUIPMENT.

WIRING LEGEND	
DC (+)	—————
DC (-)	—————
AC L1	—————
AC L2	—————
AC N	- - - - -
GND	.....



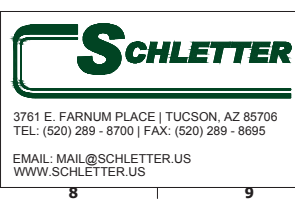
EQUIPMENT SCHEDULE				
△	TYPE	MAKE	MODEL	QUANTITY
A	240V, 125A, 1PH, 8SP, 12CT HOMELINE LOAD CENTER, CONV LUGS	SQUARE D	HOM816L125PRB	1
B	240V, 35A, 2-POLE BREAKER, HOMELINE	SQUARE D	HOM235	3
C	FUSIBLE 240V, 100A 2-POLE DISCONNECT (NEMA 3R)	SQUARE D	D223NRB	1
D	250VAC, 100A, UL CLASS RK5 FUSE	BUSSMAN	FRN-R-100	2

PV MODULE AND INVERTER ELECTRICAL SPECIFICATIONS:	
<b>PV MODULES:</b>	
MAKE & MODEL:	KYOCERA KU265-6MCA
NOMINAL OUTPUT (W @ STC):	265
VMPP (V):	31
VOC (V):	38.3
IMPP (A):	8.55
ISC (A):	9.26
VOC temp coef (%/degC):	-0.36
NUMBER OF MODULES:	72
TOTAL STC SYSTEM POWER (DC kW):	19.08
<b>INVERTER:</b>	
MAKE & MODEL:	SMA SB6000TL-US-22
AC OPERATING VOLTAGE (VAC):	240
MAX CONTINUOUS CURRENT (AAC):	25
MAX INPUT VOLTAGE (VDC):	600



NO.	DRAWN	CHECKED	REVIEWED	APPROVED	REVISIONS
0	BushBr 7/29/2014				New Drawing
1	BushBr 1/14/2015				Update Post Lengths and Embedments
2	BushBr 2/3/2015				Update Foundation Embedment Depth
3	BushBr 2/11/2015				Update Post Lengths & Girder Length

Client:  
**Schletter Inc.**  
3761 E. Farnum Pl  
Tucson, AZ 85706

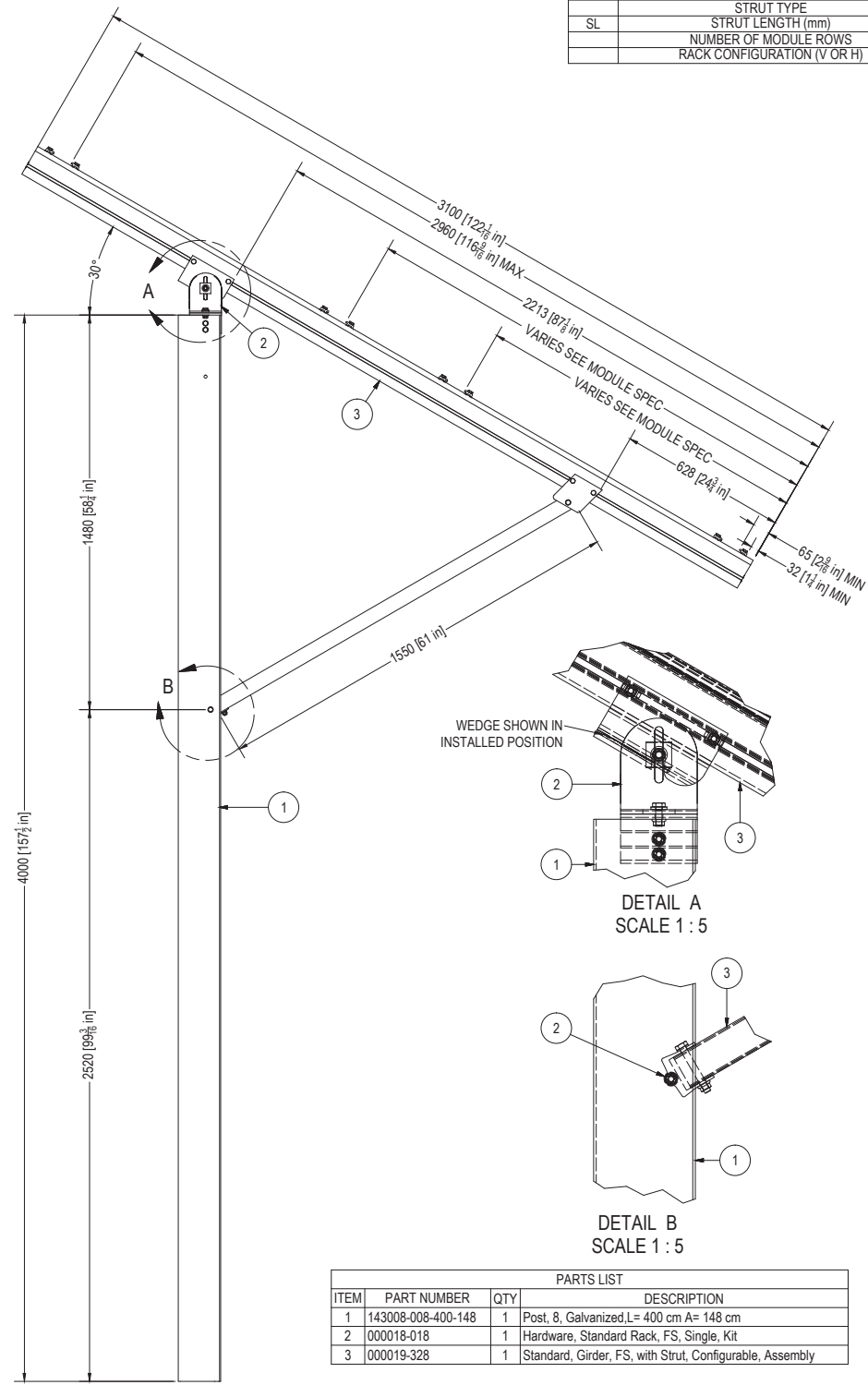


Standard FS 60 Cell - 30°  
Racking Structure  
Dimensions and Specifications  
ISSUED BY: SCHLETTER INC.  
PROPRIETARY AND CONFIDENTIAL

Project Site:  
**Schletter Inc.**  
1001 Commerce Center Dr  
Shelby, NC 28150

Drawing Number:  
**v.04**  
JOB NUMBER: v SCALE: SEE DRAWING VIS  
SHEET: 1 of 3

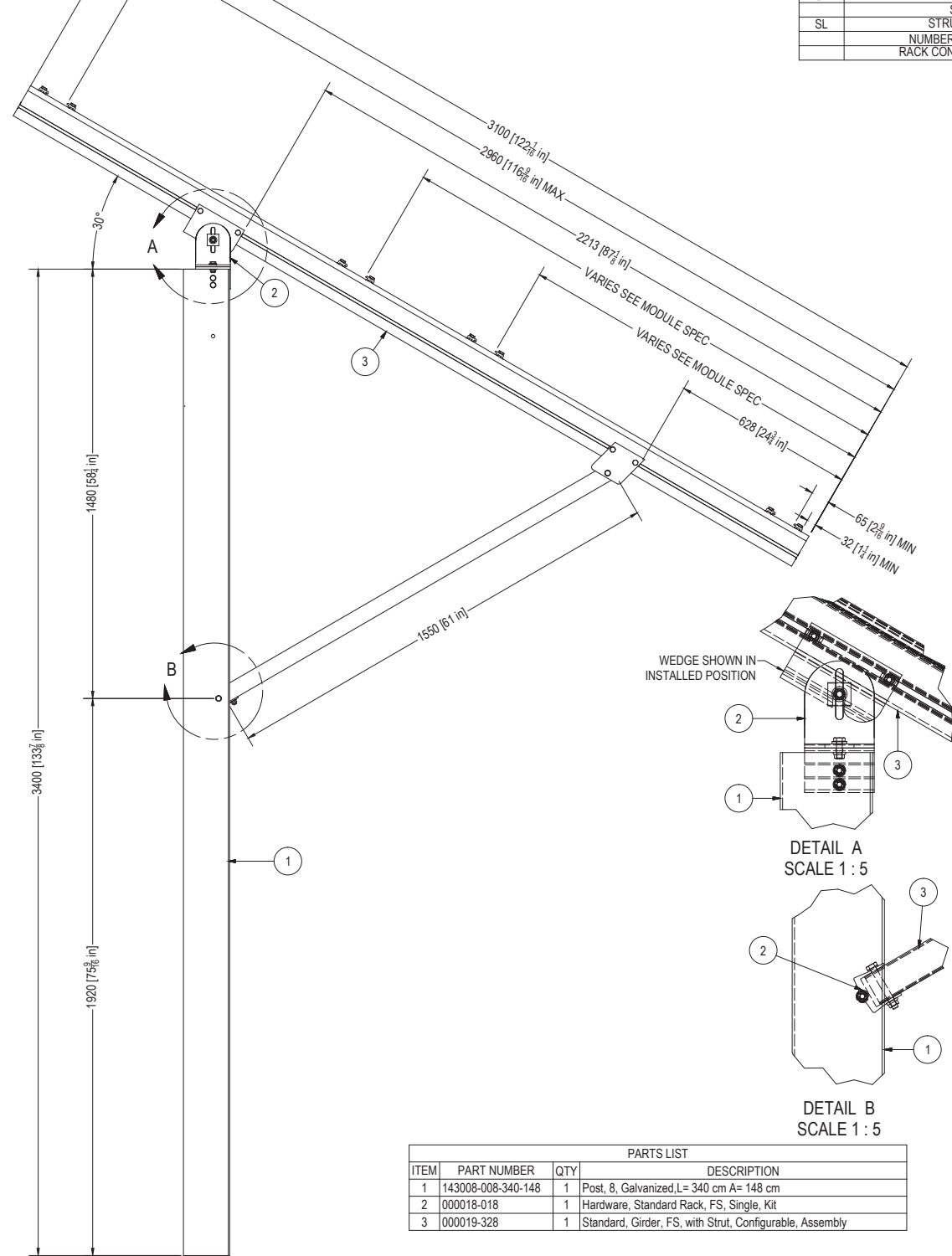
GIRDER TABLE		
ID	DESCRIPTION	CONFIGURATION
GT	NUMBER OF GIRDER ASSEMBLIES	N/A
GL	GIRDER TYPE	T5
GL	GIRDER LENGTH (mm)	3080
SL	STRUT TYPE	55 X 55
SL	STRUT LENGTH (mm)	1550
	NUMBER OF MODULE ROWS	2
	RACK CONFIGURATION (V OR H)	V



PARTS LIST			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	143008-008-400-148	1	Post, 8, Galvanized, L= 400 cm A= 148 cm
2	000018-018	1	Hardware, Standard Rack, FS, Single, Kit
3	000019-328	1	Standard, Girder, FS, with Strut, Configurable, Assembly

140003-004 - Standard, FS, Ram Post, 60 Cell, 30°, Triangle  
SCALE 1 : 12

GIRDER TABLE		
ID	DESCRIPTION	CONFIGURATION
GT	NUMBER OF GIRDER ASSEMBLIES	N/A
GL	GIRDER TYPE	T5
GL	GIRDER LENGTH (mm)	3080
SL	STRUT TYPE	55 X 55
SL	STRUT LENGTH (mm)	1550
	NUMBER OF MODULE ROWS	2
	RACK CONFIGURATION (V OR H)	V



PARTS LIST			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	143008-008-340-148	1	Post, 8, Galvanized, L= 340 cm A= 148 cm
2	000018-018	1	Hardware, Standard Rack, FS, Single, Kit
3	000019-328	1	Standard, Girder, FS, with Strut, Configurable, Assembly

140004-004 - Standard, FS, Foundation, 60 Cell, 30°, Triangle  
SCALE 1 : 10

NO.	DRAWN:	CHECKED:	REVIEWED:	APPROVED:	REVISIONS:
0	BushBr 7/29/2014				New Drawing
1	BushBr 1/14/2015				Update Post Lengths and Embedments
2	BushBr 2/3/2015				Update Foundation Embedment Depth
3	BushBr 2/11/2015				Update Post Lengths & Girder Length

Client:  
Schletter Inc.  
3761 E. Farnum Pl  
Tucson, AZ 85706



3761 E. FARNUM PLACE | TUCSON, AZ 85706  
TEL: (520) 289 - 8700 | FAX: (520) 289 - 8695

EMAIL: MAIL@SCHLETTER.US  
WWW.SCHLETTER.US

Standard FS 60 Cell - 30°  
Racking Structure  
Dimensions and Specifications

ISSUED BY: SCHLETTER INC.  
PROPRIETARY AND CONFIDENTIAL

Project Site:  
Schletter Inc.  
1001 Commerce Center Dr  
Shelby, NC 28150

Drawing Number:

v.04

JOB NUMBER: V SCALE:  
SHEET: 2 of 3 SEE DRAWING VIEWS



ASCE 7-05							
TILT	WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	TENSION FORCE	SHEAR FORCE	DRILLED SHAFT DEPTH 2 FT DIAMETER X
30°	85 MPH	0 PSF	0.00 PSF	13.0 FT	6.32 KIP	3.84 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	5.83 KIP	3.53 KIP	6.25 FT
		40 PSF	30.24 PSF	10.0 FT	4.85 KIP	2.90 KIP	6.25 FT
		60 PSF	45.36 PSF	8.5 FT	4.11 KIP	2.46 KIP	6.50 FT
	90 MPH	0 PSF	0.00 PSF	12.0 FT	6.60 KIP	3.96 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	6.60 KIP	3.96 KIP	6.50 FT
		40 PSF	30.24 PSF	9.5 FT	5.22 KIP	3.08 KIP	6.00 FT
		60 PSF	45.36 PSF	8.5 FT	4.66 KIP	2.72 KIP	6.50 FT
	110 MPH	0 PSF	0.00 PSF	8.5 FT	7.16 KIP	4.08 KIP	6.50 FT
		20 PSF	15.12 PSF	8.5 FT	7.16 KIP	4.08 KIP	6.50 FT
		40 PSF	30.24 PSF	8.5 FT	7.16 KIP	4.08 KIP	6.50 FT
		60 PSF	45.36 PSF	8.0 FT	6.74 KIP	3.81 KIP	6.50 FT
130 MPH	0 PSF	0.00 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	
	20 PSF	15.12 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	
	40 PSF	30.24 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	
	60 PSF	45.36 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	

ASCE 7-05 W/ SEISMIC DESIGN							
TILT	WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	TENSION FORCE	SHEAR FORCE	DRILLED SHAFT DEPTH 2 FT DIAMETER X
30°	85 MPH	0 PSF	0.00 PSF	13.0 FT	6.32 KIP	3.84 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	5.83 KIP	3.53 KIP	6.25 FT
		40 PSF	30.24 PSF	7.0 FT	3.37 KIP	1.97 KIP	5.25 FT
		60 PSF	45.36 PSF	5.5 FT	2.60 KIP	1.61 KIP	5.25 FT
	90 MPH	0 PSF	0.00 PSF	12.0 FT	6.60 KIP	3.96 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	6.60 KIP	3.96 KIP	6.50 FT
		40 PSF	30.24 PSF	7.0 FT	3.82 KIP	2.18 KIP	5.25 FT
		60 PSF	45.36 PSF	5.5 FT	2.95 KIP	1.78 KIP	5.25 FT
	110 MPH	0 PSF	0.00 PSF	8.5 FT	7.16 KIP	4.08 KIP	6.50 FT
		20 PSF	15.12 PSF	8.5 FT	7.16 KIP	4.08 KIP	6.50 FT
		40 PSF	30.24 PSF	7.0 FT	5.88 KIP	3.27 KIP	5.75 FT
		60 PSF	45.36 PSF	5.5 FT	4.56 KIP	2.54 KIP	5.25 FT
130 MPH	0 PSF	0.00 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	
	20 PSF	15.12 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	
	40 PSF	30.24 PSF	6.0 FT	7.11 KIP	3.83 KIP	6.00 FT	
	60 PSF	45.36 PSF	5.5 FT	6.48 KIP	3.46 KIP	5.75 FT	

ASCE 7-10							
TILT	WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	TENSION FORCE	SHEAR FORCE	DRILLED SHAFT DEPTH 2 FT DIAMETER X
30°	110 MPH	0 PSF	0.00 PSF	12.5 FT	6.38 KIP	3.86 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	6.12 KIP	3.70 KIP	6.25 FT
		40 PSF	30.24 PSF	10.0 FT	5.10 KIP	3.04 KIP	6.25 FT
		60 PSF	45.36 PSF	8.5 FT	4.33 KIP	2.56 KIP	6.50 FT
	115 MPH	0 PSF	0.00 PSF	12.0 FT	6.74 KIP	4.05 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	6.74 KIP	4.05 KIP	6.50 FT
		40 PSF	30.24 PSF	9.5 FT	5.33 KIP	3.14 KIP	6.00 FT
		60 PSF	45.36 PSF	8.5 FT	4.77 KIP	2.78 KIP	6.50 FT
	140 MPH	0 PSF	0.00 PSF	8.5 FT	7.26 KIP	4.13 KIP	6.50 FT
		20 PSF	15.12 PSF	8.5 FT	7.26 KIP	4.13 KIP	6.50 FT
		40 PSF	30.24 PSF	8.5 FT	7.26 KIP	4.13 KIP	6.50 FT
		60 PSF	45.36 PSF	8.0 FT	6.83 KIP	3.86 KIP	6.50 FT
160 MPH	0 PSF	0.00 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	
	20 PSF	15.12 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	
	40 PSF	30.24 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	
	60 PSF	45.36 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	

ASCE 7-10 W/ SEISMIC DESIGN							
TILT	WIND	GROUND SNOW	ROOF SNOW	MAX SPAN	TENSION FORCE	SHEAR FORCE	DRILLED SHAFT DEPTH 2 FT DIAMETER X
30°	110 MPH	0 PSF	0.00 PSF	12.5 FT	6.38 KIP	3.86 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	6.12 KIP	3.70 KIP	6.25 FT
		40 PSF	30.24 PSF	7.0 FT	3.54 KIP	2.05 KIP	5.25 FT
		60 PSF	45.36 PSF	5.5 FT	2.74 KIP	1.68 KIP	5.25 FT
	115 MPH	0 PSF	0.00 PSF	12.0 FT	6.74 KIP	4.05 KIP	6.50 FT
		20 PSF	15.12 PSF	12.0 FT	6.74 KIP	4.05 KIP	6.50 FT
		40 PSF	30.24 PSF	7.0 FT	3.91 KIP	2.22 KIP	5.25 FT
		60 PSF	45.36 PSF	5.5 FT	3.02 KIP	1.81 KIP	5.25 FT
	140 MPH	0 PSF	0.00 PSF	8.5 FT	7.26 KIP	4.13 KIP	6.50 FT
		20 PSF	15.12 PSF	8.5 FT	7.26 KIP	4.13 KIP	6.50 FT
		40 PSF	30.24 PSF	7.0 FT	5.96 KIP	3.31 KIP	5.75 FT
		60 PSF	45.36 PSF	5.5 FT	4.62 KIP	2.57 KIP	5.25 FT
160 MPH	0 PSF	0.00 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	
	20 PSF	15.12 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	
	40 PSF	30.24 PSF	6.5 FT	7.30 KIP	3.98 KIP	6.25 FT	
	60 PSF	45.36 PSF	5.5 FT	6.12 KIP	3.28 KIP	5.75 FT	

**CONCRETE FOOTING NOTES:**

WHERE THE DISTANCE BETWEEN BOTTOM OF POST AND CONCRETE FOOTING IS GREATER THAN 12", REINFORCEMENT IS REQUIRED.

IF EMBEDDED POST LENGTH EXCEEDS DEPTH OF CONCRETE FOOTING, POST CAN EITHER BE CUT TO LENGTH AS REQUIRED, OR DEPTH OF FOOTING MAY BE INCREASED.

3" CLEAR COVER IS TO BE MAINTAINED.

GROUND CLEARANCE MAY VARY FROM 3' MAXIMUM TO 2' MINIMUM.

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Client:  
Schletter Inc.  
3761 E. Farnum Pl  
Tucson, AZ 85706



Standard FS 60 Cell - 30°  
Racking Structure  
Design Tables

ISSUED BY: SCHLETTER INC.  
PROPRIETARY AND CONFIDENTIAL

Project Site:  
Schletter Inc.  
1001 Commerce Center Dr  
Shelby, NC 28150

Drawing Number:

**v.04**

JOB NUMBER: V SHEET: 3 of 3 SCALE: SEE DRAWING VIEWS

# Attachment H

## Energy Tips

## Shareholder Energy Efficiency Tips for Longhouse Residents

The following Energy Tips will be provided to the residents of Longhouse Cooperative which is 100% occupied by shareholders. This plan will be distributed to all shareholders to enable them to reduce their electrical usage and associated costs under submetering.

1. Install Energy Star qualified room air conditioners (A/Cs) with high Energy Efficiency Ratios (EERs) and Refrigerators. A/C units and Refrigerators older than 10 years should be replaced with high EER units. There are applicable utility and state incentives to defray some of the cost for these replacements. NYSERDA offers \$250 per Refrigerator under the Advanced Submetering Program (ASP).
2. Check and clean A/C unit filters on a regular basis – monthly is recommended. A clean filter will improve the operating efficiency of the A/C unit.
3. Install Energy Star ceiling fans where and if feasible. If not, utilize the A/C unit operation mode in the FAN mode when possible. The energy usage of the recirculating fan represents only approximately 10% to 20% of the total energy consumed by the A/C unit when operating in the cooling mode.
4. During the cooling season block out heat by keeping blinds or curtains closed during the day, especially on south facing windows. Conversely, keep the blinds open during the heating season in order to utilize the heat obtained from the solar load.
5. Shut off lights and appliances when not in use.
6. Limit the use of portable space heaters and never leave unattended.
7. When you go shopping for a dehumidifier, look for the Energy Star label.
8. Put full loads in the dishwasher and use the “energy savings” setting for the drying cycle, or let dishes air dry to reduce energy use.
9. When doing laundry, use a cold water wash on full loads when ever possible.
10. Clean the lint trap regularly.
11. Make sure the seals on your refrigerator, freezer and oven doors fit tightly.
12. Vacuum and clean condenser coils, motor and evaporator pan of your refrigerator once or twice a year, and leave space between your refrigerator and the surrounding walls and cabinets to allow air to circulate around the coils.
13. When you shut down your computer, don't forget to turn off the monitor – it can use twice as much energy as the computer.
14. Use an advanced power strip for convenience; that way all of your computer accessories are turned off

- by one switch (even in sleep mode, your computer may cost you \$105 a year).
15. Use the power management feature on your computer monitor; it will turn off the monitor when idle for over 15 minutes when you leave your computer on.
  16. Consider a laptop computer over a traditional desktop – laptops use less energy and are portable improving flexibility.
  17. Energy Star lighting fixtures put out the same amount of light as standard fixtures while providing excellent color rendering and light temperature.
  18. Avoid leaving transformers and charging units for appliances and battery- operated devices on (such as cell phones and tools) when they aren't being used.
  19. Instead of just turning your electronics off, it is better to unplug them because even when they're "off" they still draw electricity from the outlet – something known as a "phantom load".
  20. Plug your battery charging system or power adapter into a power strip to enable you to shut off power with the flick of a switch. For even better control, use a power strip with a timer or a programmable power strip.
  21. Don't forget to turn off your DVD player, video game console and television.
  22. Plug your DVD and home audio products into an advance power strip so that when you turn off the television, all of the home audio and video components will also turn off.
  23. Turn television off when on one is watching them. A TV left on for 8 hours a day or while you sleep will cost you about \$41 - \$102 per year.
  24. When choosing a new television, look for the Energy Star label to save energy.
  25. If considering a flat panel or large screen television, consider purchasing an LCD model rather than a plasma model to cut your power usage by approximately 50%.
  26. Ink jet printers use as much as 90% less energy than typical laser printers.
  27. Choose a multifunctional product (printer/copier/scanner) instead of separate products whenever possible.
  28. Don't forget to turn your printer off at night as it still draws power even when not in use.
  29. Plug your printer, scanner and all-in-one device into an advanced power strip so that when you switch off your computer (or put it in sleep mode), all the peripherals will also turn off.
  30. Use energy-efficient, LED lighting instead of standard incandescent light bulbs and you can use 86% less electricity.