

SOLICITATION FOR:

RFP # 18-14 Operations and Maintenance of City-Owned Solar Facilities



CITY OF SOMERVILLE, MASSACHUSETTS

RELEASE DATE: 9/5/2017

QUESTIONS DUE: 9/13/2017 by 12PM EST

DUE DATE AND TIME: 9/21/2017 by 11AM EST

Anticipated Contract Award	10/1/2017
Est. Contract Commencement Date	10/23/2017
Est. Contract Completion Date	10/22/2020

DELIVER TO:

City of Somerville

Purchasing Department

Attn: Michael Richards

Assistant Purchasing Director

mrichards@somervillema.gov

93 Highland Avenue

Somerville, MA 02143

CITY OF SOMERVILLE, MASSACHUSETTS
Enclosed You Will Find a Request for Proposal For:
RFP # 18-14 Operations and Maintenance of City-Owned Solar Facilities

SECTION 1.0
GENERAL INFORMATION ON PROPOSAL PROCESS

1.1 General Instructions

Copies of the solicitation may be obtained from the Purchasing Department on and after 9/5/2017 per the below-noted City Hall hours of operation.

Hall Hours of Operation:	
Monday – Wednesday	8:30 a.m. and 4:30 p.m.
Thursday	8:30 a.m. to 7:30 p.m.
Friday	8:30 a.m. to 12:30 p.m.

All Responses Must be Sealed and Delivered To:
Purchasing Department City of Somerville 93 Highland Avenue Somerville, MA 02143
<i>It is the sole responsibility of the Offeror to ensure that the proposal arrives on time at the designated place. Late proposals will not be considered and will be rejected and returned.</i>
Proposal Format:
Submit one (1) sealed proposal package (with two sealed envelopes, one for the price and one for the technical proposal); it must be marked with the solicitation title and number and must be original.
In an effort to reduce waste, please DO NOT USE 3-RING BINDERS.
Responses must be sealed and marked with the solicitation title and number.
All proposals must include all forms listed in the Proposers Checklist (and all documents included or referenced in Sections 2.0 - 4.0). If all required documents are not present, the proposal may be deemed non-responsive and may result in disqualification of the proposal unless the City determines that such failure(s) constitute(s) a minor informality, as defined in Chapter MGL 30B.
A complete Proposal must also include a cover letter signed by an official authorized to bind the Offeror contractually and contain a statement that the proposal is firm for ninety (90) days. An unsigned letter, or one signed by an individual not authorized to bind the Offeror, may be disqualified.
The Offeror’s authorized official(s) must sign all required proposal forms.
The Price Form in Section 4.0 must be completed. No substitute form will be accepted. Pricing must remain firm for the entire contract period.
All information in the Offeror’s response should be clear and concise. The successful response will be incorporated into a contract as an exhibit; therefore, Offerors should not make claims to which they are not prepared to commit themselves contractually.
The successful Offeror must be an Equal Opportunity Employer.

1.2 Proposal Schedule

Key dates for this Request for Proposals:	
RFP Issued	9/5/2017
Deadline for Submitting Questions to RFP	9/13/2017 by 12PM EST
Proposals Due	9/21/2017 by 11AM EST
Anticipated Contract Award	10/1/2017
Est. Contract Commencement Date	10/23/2017
Est. Contract Completion Date	10/22/2020

Responses must be delivered by 9/21/2017 by 11AM EST to:	City of Somerville Purchasing Department Attn: Michael Richards 93 Highland Avenue Somerville, MA 02143
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1.3 Submission Instructions

Please submit *two sealed envelopes, all within one sealed proposal package*, with the following contents and marked in the following manner:

Contents of Sealed Proposal Package	Marked As
Envelope 1 Non-Price Technical Proposal: Shall Include (1) original and two (2) copies, and one (1) electronic copy. [Electronic copies are to be submitted on CD-ROM or thumb drives and are to be saved in Adobe Acrobat format. ("Read only" files are acceptable.)]	To Be Marked: Non-Price Proposal RFP # 18-14 Operations and Maintenance of City-Owned Solar Facilities
Envelope 2 Price Proposal: Shall Include one (1) original and one (1) copy.	To Be Marked: Price Proposal RFP # 18-14 Operations and Maintenance of City-Owned Solar Facilities
Please send the complete sealed package to the attention of :	Michael Richards Assistant Purchasing Director Purchasing Department Somerville City Hall 93 Highland Avenue Somerville, MA 02143

(Note: Massachusetts General Laws, Chapter 30B requires that price proposals must be separate from technical proposals. Therefore, **please make no reference to pricing in the non-price technical proposal.** Failure to

adhere to this requirement will result in disqualification.

Non-Price (Technical) Proposal Format

Responses must be submitted in accordance with the requirements set forth in this solicitation. Results of the proposal review process will be utilized to establish a preliminary ranking of the proposers. The City may interview the top ranked candidates as part of the evaluation process. All information in the technical proposal should be organized and presented as directed below. Your Non-Price Proposal response should contain all forms outlined in the Proposers Checklist (Section 5.0). Responses shall be prepared on standard 8.5 x 11 inch paper (charts may be landscaped but must be on 8.5 x 11 inch paper) and shall be in a legible font size (12). All pages of each response shall be appropriately numbered (and with consecutive page numbering across tabs).

Elaborate format and binding are neither necessary nor desirable. Each proposal shall clearly identify the Offeror's name, solicitation number, formal solicitation title and copy number, (e.g., "Original", "copy 2 of 3"). All binders will allow for easy removal and replacement of pages.

Cover Letter

Submit a cover letter that includes the official name of the firm submitting the proposal, mailing address, e-mail address, telephone number, fax number, and contact name. The letter must be signed by an official authorized to bind the proposer contractually and contain a statement that the proposal is firm for ninety (90) days. An unsigned letter, or one signed by an individual not authorized to bind the Offeror, may be disqualified.

Qualifications & Experience

The Offeror shall include qualifications and experience of the firm (or sole proprietor). The Offeror shall identify the year the firm was established, the total number of employees currently employed, and the number of employees focused on this engagement. This section should also describe work that is similar in scope and complexity that the Offeror has undertaken in the past. A discussion of the challenges faced and solutions developed are highly recommended. The Offeror may include any additional literature and product brochures. The Quality Requirements Form (Section 2.0), or set of basic business standards, must be submitted in the sealed proposal.

References

The Offeror shall list at least three relevant references, which the City can contact. The City of Somerville reserves the right to use ourselves as a reference. References shall include the following information:

●The name, address, telephone number, and email address of each client listed above.	
●A description of the work performed under each contract.	●The amount of the contract.
●A description of the nature of the relationship between Offeror and the customer.	
●The dates of performance.	●The volume of the work performed.

Price Proposal Format

Price Summary Page (see Section 4.0.)

Proposal Prices to Remain Firm

All proposal prices submitted in response to this solicitation must remain firm for 90 days following the proposal opening.

Price Submission

All prices must contain the unit rate as requested on the proposal price form in this solicitation. All prices are to include delivery, the cost of fuel, the cost of labor, and all other charges related to the products or services listed. Prices are to remain fixed for the contract period of performance.

1.4 Questions

Questions are due: 9/13/2017 by 12PM EST

Questions concerning this solicitation must be delivered in writing to:

Michael Richards
Assistant Purchasing Director
Somerville City Hall
Purchasing Department
93 Highland Avenue
Somerville, MA 02143

Or emailed to:
mrichards@somervillema.gov

Or faxed to:

617-625-1344

Answers will be sent via an addendum to all Offerors who have registered as proposal holders. Proposers are encouraged to contact the Purchasing Department to register as a proposal document holder to automatically be alerted as to addenda as they are issued. It is the responsibility of the Offeror to also monitor the proposal portal on the City's website for any updates, addenda, etc. regarding that specific solicitation. The web address is: <http://www.somervillema.gov/departments/finance/purchasing/bids>.

If any proposer contacts City personnel outside of the Purchasing Department regarding this proposal/proposal, that proposer will be disqualified immediately.

1.5 General Terms

Estimated Quantities

The City of Somerville has provided estimated quantities, which will be ordered/purchased over the course of the contract period. These estimates are estimates only and not guaranteed.

Proposal Signature

A response must be signed as follows: 1) if the Offeror is an individual, by her/him personally; 2) if the Offeror is a partnership, by the name of the partnership, followed by the signature of each general partner; and 3) if the Offeror is a corporation, by the authorized officer, whose signature must be attested to by the clerk/secretary of the corporation (& with corporate seal).

Time for Proposal Acceptance and City Contract Requirements

The contract will be awarded within 90 days after the proposal opening. The time for award may be extended for up to 45 additional days by mutual agreement between the City of Somerville and the Offeror that is most advantageous and responsible. The Offeror's submission will remain in effect for a period of 90 days from the

response deadline or until it is formally withdrawn, a contract is executed, or this solicitation is canceled, whichever occurs first. The Offeror will be required to sign a standard City contract per the City's general terms included herein as Appendix A.

Holidays are as follows:

New Year's Day	Martin Luther King Day	Presidents' Day	Patriots' Day
Memorial Day	Bunker Hill Day	Independence Day	Labor Day
Columbus Day	Veterans' Day	Thanksgiving Day	Thanksgiving Friday
Christmas Eve (half day)	Christmas Day		

Please visit <http://www.somervillema.gov/> for the City's most recent calendar. *Under State Law, all holidays falling on Sunday must be observed on Monday.

If the awarded Offeror for their convenience desires to perform work during other than normal working hours or on other than normal work days, or if the Offeror is required to perform work at such times, the Offeror shall reimburse the City for any additional expense occasioned the City, thereby, such as, but not limited to, overtime pay for City employees, utilities service, etc. UNLESS otherwise specified in these provisions, services will be performed during normal work hours. When required services occur on holidays, work will be performed on either the previous or following work day, unless specified otherwise.

Unforeseen Office Closure

If, at the time of the scheduled proposal opening, the Purchasing Department is closed due to uncontrolled events such as fire, snow, ice, wind, or building evacuation, the proposal due date will be postponed until 2:00 p.m. on the next normal business day. Proposals will be accepted until that date and time. In the event of inclement weather, the Offeror is responsible for listening to the media to determine if the City has been closed due to weather.

Changes & Addenda

If any changes are made to this solicitation, an addendum will be issued. All proposers on record as having picked up the solicitation will be alerted via email as to the posting of all addenda. The City will also post addenda on its website (<http://www.somervillema.gov/departments/finance/purchasing/bids>). No changes may be made to the solicitation documents by the Offerors without written authorization and/or an addendum from the Purchasing Department.

Modification or Withdrawal of Proposals, Mistakes, and Minor Informalities

An Offeror may correct, modify, or withdraw a proposal by written notice received by the City of Somerville prior to the time and date set for the proposal opening. Proposal modifications must be submitted in a sealed envelope clearly labeled "Modification No. ___" to the address listed in Section 1. Each modification must be numbered in sequence and must reference the original solicitation. After the proposal opening, an Offeror may not change any provision of the proposal in a manner prejudicial to the interests of the City or fair competition. Minor informalities will be waived or the proposer will be allowed to correct them. If a mistake and the intended proposal are clearly evident on the face of the proposal document, the mistake will be corrected to reflect the intended correct proposal, and the proposer will be notified in writing; the proposer may not withdraw the proposal. A proposer may withdraw a proposal if a mistake is clearly evident on the face of the proposal document, but the intended correct proposal is not similarly evident.

Right to Cancel/Reject Proposals

The City of Somerville may cancel this solicitation, or reject in whole or in part any and all proposals, if the City determines that cancellation or rejection serves the best interests of the City.

Unbalanced Proposals

The City reserves the right to reject unbalanced, front-loaded, and conditional proposals.

Brand Name “or Equal”

Any references to any brand name or proprietary product in the specifications shall require the acceptance of an equal or better brand. The City has the right to make the final determination as to whether an alternate brand is equal to the brand specified.

Electronic Funds Transfer (EFT)

For EFT payment, the following shall be included with invoices to the point of contact:

- Contract/Order number; Contractor’s name & address as stated in the contract;
- The signature (manual or electronic, as appropriate) title, and telephone number of the Offeror’s representative authorized to provide sensitive information;
- Name of financial institution; Financial institution nine (9) digit routing transit number;
- Offeror’s account number; Type of account, i.e., checking or saving.

1.6 Evaluation Methodology

Comparative Evaluation Criteria

The Comparative Evaluation Criteria set forth in Section 2 of this RFP shall be used to evaluate responsible and responsive proposals.

All proposals will be reviewed by an evaluation committee composed of employees of the City. Final selection will be based upon the evaluators’ analysis of the information and materials required under the RFP and provided by the proposing vendors in their submissions. The City reserves the right to involve an outside consultant in the selection process. Proposals that meet the minimum quality requirements will be reviewed for responses to the comparative evaluation criteria. The evaluation committee will assign a rating of Highly Advantageous, Advantageous, Not Advantageous, or Unacceptable to the comparative evaluation criteria.

The City will only award a contract to a responsive and responsible Proposer. Before awarding the contract(s), the City may request additional information from the Proposer to ensure that the Proposer has the resources necessary to perform the required services. The City reserves the right to reject any and all proposals if it determines that the criteria set forth have not been met.

Selection Process

Qualified proposals will be reviewed and rated by the Evaluation Committee ("the Committee") on the basis of the comparative evaluation criteria and minimum quality requirements included in Section 2.0.

The City may request additional information from the Offerors to ensure that the Offeror has the necessary resources to perform the required services. The Committee may choose to select a set of finalists to be interviewed ("the short list"). The short-listed applicants will be notified, either by e-mail or telephone, of the date, time, and place for their interviews and any other pertinent information related thereto. The Mayor may, at the Mayor’s sole discretion, interview the applicants on the short list. The Committee will rank all candidates

and make a recommendation to the Mayor to enter into a contract with the most highly advantageous Offeror.

The City will award the contract to the most responsive and responsible Offeror whose entire proposal (technical and price) is deemed to be the most highly advantageous. The City reserves the right to reject any and all proposals if it determines that the criteria set forth have not been met.

RFP # 18-14
SECTION 2.0
RULE FOR AWARD /
SPECIFICATIONS/SCOPE OF SERVICES

Rule For Award

The contract shall be awarded to the responsible and responsive proposer submitting the most advantageous proposal response, taking into consideration all evaluation criteria as well as price. The contract will be awarded within ninety (90) days after the proposal opening. The time for award may be extended for up to 45 additional days by mutual agreement between the City and the most highly advantageous and responsible offeror.

Background

The City of Somerville owns and operates three solar PV arrays located on City properties. In 2016, the City undertook an assessment of these systems to identify asset management needs. The City is seeking an operations and maintenance (O&M) contractor who will make immediate corrective items and subsequently perform O&M services on a regular basis in following years. The City seeks to manage these assets and maximize their potential benefit to the City and community members.

Additional information regarding the City's three solar systems is available in Appendix B. Antares Group Incorporated is the City's owner's representative for solar PV and will assist in the evaluation of this solicitation.

Requested Documents and Information

- Statement of qualifications
- Firm background and experience, including
 - Years of experience installing PV systems, how many projects (in MWs)
 - Describe experience providing asset management/O&M services
 - Current managed portfolio size (where O&M services are provided)
 - Direct experience with AlsoEnergy DAS platform
- Vendor relations, specifically partnerships/vendor relations for procuring new equipment, making warranty claims, etc.
- Safety record:
 - Current 3 yr historical safety record for the company
 - OSHA record/violations in last 3 years
- Exceptions to scope of work (if any)
- References for comparable O&M services

Scope of Work

Corrective Items

Upon execution the contract, the Contractor will perform the corrective items necessary to bring the City's solar facilities into full operation. Anticipated corrective actions are identified in Appendix B.

Ongoing O&M Services

The Solar Energy Facility (SEF) on which the Contractor is obligated to provide the Services described herein includes the following components:

- Solar Modules

- Solar Racking Systems
- Power Conditioning: Inverters/ Transformers¹
- Balance of System Components including auxiliary power, cabling, conduits, enclosures, wiring
- All associated instrumentation, electrical protection equipment, surge protection equipment, and wiring
- Data Acquisition System (DAS) hardware and wiring
- DAS software/platform license agreement
- Inventory of Spare Parts (where applicable)
- Manufacturer Equipment Warranties and Warranty Claims

Service Schedule

Contractor shall provide the Services described under the service plans as described below. All services will be offered by the Contractor under the following site access and notice guidelines as specified below by the Owner.

Access to premises and notice to Owner for scheduled maintenance services. Owner will arrange to provide Contractor with access to the premises as reasonably necessary to allow Contractor to perform operation and maintenance activities of the SEF, including ingress and egress rights through the building and to the roof. Activities shall only be performed during negotiated hours of the day, unless specifically requested otherwise, such that regular school or building activities are not adversely affected, and only after approval from the Owner of the date and time the work is to be performed. Owner and its authorized representatives shall at all times have access to and the right to observe the work, subject to compliance with Contractor's safety rules. The program below outlines all major tasks required during a typical service inspection. The inspection schedules and additional service requirements are defined for ground-mounted and roof-mounted systems, respectively.

Solar Energy Facility Inspection Plan

- One annual inspection (as described below), preferably in the Spring
- Perform all recommended and required inverter annual preventative maintenance tasks including but not limited to:
 - a. All inverter maintenance activities in accordance with the manufacturer's recommended maintenance procedures.
 - b. Check appearance/cleanliness of the cabinet, ventilation system and all exposed surfaces, including any evidence of water ingress.
 - c. Inspect and replace air filter elements as required or recommended by manufacturer.
 - d. Check for corrosion on all terminals, cables and enclosure.
 - e. Check all fuses and/or breakers.
 - f. Perform a complete visual inspection of all enclosures and equipment, devices, and cabling therein, including subassemblies, wiring harnesses, contactors, power supplies and all other components.
 - g. Inspect/test AC and DC transient voltage surge suppressors or MOVs and replace failed components.
 - h. Visually inspect torque marks of all terminals and perform thermal imaging inspection of all connections and terminations.
 - i. Check the operation of all safety devices (E-stop, switches, Ground Fault Protection equipment).
 - j. Inform manufacturer and Owner of all deficiencies or concerns identified.
 - k. Record all inspections completed, concerns identified, and components replaced.

¹ Not to include utility-owned and operated equipment.

- Module maintenance
 - Visually inspect the entire PV array with thermal scanner. Any anomalies, “hot spots”, or potential issues should be noted in the report and accompanied with a photo of the thermal scan for that module(s) and a record of the location of the anomaly.
 - Visually inspect PV modules and racking for the following and remediate and/or report if found:
 - a. Dirty, cracked, or broken module glazing
 - b. Vegetative overgrowth
 - c. Excessive condensation on or under module glazing
 - d. Loose module racking clips or brackets
 - e. Corroded or loose racking support structure
 - f. Corroded or loose module frames
 - g. Loose series connections
 - Identify broken, damaged, or defective solar modules.
- Perform visual and thermal imaging inspection of all electrical connections and over-current protection devices including combiner boxes, switchgear, and AC and DC disconnects for signs of loose connections, failure, or excessive heat. All thermal images of should be included in the inspection report.
- Visually inspect source and output circuit wiring and wire management systems for damage, strained or loose conductors.
- Inspect grounding electrode systems and test continuity of equipment grounding system between modules, racking, and equipment grounding conductors
- Inspection of surge suppressors and replacement of failed units as needed
- Test all safety devices, exercise all switches
- Test and check monitoring system components and wiring, clean and check environmental sensors. Verify calibration of pyranometers.
- Report all Facility repair needs to Owner.
- Provide pre-inspection and post-inspection field readings of system performance to include: system meter readings, actual system output, AC line voltage and current, DC voltages and current, irradiance, and ambient temperatures during each test. Check calibration of meters, if out of range, contact manufacturer and inform monitoring software.
- Verify all site identification, electrical identification, electrical hazard, electrical interconnection, electrical disconnection points, and other SEF signage is in place, clearly visible, and not damaged.
- Report all maintenance requirements that are outside of normal maintenance to Owner for approval under terms of the maintenance agreement
- Email/phone confirmation to system Owner of critical event flag as required in agreement terms. Critical events shall be defined as those affecting the safe operation of the system.
- Reporting
 - Maintain a digital database (“Maintenance Log”) of all records needed to verify compliance with this agreement, including but not limited to invoices, warranty information, contracts, and service records, which shall be made available to Owner via readily-accessible online platform (e.g. *Smartsheet, Dropbox, Box*, etc).
 - Provide annual report per the provided template detailing the annual inspection and summarizing operational issues along with a copy of the up-to-date Maintenance Log.
- Coordinate the warranty repair, service, or replacement of defective equipment with the respective manufacturer under applicable warranties.
- Replace broken, damaged, defective modules from spare modules stock (when available), and coordinate with manufacturer for the return/disposal and/or replacement of defective modules with new modules.

- Replace faulty breakers or fuses, and coordinate warranty replacement where applicable.
- Megger testing of all DC output feeders (where applicable) during SEF inspections
- Maintenance and monitoring of DAS portal and alert system
 - Monitor the performance of the facility during the term and identify issues as they arise, manage system alarms and production shortfalls, and deliver notice and explanation to Owner if performance ratio is under 75% for one day, or under 90% for more than three consecutive days.
 - Provide biannual report of system activities, performance, and event log.
- Manage and maintain inventory of SEF spare parts (where applicable).
-

Response Plan

Owner expects reasonable and prompt dispatch of resources in response to alarms, abnormal condition alerts, and service requests received by Contractor from Owner or via monitoring system with confirmation of dispatch requests and intended response schedule on the same business day. On-site response expectations to system events at Owner's request are as follows:

- Outage with no threat to property or persons: on-site response within 72 hours
- Emergency conditions: immediate phone consultation availability and/or same day dispatch to location if requested by Owner.
- Routine Service: as agreed by parties per contract
-

Document Management

Owner and Contractor will agree on suitable form of inspection and maintenance forms to document and manage scope of work described above. Contractor shall maintain up to date contact information of all users of monitoring software, including email and phone number.

Contractor shall ensure documentation is uploaded to monitoring software and/or agreed-upon data storage platform, including but not limited to equipment warranties and inspection documents, manuals, site as-built plans, and other documentation as required to properly maintain the SEF during the term of the agreement. Provide written Inspections and Service report within 30 days of each inspection and other on-site visits as required. Include details of preventive maintenance work, such as parts replaced, meter readings, thermal images, in-scope and out of scope maintenance, panel cleaning, and system testing results. Include non-conformance reports to identify potential short-term and long-term safe operation or power production issues. Inspection reports should include the following:

- Checklists
 - Report should detail line-item activity and include notes where necessary
 - Include inverter annual preventative maintenance checklist as per manufacturers guidelines
 - Include checklist for all other maintenance and inspections activities as outlined in the Solar Energy Facility Inspection Plan.
- Images
 - Images of any issues found during inspections requiring corrective action
 - Follow-up images of the corrective issue should be provided once corrective action is completed
 - Thermal images of switchgear, disconnects, inverter cabinet, and combiner boxes
 - Thermal images of modules with anomalies
 - Report completed or recommended actions for any thermal images showing anomalies
- Event log
 - Submit updated complete event log to include all maintenance, outages, or other events from system start-up to present. Log should detail event description, reason, and length of time of the event.
- Spare parts inventory log

- Production log
 - Include actual and projected kWh generation for the period dating back to most recent previous inspection
- Performance issues
 - Report any recommended future unscheduled maintenance for performance, safety, or site issues

Comparative Evaluation Criteria

The Comparative Evaluation Criteria set forth in this section of the RFP shall be used to evaluate responsible and responsive proposals. The Comparative Evaluation Criteria are:

All proposals will be reviewed by an evaluation committee composed of employees of the City. Final selection will be based upon the evaluators’ analysis of the information and materials required under the RFP and provided by the proposing vendors in their submissions. The City reserves the right to involve an outside consultant in the selection process. Proposals that meet the minimum quality requirements will be reviewed for responses to the comparative evaluation criteria. The evaluation committee will assign a rating of Highly Advantageous, Advantageous, Not Advantageous, or Unacceptable to the comparative evaluation criteria.

The City will only award a contract to a responsive and responsible Proposer. Before awarding the contract(s), the City may request additional information from the Proposer to ensure that the Proposer has the resources necessary to perform the required services. The City reserves the right to reject any and all proposals if it determines that the criteria set forth have not been met.

Factor 1: Experience	
Highly Advantageous	The proposer’s firm has 3+ years of experience installing PV systems or providing asset management/O&M services for projects of similar size and scope
Advantageous	The proposer’s firm has 1 or 2 years of experience installing PV systems or providing asset management/O&M services for projects of similar size and scope
Not Advantageous	The proposer’s firm does not have demonstrated experience installing PV systems or providing asset management/O&M services for projects of similar size and scope

Factor 2: Safety Record	
Highly Advantageous	The proposer’s firm has an exceptional safety record with no documented OSHA violations in the past 3+ years.
Advantageous	The proposer’s firm has a strong safety record with minimal or minor documented OSHA violations in the past 3+ years.
Not Advantageous	The proposer’s firm has a poor safety record multiple minor or major documented OSHA violations in the past 3+ years.

Factor 3: Vendor Relations

Highly Advantageous	The proposer's response details established partnerships and vendor relations for procuring new equipment, making warranty claims, and other various vendor roles
Advantageous	The proposer's response addresses potential partnerships and vendor relations for procuring new equipment, making warranty claims, and other various vendor roles
Not Advantageous	The proposer's response provides inadequate potential partnerships and vendor relations for procuring new equipment, making warranty claims, and other various vendor roles

Period of Performance

The period of performance for this contract begins on or about 10/23/2017 and ends on or about 10/22/2020. If applicable, optional renewal years may be exercised by the sole discretion of the City (see cover page for anticipated contract term).

Place of Performance

All services, delivery, and other required support shall be conducted in Somerville and other locations designated by the Department point of contact. Meetings between the Vendor and City personnel shall be held at the City of Somerville, Massachusetts, unless otherwise specified.

Vendor Conduct

The Vendor's employees shall comply with all City regulations, policies, and procedures. The Vendor shall ensure that their employees present professional work attire at all times. The authorized contracting body of the City may, at his/her sole discretion, direct the Vendor to remove any Vendor employee from City facilities for misconduct or safety reasons. Such rule does not relieve the Vendor of their responsibility to provide sufficient and timely service. The City will provide the Vendor with immediate written notice for the removal of the employee. Vendors must be knowledgeable of the conflict of interest law found on the Commonwealth's website <http://www.mass.gov/ethics/laws-and-regulations-/conflict-of-interest-information/conflict-of-interest-law.html>. Vendors may be required to take the Conflict of Interest exam.

Vendor Personnel

The Vendor shall clearly state the name of the proposed project manager. All proposed staff must demonstrate the ability to carry out the specified requirements.

Confidentiality

The Vendor agrees that it will ensure that its employees and others performing services under this contract will not use or disclose any non-public information unless authorized by the City. That includes confidential reports, information, discussions, procedures, and any other data that are collected, generated or resulting from the performance of this scope of work. All documents, photocopies, computer data, and any other information of any kind collected or received by the Vendor in connection with the contract work shall be provided to the City upon request at the termination of the contract (i.e., the date on which final payment is made on the contract or at such other time as may be requested by the City or as otherwise agreed by City and the Vendor). The Vendor may not discuss the contract work in progress with any outside party, including responding to media and press inquiries, without the prior written permission of the City. In addition, the Vendor may not issue news releases or similar items regarding contract award, any subsequent contract modifications, or any other contract-related matter without the prior written approval of the City. Requests to make such disclosures should be addressed in writing to the Vendor's point of contact.

Deliverables

Vendor shall provide for all day-to-day supervision, inspection, and monitoring of all work performed to ensure compliance with the contract requirements. The contractor is responsible for remedying all defects and or omissions to the supplies or services provided to ensure that said deliverables meet the requirements as detailed in the contract specifications.

RFP # 18-14

SECTION 3.0

Operations and Maintenance of City-Owned Solar Facilities PROPOSERS' CHECKLIST

Please ensure all documents listed on this checklist are included with your proposal. Failure to do so may subject the proposer to disqualification.

Non-Price Proposal

Required with Sealed Proposals

- Cover Letter
- Acknowledgement of Addenda (if applicable and non-price related)
- Quality Requirements (See Section 2.0)
- Somerville Living Wage Form
- Certificate of Non-Collusion and Tax Compliance
- Certificate of Signature Authority
- Reference Form (or equivalent may be attached)
- W9

Required with Contract, *Post Award*

- Certificate of Good Standing (will be required of awarded Vendor; please furnish with proposal if available)
- Insurance Specifications (will be required of awarded Vendor; furnish sample certificate with bid, if possible)

Price Proposal

- Acknowledgement of Addenda (if applicable and price related)
- Price Form

Quality Requirements Form

Quality requirements, or basic business requirements, are the minimum set of standards that an entity must meet and certify to be considered responsible and responsive. **Please complete the Quality Requirements form, below, and submit it with your completed proposal.** The City of Somerville will disqualify any response that does not meet the minimum quality requirements. A "No Response" to items 1 or 2 or a failure to respond to any of the following minimum standards may result in disqualification of your proposal.

QUALITY REQUIREMENTS		YES	NO
1.	Has the contractor been established in the relevant field for at least 5 years?		
2.	Can the contractor certify that all employees to be provided have successfully completed at least 10 hours of OSHA approved training in Construction Safety and Health?		
3.	Optional: Are you a Mass. Supplier Diversity Office MBE/WBE certified minority or woman owned business? Additional minority designations may be submitted by attaching supporting documentation.		

In order to provide verification of affirmative responses to items 1 and 2 under the quality requirements listed in the Quality Requirements Form, Offeror must submit written information that details the general background, experience, and qualifications of the organization. Subcontractors, if applicable, must be also included.



**Certificate of Authority
(Corporations Only)**

Instructions: Complete this form and sign and date where indicated below.

1. I hereby certify that I, the undersigned, am the duly elected Clerk/Secretary of

(Insert Full Name of Corporation)

2. I hereby certify that the following individual _____
(Insert the Name of Officer who Signed the Contract and Bonds)

is the duly elected _____ of said Corporation.
(Insert the Title of the Officer in Line 2)

3. I hereby certify that on _____
(Insert Date: Must be on or before Date Officer Signed Contract/Bonds)

at a duly authorized meeting of the Board of Directors of said corporation, at which a quorum was present, it was voted that

(Insert Name of Officer from Line 2) (Insert Title of Officer from Line 2)

of this corporation be and hereby is authorized to make, enter into, execute, and deliver contracts and bonds in the name and on behalf of said corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this corporation's name and on its behalf, with or without the Corporate Seal, shall be valid and binding upon this corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

4. **ATTEST:**

Signature: _____
(Clerk or Secretary)

AFFIX CORPORATE SEAL HERE

Printed Name: _____

Printed Title: _____

Date: _____

(Date Must Be on or after Date Officer Signed Contract/Bonds)



**Certificate of Authority
(Limited Liability Companies Only)**

Instructions: Complete this form and sign and date where indicated below.

1. I, the undersigned, being a member or manager of

(Complete Name of Limited Liability Company)

a limited liability company (LLC) hereby certify as to the contents of this form for the purpose of contracting with the City of Somerville.

2. The LLC is organized under the laws of the state of: _____.

3. The LLC is managed by **(check one)** a Manager or by its Members.

4. I hereby certify that each of the following individual(s) is:
- a member/manager of the LLC;
 - duly authorized to execute and deliver this contract, agreement, and/or other legally binding documents relating to any contract and/or agreement on behalf of the LLC;
 - duly authorized to do and perform all acts and things necessary or appropriate to carry out the terms of this contract or agreement on behalf of the LLC; and
 - that no resolution, vote, or other document or action is necessary to establish such authority.

<u>Name</u>	<u>Title</u>

5. **Signature:**_____

Printed Name: _____

Printed Title:_____

Date: _____



SOMERVILLE LIVING WAGE ORDINANCE CERTIFICATION FORM
CITY OF SOMERVILLE CODE OF ORDINANCES SECTION 2-397 et seq.*

Instructions: This form shall be included in all Invitations for Bids and Requests for Proposals which involve the furnishing of labor, time or effort (with no end product other than reports) by vendors contracting or subcontracting with the City of Somerville, where the contract price meets or exceeds the following dollar threshold: \$10,000. If the undersigned is selected, this form will be attached to the contract or subcontract and the certifications made herein shall be incorporated as part of such contract or subcontract. **Complete this form and sign and date where indicated below on page 2.**

Purpose: The purpose of this form is to ensure that such vendors pay a “Living Wage” (defined below) to all covered employees (i.e., all employees except individuals in a city, state or federally funded youth program). In the case of bids, the City will award the contract to the lowest responsive and responsible bidder paying a Living Wage. In the case of RFP’s, the City will select the most advantageous proposal from a responsive and responsible offeror paying a Living Wage. In neither case, however, shall the City be under any obligation to select a bid or proposal that exceeds the funds available for the contract.

Definition of “Living Wage”: For this contract or subcontract, as of 7/1/2017 “Living Wage” shall be deemed to be an hourly wage of no less than \$12.49 per hour. From time to time, the Living Wage may be upwardly adjusted and amendments, if any, to the contract or subcontract may require the payment of a higher hourly rate if a higher rate is then in effect.

CERTIFICATIONS

1. The undersigned shall pay no less than the Living Wage to all covered employees who directly expend their time on the contract or subcontract with the City of Somerville.
2. The undersigned shall post a notice, (copy enclosed), to be furnished by the contracting City Department, informing covered employees of the protections and obligations provided for in the Somerville Living Wage Ordinance, and that for assistance and information, including copies of the Ordinance, employees should contact the contracting City Department. Such notice shall be posted in each location where services are performed by covered employees, in a conspicuous place where notices to employees are customarily posted.
3. The undersigned shall maintain payrolls for all covered employees and basic records relating hereto and shall preserve them for a period of three years. The records shall contain the name and address of each employee, the number of hours worked, the gross wages, a copy of the social

* Copies of the Ordinance are available upon request to the Purchasing Department.

Form: _____
Contract Number: _____

security returns, and evidence of payment thereof and such other data as may be required by the contracting City Department from time to time.

4. The undersigned shall submit payroll records to the City upon request and, if the City receives information of possible noncompliance with the provisions the Somerville Living Wage Ordinance, the undersigned shall permit City representatives to observe work being performed at the work site, to interview employees, and to examine the books and records relating to the payrolls being investigated to determine payment of wages.

5. The undersigned shall not fund wage increases required by the Somerville Living Wage Ordinance by reducing the health insurance benefits of any of its employees.

6. The undersigned agrees that the penalties and relief set forth in the Somerville Living Wage Ordinance shall be in addition to the rights and remedies set forth in the contract and/or subcontract.

CERTIFIED BY:

Signature: _____
(Duly Authorized Representative of Vendor)

Title: _____

Name of Vendor: _____

Date: _____

INSTRUCTIONS: PLEASE POST

**NOTICE TO ALL EMPLOYEES
REGARDING PAYMENT OF LIVING WAGE**

Under the Somerville, Massachusetts' Living Wage Ordinance (Ordinance No. 1999-1), any person or entity who has entered into a contract with the City of Somerville is required to pay its employees who are involved in providing services to the City of Somerville no less than a "Living Wage".

The Living Wage as of 7/1/2017 is **\$12.49** per hour. The only employees who are not covered by the Living Wage Ordinance are individuals in a Youth Program. "Youth Program" as defined in the Ordinance, "means any city, state or federally funded program which employs youth, as defined by city, state or federal guidelines, during the summer, or as part of a school to work program, or in any other related seasonal or part-time program."

For assistance and information regarding the protections and obligations provided for in the Living Wage Ordinance and/or a copy of the Living Wage Ordinance, all employees should contact the City of Somerville's Purchasing Department directly.



Non-Collusion Form and Tax Compliance Certification

Instructions: Complete each part of this two-part form and sign and date where indicated below.

A. NON-COLLUSION FORM

I, the undersigned, hereby certify under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person.

As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Signature: _____
(Individual Submitted Bid or Proposal)
Duly Authorized

Name of Business or Entity: _____

Date: _____

B. TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, §49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support, as well as paid all contributions and payments in lieu of contributions pursuant to MGL 151A, §19A(b).

Signature: _____
(Duly Authorized Representative of Vendor)

Name of Business or Entity: _____

Social Security Number or Federal Tax ID#: _____

Date: _____

REFERENCE FORM

Bidder: _____

IFB Title: _____

Bidder must provide references for: Three other similar sized Municipalities provided the same services

Reference: _____ Contact: _____

Address: _____ Phone: _____

_____ Email: _____

Description and date(s) of supplies or services provided: _____

Reference: _____ Contact: _____

Address: _____ Phone: _____

_____ Email: _____

Description and date(s) of supplies or services provided: _____

Reference: _____ Contact: _____

Address: _____ Phone: _____

_____ Email: _____

Description and date(s) of supplies or services provided: _____

Request for Taxpayer Identification Number and Certification

**Give Form to the
 requester. Do not
 send to the IRS.**

Print or type See Specific Instructions on page 2.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.	
	2 Business name/disregarded entity name, if different from above	
	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶ _____	
	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i>	
	5 Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	6 City, state, and ZIP code	
	7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number											
				-			-				
or											
Employer identification number											
				-							

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following persons must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
5. Sole proprietorship or disregarded entity owned by an individual	The owner ³
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

CERTIFICATE OF GOOD STANDING

TO: Vendor

FROM: Purchasing Department

RE: **CERTIFICATE OF GOOD STANDING**

The **Awarded Vendor** must comply with our request for a **CURRENT “Certificate of Good Standing”**.

If you require information on how to obtain the “Certificate of Good Standing” or Certificate of Registration (Foreign Corporations) from the Commonwealth of Massachusetts, please call the Secretary of State’s Office at (617) 727-2850 (Press #1) located at One (1) Ashburton Place, 17th Floor, Boston, MA 02133 or you may access their web site at:
<http://corp.sec.state.ma.us/CorpWeb/Certificates/CertificateOrderForm.aspx>

If your company is incorporated outside of Massachusetts and therefore is a “foreign corporation”, but is registered to do business in Massachusetts, please comply with our request for the Certificate of Registration from the Commonwealth of Massachusetts. If your company is a foreign corporation, but is not registered to do business in Massachusetts, please provide the Certificate of Good Standing from your state of incorporation.

Please note that without the above certificate (s), the City of Somerville cannot execute your contract.

IMPORTANT NOTICE

Requests for Certificates of Good Standing by mail may take a substantial amount of time. A certificate may be obtained immediately in person at the Secretary’s Office at the address above. Also, at this time, the Secretary of State’s Office may not have your current annual report recorded. If this is the case, and you are therefore unable to obtain the Certificate of Good Standing, please forward a copy of your annual report filing fee check with your signed contracts. Please forward your original Certificate of Good Standing to the Purchasing Department upon receipt.

Thank You,

Purchasing Director

INSURANCE SPECIFICATIONS

INSURANCE REQUIREMENTS FOR AWARDED VENDOR ONLY:

Prior to commencing performance of any work or supplying materials or equipment covered by these specifications, the contractor shall furnish to the Office of the Purchasing Director a Certificate of Insurance evidencing the following:

A. GENERAL LIABILITY - Comprehensive Form

Bodily Injury Liability.....\$ One Million

Property Damage Liability.....\$ One Million

B. COVERAGE FOR PAYMENT OF WORKER'S COMPENSATION BENEFIT PURSUANT TO CHAPTER 152 OF THE MASSACHUSETTS GENERAL LAWS IN THE AMOUNT AS LISTED BELOW:

WORKER'S COMPENSATION.....\$ Statutory

EMPLOYERS' LIABILITY.....\$ Statutory

C. AUTOMOBILE LIABILITY INSURANCE AS LISTED BELOW:

BODILY INJURY LIABILITY.....\$ STATUTORY

1. A contract will not be executed unless a certificate (s) of insurance evidencing above-described coverage is attached.
2. Failure to have the above-described coverage in effect during the entire period of the contract shall be deemed to be a breach of the contract.
3. All applicable insurance policies shall read:
"CITY OF SOMERVILLE" as a certificate holder and as an additional insured for general liability only along with a description of operation in the space provided on the certificate.

Certificate Should Be Made Out To:

**City Of Somerville
Purchasing Department
93 Highland Avenue
Somerville, Ma. 02143**

Note: If your insurance expires during the life of this contract, you shall be responsible to submit a new certificate(s) covering the period of the contract. No payment will be made on a contract with an expired insurance certificate.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

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

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

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No. Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
INSURED	INSURER A :	
	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y/N If yes, describe under DESCRIPTION OF OPERATIONS below		N/A				WC STATUTORY LIMITS OTHER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

ADD "X" HERETO CERTIFY THAT THE CITY OF SOMERVILLE IS AN ADDITIONAL INSURED

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

DESCRIPTION OF PROJECT, SOLICITATION NUMBER AND THAT THE CITY OF SOMERVILLE IS A CERTIFICATE HOLDER AND ADDITIONAL INSURED

CERTIFICATE HOLDER**CANCELLATION**

CERTIFICATES SHOULD BE MADE OUT TO:

CITY OF SOMERVILLE
c/o PURCHASING DEPARTMENT
93 HIGHLAND AVE
SOMERVILLE, MA 02143

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

AUTHORIZED REPRESENTATIVE

RFP # 18-14
SECTION 4.0
PRICING

By signing this Price Form, the Proposer certifies the following bulleted statements and offers to supply and deliver the materials and services specified below in full accordance with the Contract Documents supplied by the City of Somerville entitled: Operations and Maintenance of City-Owned Solar Facilities

- The proposals will be received at the office of the Purchasing Director, Somerville City Hall, 93 Highland Avenue, Somerville, MA 02143 no later than **9/21/2017 by 11AM EST**
- If the **awarded** vendor is a Corporation a “Certificate of Good Standing” (produced by the Mass. Sec. of State) must be furnished with the resulting contract (see Section 3.0.)
- **Awarded Vendor** must comply with Living Wage requirements (see Section 3.0; only for services)
- **Awarded Vendor** must comply with insurance requirements as stated in Section 3.0.
- The Purchasing Director reserves the right to accept or reject any or all proposals and/or to waive any informalities if in her/his sole judgment it is deemed to be in the best interest of the City of Somerville.
- The following prices shall include delivery, the cost of fuel, the cost of labor, and all other charges.
- This form to be enclosed in sealed proposal package.

Please provide Unit Price for the following and include any additional fees not listed:

<u>10/23/2017 - 10/22/2020 Total Project Fee (Excludes Year One Corrective Action List)</u>		
Year One	Year Two	Year Three
\$ _____	\$ _____	\$ _____
<u>10/23/2017 - 10/22/2020 Hourly Fee Schedule of Maintenance Personnel</u>		
Principal / Project Manager	\$ _____	
Title:	\$ _____	
Title:	\$ _____	
Title:	\$ _____	
Title:	\$ _____	
Title:	\$ _____	

Project Cost - Corrective Action List	
Argenziano School	\$ _____
Capuano School	\$ _____
Somerville High School	\$ _____

Name of Company/Individual:

Address, City, State, Zip:

Tel #

Email:

**Signature of Authorized
Individual**

Please acknowledge receipt of any and all Addenda (if applicable) by signing below and including this form in your proposal package. Failure to do so may subject the proposer to disqualification.

ACKNOWLEDGEMENT OF ADDENDA:

Addendum #1 ____ #2 ____ #3 ____ #4 ____ #5 ____ #6 ____ #7 ____ #8 ____ #9 ____ #10 ____

APPENDIX A
City's General Terms and Conditions

CITY OF SOMERVILLE STANDARD CONTRACT GENERAL CONDITIONS

1. Definitions

"City" shall mean the City of Somerville, Massachusetts.

"Contract" and "Contract Documents" shall include the following documents, as applicable: City's Standard Contract Form; these Standard Contract General Conditions; City's Invitation for Bids, Request for Proposals, Request for Quotation, or other solicitation; the Vendor's response to the City's solicitation document including certifications but excluding any language stricken by City as unacceptable. Appendices are made an integral part of this Contract. The Contract documents are to be read collectively and complementary to one another; any requirement under one shall be as binding as if required by all. In the event of any conflict or inconsistency between the provisions of the City's Standard Contract Form or these Standard Contract General Conditions and any other Contract Documents or appendices, the provisions of the City's Standard Contract Form and/or these Standard Contract General Conditions shall prevail. In the event of any conflict or inconsistency between the Contract Documents and any applicable state law, the applicable state law shall prevail.

"Certify" or "Certifies" shall mean that the Vendor certifies under pains and penalties of perjury to the statement referenced.

"Vendor" shall mean the individual, corporation, partnership, or other entity which is a party to this Contract.

2. Performance; Time

The Vendor shall perform in accordance with all provisions of this Contract in a manner satisfactory to the City. The Vendor's performance shall be timely and meet or exceed industry standards for the performance required. It is understood and agreed that all specified times or periods of performance are of the essence of this Contract.

3. Acceptance of Goods or Services

Performance under this Contract shall include services rendered, obligations due, costs incurred, goods and deliverables provided and accepted by the City. The City shall have a reasonable opportunity to inspect all goods and deliverables, services performed by, and work product of the Vendor, and accept or reject same.

4. Compensation

The City shall pay in full and complete compensation for goods received and accepted and services performed and accepted under this Contract in an amount not to exceed the amount stated on the face of this Contract paid in accordance with the rate indicated or in accordance with a prescribed payment schedule.

The Vendor shall periodically submit invoices to the City, for which compensation is due under this Contract and requesting payment for goods received or services rendered by the Vendor during the period covered by the invoice. The invoice must agree to the rates/payment schedule as indicated in this contract. The invoice shall include the following information: vendor name, vendor remit address, invoice date, invoice number, itemized listing of goods, services, labor, and expenses and indicating the total amount due. The City shall review the invoice and determine the value of goods or services accepted by the City in accordance with the Contract Documents. Payments due to the Vendor will be made within sixty (60) days from receipt and approval of an invoice. Final invoices from the Vendor are due no later than ninety (90) days from the Completion Date. Any invoice received past the ninety (90) day date will not be paid. If this Contract is extended, invoices related to the extension period are due no later than ninety (90) days from the Extended Completion Date.

The Vendor shall furnish such information relating to the goods or services or to documentation of labor or expenses as may be requested by the City. Acceptance by the Vendor of any payment or partial payment, without any written objection by the Vendor, shall in each instance operate as a release and discharge of the City from all claims, liabilities, or other obligations relating to the performance of this Contract.

In case of an error in extension prices quoted herein, the unit price will govern (Applicable To Goods Only).

5. Release of City on Final Payment

Acceptance by the Vendor of payment from the City for final delivery of goods or rendering of services under this Contract shall be deemed to release forever the City from all claims and liabilities, except those which the Vendor notifies the City in writing within three (3) months after such payment.

6. Risk of Loss

The Vendor shall bear the risk of loss, for any cause, for any Vendor materials used for this Contract and for all goods, deliverables, and work in process, until possession, ownership, and full legal title to the goods and deliverables are transferred to and accepted by the City.

The Vendor shall pay and be exclusively responsible for all debts for labor and material contracted for by the Vendor for the rental of any appliance or equipment hired by Vendor and/or for any expense incurred on account of services to be performed or goods delivered under this Contract.

The City shall not be liable for any personal injury or death of the Vendor, its officers, employees, or agents.

7. Indemnification

The Vendor shall indemnify, defend (with counsel acceptable to City, which acceptance shall not be unreasonably withheld), and hold harmless the City of Somerville, its officers, employees, agents and representatives from and against any and all claims, suits, liabilities, losses, damages, costs or expenses (including judgments, costs, interest, attorney's fees and expert's fees) arising from or in connection with any act or omission relating in any way to the performance of this Contract by the Vendor, its agents, officers, employees, or subcontractors.

The extent of this indemnification shall not be limited by any obligation or any term or condition of any insurance policy. The obligations set forth in this paragraph shall survive the expiration or termination of this Agreement.

8. Default; Termination; Remedies

A. Events of Default

The following shall constitute events of default under this Contract: (1) The Vendor has made any material misrepresentation to the City; or (2) a judgment or decree is entered against the Vendor approving a petition for an arrangement, liquidation, dissolution or similar relief relating to bankruptcy or insolvency; or (3) the Vendor files a voluntary petition in bankruptcy or any petition or answer seeking any arrangement, liquidation or dissolution relating to bankruptcy, insolvency or other relief for debtors; or (4) the Vendor seeks or consents or acquiesces in the appointment of any trustee or receiver, or is the subject of any other proceeding under which a court assumes custody or control over the Vendor or of any of the Vendor's property; or (5) the Vendor becomes the defendant in a levy of an attachment or execution, or a debtor in an assignment for the benefit of creditors; or (6) the Vendor is involved in a winding up or dissolution of its corporate structure; or (7) any failure by the Vendor to perform any of its obligations under this Contract, including, but not limited to, the following: (i) failure to commence performance of this Contract at the time specified in this Contract due to a reason or circumstance within the Vendor's reasonable control, (ii) failure to perform this Contract with sufficient personnel and equipment or with sufficient material to ensure the completion of this Contract within the specified time due to a reason or circumstance within the Vendor's reasonable control, (iii) failure to perform this Contract in a manner reasonably satisfactory to the City, (iv) failure to promptly re-perform within reasonable time the Services or Supplies that were properly rejected by the City as erroneous or unsatisfactory, (v) discontinuance of the Services or Supplies for reasons not beyond the Vendor's reasonable control, (vi) failure to comply with a material term of this Contract, including, but not limited to, the provision of insurance and nondiscrimination; or (8) any other acts specifically and expressly stated in this Contract as constituting a basis for termination of this Contract.

B. Termination Upon Default.

In the event of a default by the Vendor, the City, acting through its Chief Procurement Officer, may, at its option, terminate this Contract immediately by written notice of termination specifying the termination date.

Notwithstanding the above, in the event of a default by the Vendor, the City, acting through its Chief Procurement Officer, may give notice in writing of a default, which notice shall set forth the nature of the default and shall set a date, by which the Vendor shall cure the default, subject to approval of the City.

If the Vendor fails to cure the default, the City, in the alternative, may make any reasonable purchase or contract to acquire goods or services in substitution for those due from Vendor. The City may deduct the cost of any substitute contract or nonperformance together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Vendor. If the damages sustained by the City exceeds sums due or to become due, the Vendor shall pay the difference to the City upon demand.

Upon immediate notification to the other party, neither the City nor the Vendor shall be deemed to be in default for failure or delay in performance due to Acts of God or other causes factually beyond their control and without their fault or negligence. Subcontractor failure to perform or price increases due to market fluctuations or product availability will not be deemed factually beyond the Contractor's control. The City retains all rights and remedies at law or in equity.

If the Vendor fails to cure the default within the time as may be required by the notice, the City, acting through its Chief Procurement Officer, may, at its option terminate the Contract.

The parties agree that if City erroneously or unjustifiably terminates this Contract for cause, such termination shall be deemed a termination for convenience, which shall be effective thirty (30) days after such notice of termination for cause is provided.

C. Termination For Convenience.

Notwithstanding any language to the contrary within this Contract, the City, acting through its Chief Procurement Officer, may terminate this Contract, without cause at any time, effective upon the termination date stated in the notice of termination. In the event of termination for convenience, the Vendor shall be entitled to be paid for goods delivered and accepted and services rendered and accepted prior to notice of termination at the prices stated in the Contract, subject to offset of sums due the Vendor against sums owed by the Vendor to the City. Any goods or services delivered after notification of termination but prior to the effective termination date must be approved in writing in advance by the City in order to be eligible for payment. In no event shall the Vendor be entitled to be paid for any goods or services delivered after the effective date of termination. The Vendor shall be entitled to no other compensation of any type. In no case shall a Vendor be entitled to lost profits.

D. Obligations Upon Termination.

Upon termination of this Contract with or without cause, the Vendor shall immediately, unless otherwise directed by the City: 1. cease performance upon the stated termination date; 2. surrender to the City the Vendor's work product, which is deliverable under the Contract, whatever its state of completion; and 3. return all tools, equipment, finished or unfinished documents, data, studies, reports, correspondence, drawings, plans, models, or any other items whatsoever prepared by the Vendor pursuant to this Contract, which shall become property of the City, or belonging to or supplied by the City.

E. Rights and Remedies.

The City shall have the right to: a) disallow all or any part of the Vendor's invoices not in material compliance with this Contract; b) temporarily withhold payment pending correction by the Vendor of any deficiency; c) sue for specific performance or money damages or both, including reasonable attorneys' fees and costs incurred in enforcing any Vendor obligations hereunder; d) pursue remedies under any bond provided; and e) pursue such other local, state and federal actions and remedies as may be available to the City.

Any termination shall not effect or terminate any of the rights or remedies of the City as against the Vendor then existing, or which may accrue because of any default. No remedy referred to in this subsection is intended to be exclusive, but shall be cumulative, and in addition to any other remedy referred to above or otherwise available to the City or Vendor at law or in equity. The Vendor shall not gain nor assert any right, title or interest in any product produced by the Vendor under this Contract.

9. Insurance

The Vendor shall comply with all insurance requirements set out in the Contract Documents. The Vendor shall deliver to the City new certificates of insurance at least ten (10) calendar days prior to expiration of the prior insurance and shall furnish the City with the name, business address and telephone number of the insurance agent. Vendor certifies compliance with applicable state and federal employment laws or regulations including but not limited to G.L. c. 152 (Workers' Compensation), as applicable, and Vendor shall provide City with acceptable evidence of compliance with the insurance requirements of this chapter.

10. Governing Law; Forum

This Contract shall be governed by the laws of the Commonwealth of Massachusetts. Any action arising out of this Contract shall be brought and

maintained in a state or federal court in Massachusetts which shall have exclusive jurisdiction thereof.

11. Complete Agreement

This Contract supersedes all prior agreements and understandings between the parties and may not be changed unless mutually agreed upon in writing by both parties.

12. Amendment

No amendment to this Contract shall be effective unless it is signed by the authorized representatives of all parties and complies with all requirements of the law. All alterations or additions, material or otherwise, to the terms and conditions of this Contract must be in writing and signed by the City, as set forth in the below section, and the Vendor.

13. Conditions of Enforceability Against the City

This Contract is only binding upon, and enforceable against, the City if: (1) the Contract is signed by the Mayor; (2) endorsed with approval by the City Auditor as to appropriation or availability of funds; (3) endorsed with approval by the City Solicitor as to form; and (4) funding is appropriated for this Contract or otherwise made available to the City.

This Contract and payments hereunder are subject to the availability of an appropriation therefor. Any oral or written representations, commitments, or assurances made by any City representatives are not binding. Vendors should verify funding and contract execution prior to beginning performance.

When the amount of the City Auditor's certification of available funds is less than the face amount of the Contract, the City shall not be liable for any claims or requests for payment by Vendor which would cause total claims or payments under this Contract to exceed the amount so certified.

The City's Standard Contract Form and Standard Contract General Conditions shall supersede any conflicting verbal or written agreements or forms relating to the performance of this Contract, including contract forms, purchase orders, or invoices of the Vendor.

The City shall have no legal obligation to compensate a Vendor for performance that is outside the scope of this Contract. The City shall make no payment prior to the execution of a Contract.

14. Taxes

Purchases incurred by the City are exempt from Federal Excise Taxes and Massachusetts Sales Tax, and prices must exclude any such taxes. Tax Exemption Certificates will be furnished upon request. The City of Somerville's Massachusetts Tax Exempt Number is: **MO46 001 414**.

15. Independent Contractor

The Vendor is an independent contractor and is not an employee, agent or representative of the City. The City shall not be obligated under any contract, subcontract, or commitment made by the Vendor.

16. Assignment; Sub-Contract

The Vendor shall not assign, delegate, subcontract, or transfer this Contract or any interest herein, without the prior written consent of the City.

17. Discrimination

The Vendor agrees to comply with all applicable laws prohibiting discrimination in employment. The Vendor agrees that it shall be a material breach of this Contract for the Vendor to engage in any practice which shall violate any provision of G.L. c. 151B, relative to discrimination in hiring, discharge, compensation or terms, conditions or privileges of employment because of race, color, religious creed, national origin, sex, sexual orientation, age, or ancestry.

18. Waiver

All duties and obligations contained in this Contract can only be waived by written agreement. Forbearance or indulgence in any form or manner by a party shall not be construed as a waiver, nor in any way limit the legal or equitable remedies available to said party.

19. Severability

In the event that any provision of this Contract shall be held to be illegal, unenforceable or void, such provision shall be severed from this Contract and the entire Contract shall not fail on account thereof, but otherwise remain in full force and effect and shall be enforced to the fullest extent permitted by law.

20. Notice

The parties shall give notice in writing by one of the following methods: (i) hand-delivery; (ii) facsimile; (iii) certified mail, return receipt requested; or (iv) overnight delivery service, to the Vendor at the contact information specified on the face of this Contract; to the City addressed to: Purchasing Director, Somerville City Hall, 93 Highland Avenue, Somerville, MA 02143, Fax # 617-625-1344 with a copy to: City Solicitor, City Hall, 93 Highland Avenue, Somerville, MA 02143. Notice shall be effective on the earlier of (i) the day of actual receipt, or (ii) one day after tender of delivery.

21. Captions

The captions of the sections in this Contract are for convenience and reference only and in no way define, limit or affect the scope or substance of any section of this Contract.

22. Non-Collusion

This Contract was made without collusion or fraud with any other person and was in all respects bona fide and fair. As used in this paragraph, the word, "person," shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity. The Vendor certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

23. Tax and Contributions Compliance

The Vendor certifies, under pains and penalties of perjury, in accordance with MGL c. 62C, s. 49A, that the Vendor is in full compliance with all laws of the Commonwealth of Massachusetts relating to taxes, is in good standing with respect to all returns due and taxes payable to the Commonwealth, reporting of employees and contractors, and withholding and remitting of child support and to contributions and payments in lieu of taxes. In the event that the City is notified by the IRS that the TIN provided by the vendor and the vendor name as recognized by the IRS do not match their records, the vendor is responsible for all penalties.

24. Municipal Taxes, Charges and Liens

The Vendor certifies that it has paid all accounts receivable owed to the City of Somerville, including but not limited to real estate, personal property or excise tax, parking fines, water/sewer charges, license/permit fees, fines and/or any other municipal lien charges due to the City of Somerville. Pursuant to MGL c. 60, s. 93, the Vendor agrees that the Collector/Treasurer of the City may withhold from amounts owing and payable to the Vendor under this Contract any sums owed to any department or agency of the City which remain wholly or partially unpaid. This shall include but not be limited to unpaid taxes and assessments, police details, and any other fees and charges until such sums owed have been fully paid, and the Collector/Treasurer may apply any amount owing and payable to the Vendor to satisfy any monies owed to the City.

25. Compliance with Applicable Laws

The Vendor shall comply with all applicable federal and state laws, and city ordinances and regulations, which in any manner affect performance of this Contract. The Vendor shall defend, indemnify, and hold harmless the City, its officers, agents and employees against any claim or liability arising from or based on the violations of such ordinances, regulations or laws, caused by the negligent actions of the Vendor, its agents, employees or subcontractors.

26. Conflict of Interest

The Vendor certifies that no official or employee of the City has a financial interest in this Contract or in the expected profits to arise therefrom, unless there has been compliance with the provisions of G. L. c. 43, § 27 (Interest in Public Contracts by Public Employees), and G. L. c. 268A (Conflict of Interest). The Vendor certifies that it has reviewed the Massachusetts Conflict of Interest Law, MGL c. 268A and at any time during the term of this Contract, the Vendor is required to affirmatively disclose in writing to the City the details of any potential conflicts of interest of which the Vendor has knowledge or learns of during the Contract term.

27. Licenses and Permits

The Vendor certifies that it is qualified to perform the Contract and shall obtain and possess at its sole expense, all necessary licenses, permits, or other authorizations required by the City, the Commonwealth of Massachusetts or any other governmental agency, for any activity under this Contract. The Vendor shall submit copies of such licenses and/or permits to the City upon request. If a business, the Vendor certifies that it is a duly organized and validly existing entity, licensed to do business in Massachusetts, in good standing in the Commonwealth of Massachusetts, with full power and authority to consummate the Contract, and listed under the Commonwealth of Massachusetts Secretary of State's website as required by law.

28. Recordkeeping, Audit, and Inspection of Records All records, work papers, reports, questionnaires, work product, regardless of its medium, prepared or collected by the Vendor in the course of completing the work to be performed under this Contract shall at all times be the exclusive property of the City. In the event of termination or upon expiration of the Contract, the Contractor shall promptly deliver to the City all documents, work papers, calculations, data, drawings, plans, and other tangible work product or materials pertaining to the services performed under this Contract, in both a physical format and electronic format. The electronic format shall be either Comma Separated Values (CSV) files along with the mapping information for each field, or Microsoft SQL (2005/2008) database with all associated Database Schemas, or such other electronic format(s) acceptable to the city. At no additional cost to the City, the Contractor shall store and preserve such records while in their possession in accordance with the requirements of the Massachusetts Public Records Law, the Commonwealth of Massachusetts record retention schedule and City of Somerville record retention schedule. The City shall have the right to at reasonable times and upon reasonable notice to examine and copy, at its reasonable expense, the books, records, and other compilations of data of the Vendor which relates to the provision of services under this Contract. Such access shall include on-site audits, review, and copying of said records.

29. Debarment or Suspension

The Vendor certifies that it has not been and currently is not debarred or suspended by any federal, state, or municipal governmental agency under G. L. c. 29, § 29F or other applicable law, nor will it contract with a debarred or suspended subcontractor on any public contract.

30. Warranties (Applicable to Goods Only)





The Vendor warrants that (1) the goods sold are merchantable, (2) that they are fit for the purpose for which they are being purchased, (3) that they are absent any latent defects and (4) that they are in conformity with any sample which may have been presented to the City. The Vendor guarantees that upon inspection, any defective or inferior goods shall be replaced without additional cost to the City. The Vendor will assume any additional cost accrued by the City due to the defective or inferior goods. The Vendor guarantees all goods for a period of no less than one (1) year, unless a greater period of time is specified in the Contract Documents.

APPENDIX B
Corrective Actions List and Locations


Argenziano Corrective Items

Item	Location	
1 Communications cable possibly damaged	AlsoEnergy enclosure	
2 DIN end connector not fully attached	AlsoEnergy enclosure	
3 Gaskets missing on conduit bodies	(Multiple locations)	
4 MC4 connectors made up exposed to rain. Best to keep them under the array.	(Multiple locations)	


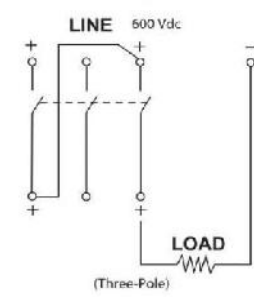



Argenziano Corrective Items

Item	Location	
5 Soiling found on bottom half inch of modules. Consider washing.	Array	
6 Extensive corrosion found on a lot of the hardware and on exposed pipe threadings. Replace hardware with hot-dipped galvanized or stainless steel hardware. Wire brush corroded threads and spray with cold galv.	(Multiple locations)	
7 RMC not supported within 3' of pullbox	Source circuit pullbox	
8 Tape holding BOM temp sensor is starting to fail	BOM temp sensor	





Argenziano Corrective Items

Item	Location	
9 Wire management failing in many places, not secured and laying on ballast.	(Multiple locations)	




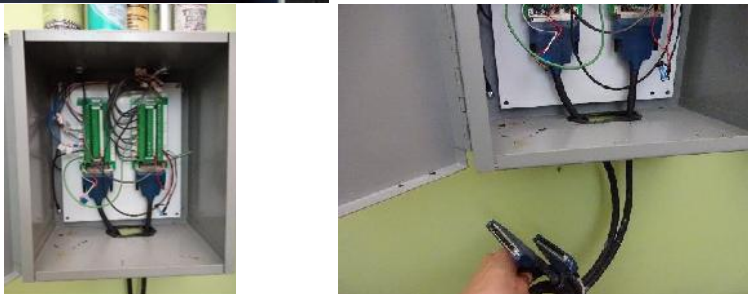
Capuano Corrective Items

Item	Location		
<p>1 DC disconnect positive not wired through two poles per mfg instructions. Reroute output circuit through two poles per Square D Data Bulletin 06/2010. This is an arcing hazard until fixed.</p>	<p>DC Disconnect</p>		 <p>LINE 600 Vdc LOAD (Three-Pole)</p>
<p>2 SPD leads are landed on a lug that is not suitable for that size wire.</p>	<p>DC Disconnect</p>		
<p>3 DC conduits entering disconnect do not appear to have a good bonding connection. At minimum paint should be scraped off the can between surface and lock ring and lock rings should be tightened until they dig into the metal of the can. Alternatively, a bonding lock ring can be installed.</p>	<p>DC Disconnect</p>		
<p>4 Negative PV output circuit leg is bonded to ground via #6 bonding jumper in the DC disconnect. The bond should be made in only one place and preferably as close to the point of DC/AC conversion as possible. Remove #6 bonding jumper in the DC disconnect and install Xantrex DC bonding kit in the inverter if not already installed.</p>	<p>DC Disconnect</p>		





Capuano Corrective Items

Item	Location	
<p>5 AC conduits entering disconnect do not appear to have a good bonding connection. At minimum paint should be scraped off the can between surface and lock ring and lock rings should be tightened until they dig into the metal of the can. Alternatively, a bonding lock ring can be installed.</p>	AC Disconnect	
<p>6 Weather station power supply not properly mounted</p>	Weather station box	
<p>7 Loose wiring (not connected on either end). Is this needed for DAS communication? Remove if not needed.</p>	Weather station box	
<p>8 Hardware and conduit thread corrosion through rooftop. Of particular note, the set screws in the lag-in lugs near the array are corroded and threaten the bond of the array. Replace zinc or plain steel hardware with hot dipped galvanized or stainless steel hardware. Wire brush corroded conduit threads and spray with cold galv.</p>	(Multiple locations)	




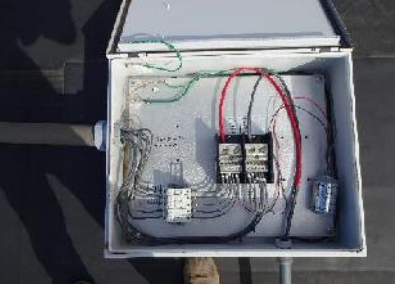
Capuano Corrective Items

Item	Location	
9 Plants growing through array. Remove and spray gaps between concrete blocks with weed prevention product.	Array	
10 DC conduits entering combiner box do not appear to have a good bonding connection. At minimum paint should be scraped off the can between surface and lock ring and lock rings should be tightened until they dig into the metal of the can. Alternatively, a bonding lock ring can be installed.	Combiner Box	
11 Ground lug is not listed for use with two wires landed.	Combiner Box	
12 DAS not connected to anything. Connect to internet gateway for reporting purposes.	DAS Cabinet (in 1st fl office)	




Somerville High School Corrective Items

Item	Location	
1 Inverter OCPD tripped. Potential AC ground fault	Inverter output circuit	
2 DC disconnect signage missing	DC Disconnect	
3 AC disconnect signage missing	AC Disconnect	
4 Inverter signage missing	Inverter	

Somerville High School Corrective Items

Item	Location	
<p>5 Corrosion of hardware and support systems throughout. Replace with appropriate materials.</p>	<p>(Multiple locations)</p>	
<p>6 Inverter racking corrosion</p>	<p>(Multiple locations)</p>	
<p>7 Ballast directly laying on EPDM roof</p>	<p>Array SE corner</p>	
<p>8 Surge protector not mounted properly</p>	<p>Combiner box</p>	

Somerville High School Corrective Items

Item	Location	
9 No signage on combiner box	Combiner box	
10 Source circuits laying on roof (failing wire management)	(Multiple locations)	
11 Interconnection panel signage missing	Panel A21	

APPENDIX C
Solar Project Asset Management Assistance Report

CITY OF SOMERVILLE
Solar Project Asset
Management Assistance

ANTARES Contact:

Ali Schmidt
Project Manager
aschmidt@antares.org
(301) 731-1900 ext. 703

Submission Date:

May 24, 2016

Corporate Headquarters

4500 Forbes Blvd, Suite 410
Lanham, MD 20706

Southeast Regional Office

57 S. Main Street
Harrisonburg, VA 22801
540-442-9848

Northeast Regional Office

7000 E Genesee St
Bldg D, Upper Floor
Fayetteville, NY 13066

Remote Offices

Moaravia, IA
Denver, CO
Petaluma, CA

To the extent allowable by law, the information, data and drawings embodied in this proposal are strictly confidential and are supplied on the understanding that they will be held confidentially and not disclosed to third parties without the prior written consent of ANTARES Group Inc.

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APPENDIX A – Index of Identified Issues

APPENDIX B – Provided Construction Drawings

1 INTRODUCTION

ANTARES Group Incorporated (ANTARES) was retained by the City of Somerville (the City) for solar photovoltaic (PV) project asset management assistance for three of its existing deployed systems in the Somerville area. The projects were all roof-mounted systems on the following public educational facilities:

1. Dr. Albert F. Argenziano School at Lincoln Park (Argenziano)
2. Michael E. Capuano Early Childhood Center (Capuano)
3. Somerville High School (Somerville HS)

ANTARES performed a site visit of these three facilities to assess the existing conditions of each facility for the purposes of verifying operational characteristics and safety as well as evaluating the potential to maximize project value and cash flows.

Available documentation for each project was also reviewed to provide a basis for understanding of the systems including system design, equipment warranties, and contractual considerations. The following table includes an overview of each project and notes the types of documentation provided for each site.

Exhibit 1. System Summary and Documentation

	Argenziano	Capuano	Somerville HS
System Size (kWdc)	52.65	34.9	34.96
Description	Roof-mounted PV array	Roof-mounted PV array	Roof-mounted PV array
Developer	Broadway Electrical (install & maintenance)	Nex Gen Energy Solutions	Honeywell
Year Installed	2012	2005	2008
<i>Project Documentation (x = received)</i>			
Contracts	x		x
Construction as-built drawings	x	x	x (partial)
Commissioning documentation	x	x	
Maintenance and event logs			
Monitoring data and logs	x		
Warranty information for major equipment		x	
REC / SREC information	x (RPS Class I)		

This report provides a summary of the findings for each array based on the information collected from the site visit and other documentation provided. The drawings that were made available for each project are included in Appendix B.

2 FINDINGS

Evan Merkel performed site visits of the three educational facilities on Tuesday, May 10, 2016. The findings for each location are provided below.

2.1 ARGENZIANO

Inspection of the Argenziano facility found the system to be operational at the time of the visit and outputting power as expected from the measured environmental conditions. Open circuit voltage readings, shown below in Exhibit 2, did not show any anomalous values.

Exhibit 2. DC Voltage Readings For Argenziano Array

Inverter – String	Voltage (V _{DC})	Inverter – String	Voltage (V _{DC})
A-1	416.2	D-1	414.0
A-2	414.5	D-2	415.7
A-3	414.0	D-3	414.9
B-1	412.5	E-1	415.5
B-2	413.6	E-2	415.9
B-3	412.5	E-3	415.5
C-1	411.4	F-1	415.7
C-2	411.4	F-2	415.1
C-3	411.9	F-3	415.9

An inspection of the DC array and balance of system equipment found several issues pertaining to system longevity and safety. Some of these issues include: corrosion of hardware, failing wire management, and missing conduit body gaskets, as seen in the exhibits below. The complete list of identified issues is outlined in the attached reporting index.

Exhibit 3. Visible Corrosion of Conduits and Hardware



Exhibit 4. Failing Wire Management



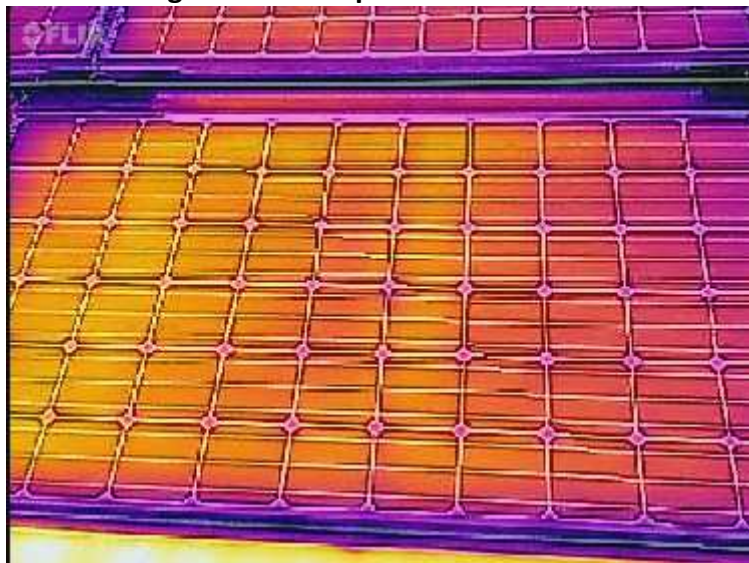
Exhibit 5. Missing Conduit Body Gasket



Measurements were taken from array edges to nearby serviceable objects and roof edges for adherence to International Fire Code (“Code”) and best practices. In general access ways are provided around the perimeter of the arrays and sufficient easement from roof edges is given, however, in several places proximity to nearby serviceable equipment is not sufficient per Code. That said, this Code section is primarily aimed at smoke ventilation opportunities, for which there is ample room near the aforementioned equipment. Therefore, this does not present a major safety concern.

The array was scanned during operation using an infrared camera to identify potential ‘hotspots’ in modules which may be caused by failing cells or module internal electrical components. The modules scanned did not present any identifiable hotspots. Exhibit 6 below shows a typical IR shot of the modules during operation.

Exhibit 6. Argenziano Hotspot Examination



The Data Acquisition System (DAS), provided by Also Energy¹, also appeared to be operational at the time of the visit, although no data is being transferred to the cloud portal. It was noted in the portal log that a communications error had occurred several years ago and was corrected by contacting Also Energy and initiating a software update. Other project documentation mentioned a possible IT issue concerning the school firewall which could be resolved internally by the IT department that manages the school's network.

2.2 CAPUANO

Inspection of the Capuano facility found the system to be operational at the time of the visit and outputting power as expected from the measured environmental conditions. An open circuit voltage reading across the combiner box buses showed $V_{oc} = 483.9V_{DC}$, roughly in line with the expected value. The older style combiner boxes installed at the project did not allow for isolation of strings or fuses as is now required by National Electrical Code, and as such individual string voltages were not able to be safely recorded at the time of the visit. However, several individual operating current values were taken during operation to verify general consistency. These values ranged from $1.9A_{DC}$ to $3.3A_{DC}$. The wider than expected range is likely due to inconsistencies throughout the array such as non-homogenous aging, soiling, and localized shade, the lattermost of which was of particular issue in areas where plants and weeds were growing up through the center of the array (see Exhibit 7 below).

¹ www.alsoenergy.com

Exhibit 7. Plants Growing Through Array



In general, much of the equipment appeared to be in good condition with the exception of some notable hardware corrosion and wire deterioration on the roof. Based on the O&M documentation the warranty terms for the inverter and racking have ended. The module specified in the warranty section does not match the specification in the drawings. The module vendor could not be verified during the visit as there was no access to the rear of the modules due to the racking design. Exhibit 8 below shows several issues near the array edge where cables are transitioned into the combiner box such as: deterioration from sun exposure², corrosion of improperly specified ground lugs, and corrosion of PowerGuard racking system hardware. None of these issues have an immediate effect on performance, however, they represent potential future safety issues.

Exhibit 8. Deterioration from Outdoor Conditions

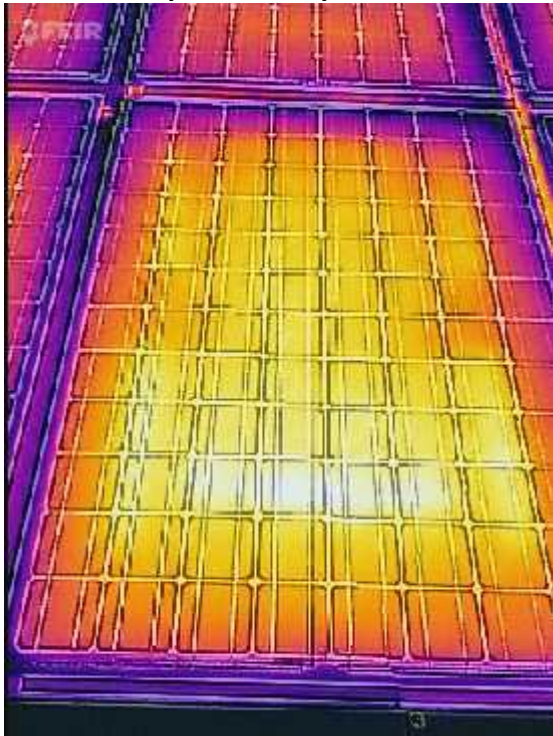


² The deterioration is limited to the equipment grounding conductor which is not required to have a sheathing. Sheathing failure does not represent a safety issue in this case.

Measurements were taken from array edges to nearby serviceable objects and roof edges for adherence to International Fire Code and best practices. Easements from roof edges were five feet wide in at least one area (Code requires six feet of access). As the pathway is otherwise open and there is high mobility opportunity on the roof in general, this does not warrant relocation of the system.

The array was scanned during operation using an infrared camera to identify potential ‘hotspots’ in modules which may be caused by failing cells or module internal electrical components. The modules scanned did not present any identifiable hotspots. Exhibit 9 below shows a typical IR shot of the modules during operation.

Exhibit 9. Capuano Hotspot Examination



The DAS is constructed of individually-supplied test instruments and data collection components and seemingly not from a DAS package with integrated cloud data collection. Test instruments appeared to be installed correctly and wired to a central data reading interface on the first floor. This equipment was equipped with a communications interface for connection to data collection hardware via SCSI connector, however, no hardware was installed and the communications cables were disconnected. Without the hardware to read the communications signal it was not possible to verify operation of the DAS.

2.3 SOMERVILLE HS

Inspection of Somerville HS found the system to be non-operational at the time of the visit. ANTARES made several attempts to turn on the system, but the upstream breaker tripped each time during start-up indicating a possible AC fault. A DC ground fault was not indicated on the

inverter. Voltage readings were taken at the combiner box for the five strings in the array. The readings, shown below in Exhibit 10, did not show any anomalous values for the conditions during testing.

Exhibit 10. DC Voltage Readings For Somerville HS Array

Inverter – String	Voltage (V _{DC})
A-1	327.1
A-2	324.5
A-3	326.5
A-4	326.8
A-5	327.4

Similar to the other two systems, there was a considerable amount of corrosion found on infrastructure associated with the PV system including inverter racking and hardware as seen in Exhibit 11 below. Nearly the entire inverter strut rack shows heavy corrosion.

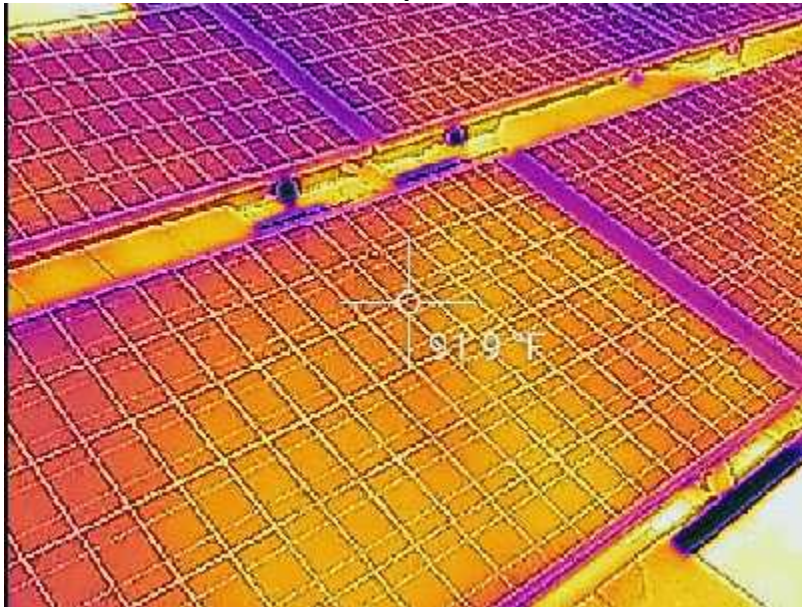
Exhibit 11. Corrosion of Inverter Racking



Measurements were taken from array edges to nearby serviceable objects and roof edges for adherence to International Fire Code and best practices. Easements from roof edges ample but the access around a roof smoke ventilation hatch was under the Code minimum. Clearances on all other sides were acceptable and, further, the orientation of the hatch allows for full door opening without impedance from the array. As such, the clearance to the vent hatch does not pose an immediate safety issue.

The array was scanned during operation using an infrared camera to identify potential 'hotspots' in modules which may be caused by failing cells or module internal electrical components. The modules scanned did not present any identifiable hotspots. Exhibit 12 below shows a typical IR shot of the modules during operation.

Exhibit 12. Somerville HS Hotspot Examination



The extent of the DAS was not able to be verified during the visit, as system documentation lacked DAS information and no equipment location signage or directory existed on site. A bi-directional revenue-grade production meter was located in the vicinity of the inverter which contained communications wiring presumably leading to data collection hardware or a cloud portal. This presumed equipment could not be located in the limited time allotted on site due to the complexity of the cable path and size of the building. No weather devices associated with the PV project were found, however, a separate weather station is located on the roof remote from the PV system. This existing system may be integrated into the monitoring platform for higher quality data capture.

3 REC REGISTRATION AND MANAGEMENT

None of the projects are eligible to generate SRECs (Solar Renewable Energy Credits) under the Massachusetts RPS due to the age of the systems. However, all of three of the evaluated PV projects are expected to be eligible to obtain Massachusetts RPS Class I status, which would be necessary to obtain Class I Renewable Energy Credits (RECs). Only the newest system (Argenziano) is listed as a Class I Renewable Generation Unit (MA RPS#1348-14; NEPOOL GIS Asset ID NON38131), the other two projects were not registered.

As seen in Exhibit 13, prices for MA RECs in recent years have ranged from about \$45/MWh to \$65/MWh. Since RECs could provide added value to the City, it would be beneficial to ensure that each operational system is registered in the Class I RPS program, and is maintained in order to generate as much energy (and RECs) as possible.

Exhibit 13. REC Compliance Market Prices

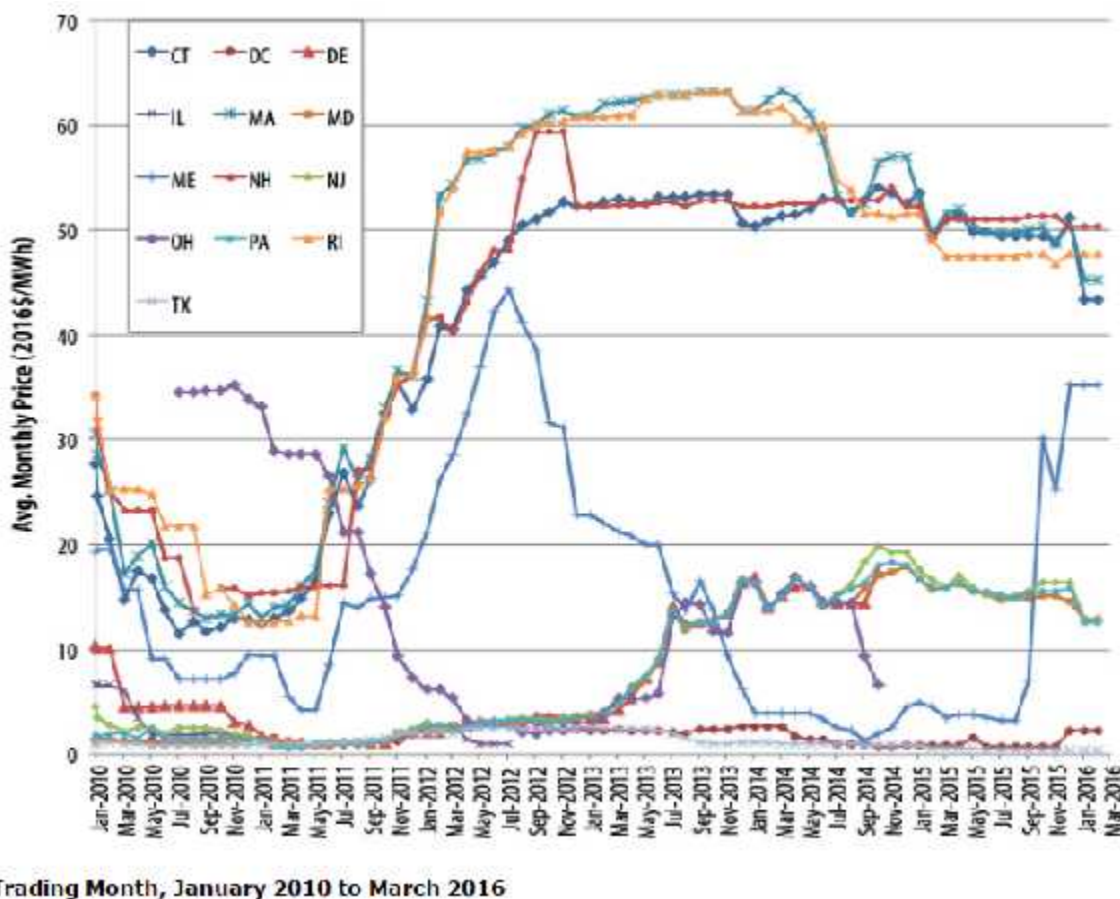


Image Source: <http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5>

4 RECOMMENDATIONS

The following is a summary of recommendations and next steps for each of the sites as well as general recommendations for updating program maintenance.

As there is no record of ongoing O&M practices, a new O&M service provider should be contracted to properly maintain the three systems. The scope should focus primarily on safety with additional scope for ensuring lowest levelized cost of energy produced by the systems.

AlsoEnergy, the DAS provider at the Argenziano school, is a widely-used DAS vendor with a simple and low-maintenance remote cloud portal for monitoring system activity. It is not anticipated that a change to an alternate DAS vendor will greatly benefit the project's cash flows or reliability. For ease of asset management, it is recommended that the Capuano and Somerville HS projects be retrofitted with AlsoEnergy communications equipment while leveraging existing test instrumentation at the sites to consolidate all systems under the same monitoring portal.

Further, the items identified in the attached report appendix should be remediated by a qualified PV/O&M contractor as they can affect project safety, performance, and longevity.

Only the Argenziano project is currently registered for Class I RECs. Registration of the other two systems could bring added value to the projects.

Optional follow-on O&M work which ANTARES can assist with includes:

-) Insulation resistance testing of all electrical feeders for detection of ground faults or potential future faults
-) Retaining qualified bids for an O&M and asset management contractor to perform corrective work and continue upkeep for the duration of project life
-) Array washing spot check, I-V curve tracing, and economic analysis³
-) Coordinate with local fire first responders regarding on-site response plans
-) SREC/REC management including registration of unregistered projects and setup of automated production reporting through MassCEC

4.1 ARGENZIANO

The system and DAS at the Argenziano facility both appear to be functioning correctly, however, the DAS seems to not be communicating with the cloud. As a first measure, AlsoEnergy, the DAS vendor, should be contacted for support to attempt to resolve the issue remotely as a software update previously solved the connectivity issues.

We also recommend that the IT specialist responsible for the school's IT network and infrastructure assess the connection of the DAS to the school's network determine whether the

³ A spot wash and before and after I-V curve trace can help determine the economic benefit/payback of a full array washing. For systems as small as those in this study, particularly Capuano and the High School, a spot check and washing economic analysis, as opposed to a full cleaning, may not make a considerable difference in value.

school's firewall is potentially blocking the DAS connection. If this is the case, it should not be difficult to set up a permanent exception for DAS access to the cloud.

4.2 CAPUANO

As with the Argenziano facility, the PV system appears to be functioning correctly, however, test instruments on site and associated data are not being collected or transmitted to a proper onsite or cloud-based system. The existing National Instruments connector block and SCSI boards may be replaced with an appropriate data collection interface and cloud gateway from AlsoEnergy.

4.3 SOMERVILLE HIGH SCHOOL

The system at Somerville HS is non-operational with the potential cause being a fault in the AC wiring between inverter and upstream breaker. All wiring and cabling for the system should be further inspected, including megger testing for determining the location of the possible fault. Further, the DAS system should be located by tracking the communications conduit running from the production meter in the roof penthouse down through the school. Once located, the DAS should be testing for operational condition and connectivity to the cloud (if applicable). If the DAS is found to be in good working order, it may be a minimal retrofit to convert the reporting system to a the AlsoEnergy platform. Otherwise, a new hardware interface may be required to communicate with the existing production meter.

There is also the potential to include the remotely-located weather system on the center of the school roof into the reporting system for the PV project. Currently the weather station appears to be running from a stand-alone small PV power source. A more reliable hardwire connection is recommended at least as a backup power source for the purpose of delivering project weather data. Prior to integrating the weather station with a new or existing DAS, the weather station should be tested and re-calibrated if necessary to assure accuracy.

Appendix A
Corrective Action Items

Site Visit Date: 05.10.16
 Prepared by: Evan Merkel



Argenziano Corrective Items

Item	Location
Communications cable possibly damaged	AlsoEnergy enclosure
DIN end connector not fully attached	AlsoEnergy enclosure
No expansion joint in conduit run	Run between E & W array sections
Gaskets missing on conduit bodies	(Multiple locations)
PV negatives not pulled with positives. Induced voltage risk during lightning events	Source circuit conduits
MC4 connectors made up exposed to rain. Best to keep them under the array.	(Multiple locations)
Soiling found on bottom half inch of modules	Array
Connectors of different manufacturers made up together. Recommend obtaining letter from both manufacturers for mutual compatibility.	(Multiple locations)
Wiring bending radius is very tight in source string management. Make wider bends.	(Multiple locations)
Corrosion found on hardware and pipe threadings.	(Multiple locations)
RMC not supported within 3' of pullbox	Source circuit pullbox
Tape holding BOM temp sensor is starting to fail	BOM temp sensor
Wire management slips failing in some locations	(Multiple locations)
Irradiance sensor tubing not support after conduit body	Irradiance Sensor

Site Visit Date: 05.10.16
Prepared by: Evan Merkel



Capuano Corrective Items

Item	Location
DC disconnect positive not wired through two poles as per manual	DC Disconnect
Weather station power supply not properly mounted	Weather station box
Loose wiring (not connected on either end)	Weather station box
Weather station support corroding	Weather station support
Hardware corrosion on weather station pull box	Weather station pullbox
Powerguard hardware corroding	(Multiple locations)
EGC lug corroding	Array EGC lug for Powerguard
Screw overtorqued or hardware incorrect specified. Washer is belling.	DC Disconnect
Plants growing through array	Array
Conduits not bonded in painted enclosures	(Multiple locations)
Soiling found on bottom half inch of modules	Array

Site Visit Date: 05.10.16
Prepared by: Evan Merkel



Somerville High School Corrective Items

Item	Location
Inverter OCPD tripped. Potential AC ground fault	Inverter output circuit
DC disconnect signage missing	DC Disconnect
AC disconnect signage missing	AC Disconnect
Inverter signage missing	Inverter
Conduit support corrosion	(Multiple locations)
Inverter racking corrosion	(Multiple locations)
Ballast directly laying on EPDM roof	Array SE corner
Surge protector not mounted properly	Combiner box
Hardware corrosion	Combiner box
Source circuits laying on roof (failing wire management)	(Multiple locations)
Conduits not bonded in painted enclosure	(Multiple locations)
Soiling found on bottom half inch of modules	Array
Source circuit conduits not listed for use	Source circuit conduits
Interconnection panel signage missing	Panel A21

Appendix B-1
Provided Drawings for Argenziano



- GENERAL NOTES:
- ALL DESIGNS ARE SUBJECT TO FINAL STRUCTURAL ANALYSIS AND CONSTRUCTION LAYOUT
 - ALL MOUNTINGS, INVERTERS AND RACKING SYSTEMS ARE SUBJECT TO CHANGE TO AN "OR EQUAL" MANUFACTURER IN ORDER TO ACCOMMODATE THE SUGGESTED CONSTRUCTION SCHEDULE

- 216° FROM NORTH
- 90 CANADIAN SOLAR CS6X 290 PANELS
 - 10° PITCH ON REDUCED SPACE
 - PANEL CLAW MOUNT
 - 26,100 WATTS
 - 90 CANADIAN SOLAR CS6X 295 PANELS
 - 10° PITCH ON REDUCED SPACE
 - PANEL CLAW MOUNT
 - 26,550 WATTS

COORDINATES: 42°22'43.83"N, 71° 5'57.67"W

INVERTERS AND REVENUE GRADE SOLAR PRODUCTION METER LOCATED IN 3RD FLOOR MECHANICAL ROOM.

ELECTRIC RM.

UTILITY METER

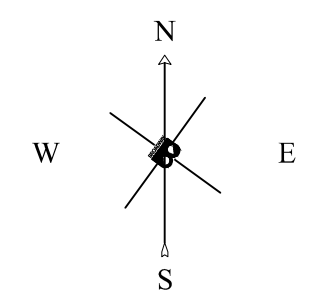
SOLAR SYSTEM EXTERIOR AC UTILITY DISCONNECT SWITCH

PADMOUNT UTILITY TRANSFORMER

AS-BUILTS

2-4-13

REVISIONS:



BROADWAY
 BROADWAY ELECTRICAL CO. INC.
 295 FREEPORT STREET
 BOSTON, MA 02122
 617-288-7900 FAX: 617-288-4169
 email: bwy@broadelec.com

OWNER:
BROADWAY RENEWABLE STRATEGIES, LLC

PROJECT:
DR. ALBERT F. ARGENZIANO SCHOOL SOLAR ARRAY

DRAWING TITLE:
PV SOLAR LAYOUT

JOB NO:	DRAWING NUMBER:
DATE: 08-17-12	PV-1
DRAWN BY: MJD	
CHECK BY: LAF	
SCALE: 1 : 20	



GENERAL NOTES:

- ALL DESIGNS ARE SUBJECT TO FINAL STRUCTURAL ANALYSIS AND CONSTRUCTION LAYOUT
- ALL MOUNTINGS, INVERTERS AND RACKING SYSTEMS ARE SUBJECT TO CHANGE TO AN "OR EQUAL" MANUFACTURER IN ORDER TO ACCOMMODATE THE SUGGESTED CONSTRUCTION SCHEDULE

216° FROM NORTH

- 90 CANADIAN SOLAR CS6X 290 PANELS
- 10° PITCH ON REDUCED SPACE
- PANEL CLAW MOUNT
- 26,100 WATTS

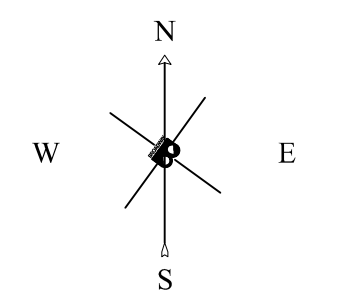
- 90 CANADIAN SOLAR CS6X 295 PANELS
- 10° PITCH ON REDUCED SPACE
- PANEL CLAW MOUNT
- 26,550 WATTS

COORDINATES: 42°22'43.83"N, 71° 5'57.67"W

AS-BUILTS

2-4-13

REVISIONS:



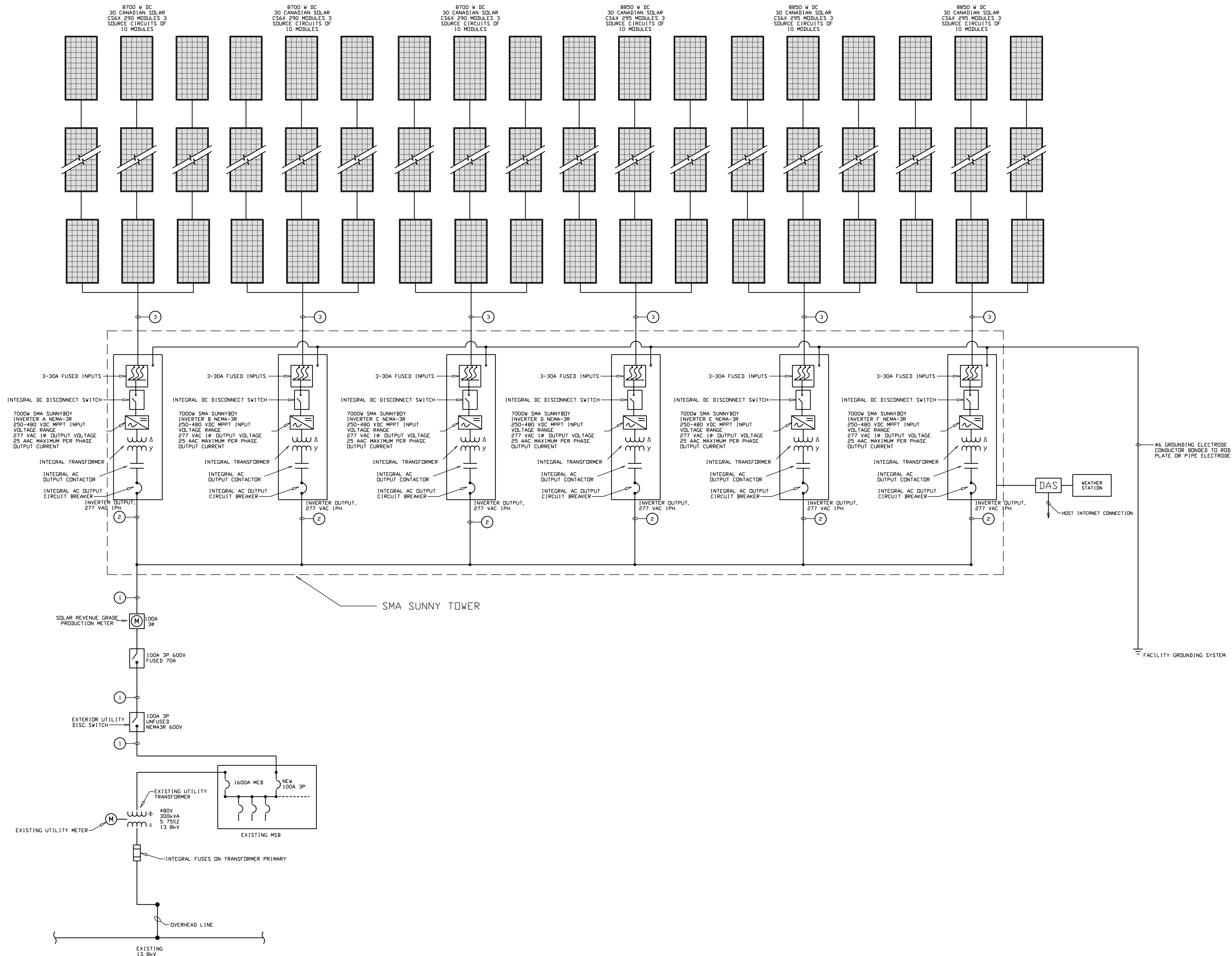
BROADWAY ELECTRICAL CO. INC.
 295 FREEPORT STREET
 BOSTON, MA 02122
 617-288-7900 FAX: 617-288-4169
 email: bwy@broadelec.com

OWNER:
BROADWAY RENEWABLE STRATEGIES, LLC

PROJECT:
DR. ALBERT F. ARGENZIANO SCHOOL SOLAR ARRAY

DRAWING TITLE:
PV SOLAR LAYOUT

JOB NO:	DRAWING NUMBER:
DATE: 08-17-12	PV-1a
DRAWN BY: MJD	
CHECK BY: LAF	
SCALE: 1 : 20	



SITE CONDITIONS
 MAX AVG. TEMP: 39.4 C
 MIN RECORD TEMP: -27.8 C

PV ARRAY CONFIGURATION
 MODULE MFR AND MODEL: CANADIAN SOLAR CS6X 290
 MODULE QTY: 90
 MODULES PER SOURCE CIRCUIT: 10
 TOTAL SOURCE CIRCUITS: 9

PV MODULE OUTPUT*
 Voc: 44.7 Vdc
 Isc: 8.51 Adc
 Vmp: 36.3 Vdc
 Imp: 8.0 A

PV SOURCE CIRCUIT OUTPUT
 Voc: 447 Vdc
 Isc: 8.51 Adc
 Vmp: 363 Vdc
 Imp: 8.0 A

PV ARRAY CONFIGURATION
 MODULE MFR AND MODEL: CANADIAN SOLAR CS6X 295
 MODULE QTY: 90
 MODULES PER SOURCE CIRCUIT: 10
 TOTAL SOURCE CIRCUITS: 9

PV MODULE OUTPUT*
 Voc: 44.9 Vdc
 Isc: 8.63 Adc
 Vmp: 36.4 Vdc
 Imp: 8.11 A

PV SOURCE CIRCUIT OUTPUT
 Voc: 449 Vdc
 Isc: 8.63 Adc
 Vmp: 364 Vdc
 Imp: 8.11 A

*BASED ON MODULE PERFORMANCE AT STANDARD TEST CONDITIONS (STC)

TABLE 1: PHOTOVOLTAIC SYSTEM EQUIPMENT LIST

ID	DESCRIPTION
1	4 #3 & 1#8 GRD, 1#8 INVERTER GND - 2-1/2" C
2	2#8 & 1#10 GRD, 1#10 INVERTER GND - 1" C
3	2#10 - TYPICAL - SEE NOTE #1
ADJUST FINAL DESIGN TO MAINTAIN 1% VOLTAGE DROP	

- NOTES:**
- (1) ALL HOMERUN WIRES TO DC COMBINER BOXES ARE #10 AWG USE-2/RHW-2 DUAL RATED WIRES. RATED AS REQUIRED ON BACK SIDE OF MODULES AND RACKING SYSTEM
 - (2) ALL CONDUCTORS ARE COPPER 90°-RATED
 - (3) ALL EQUIPMENT TO BE LABELED PER NEC REQUIREMENTS
 - (4) SEPARATE REVENUE GRADE METERS MONITOR INDIVIDUAL OUTPUTS. kWh METER DATA IS CONNECTED TO DATA ACQUISITION SYSTEM THROUGH CAT-5 ETHERNET CONNECTION (NOT SHOWN)

GENERAL NOTES:

- ALL DESIGNS ARE SUBJECT TO FINAL STRUCTURAL ANALYSIS AND CONSTRUCTION LAYOUT
- ALL MOUNTINGS, INVERTERS AND RACKING SYSTEMS ARE SUBJECT TO CHANGE TO AN "OR EQUAL" MANUFACTURER IN ORDER TO ACCOMMODATE THE SUGGESTED CONSTRUCTION SCHEDULE

1 GENERAL REVISION 11-19-12

AS-BUILTS
2-4-13

BROADWAY BROADWAY ELECTRICAL CO. INC.
 295 FREEPORT STREET
 BOSTON, MA 02122
 617-288-7900 FAX: 617-288-4169
 email: bwy@broadelec.com

OWNER:
BROADWAY RENEWABLE STRATEGIES, LLC

PROJECT:
DR. ALBERT F. ARGENZIANO SCHOOL SOLAR ARRAY

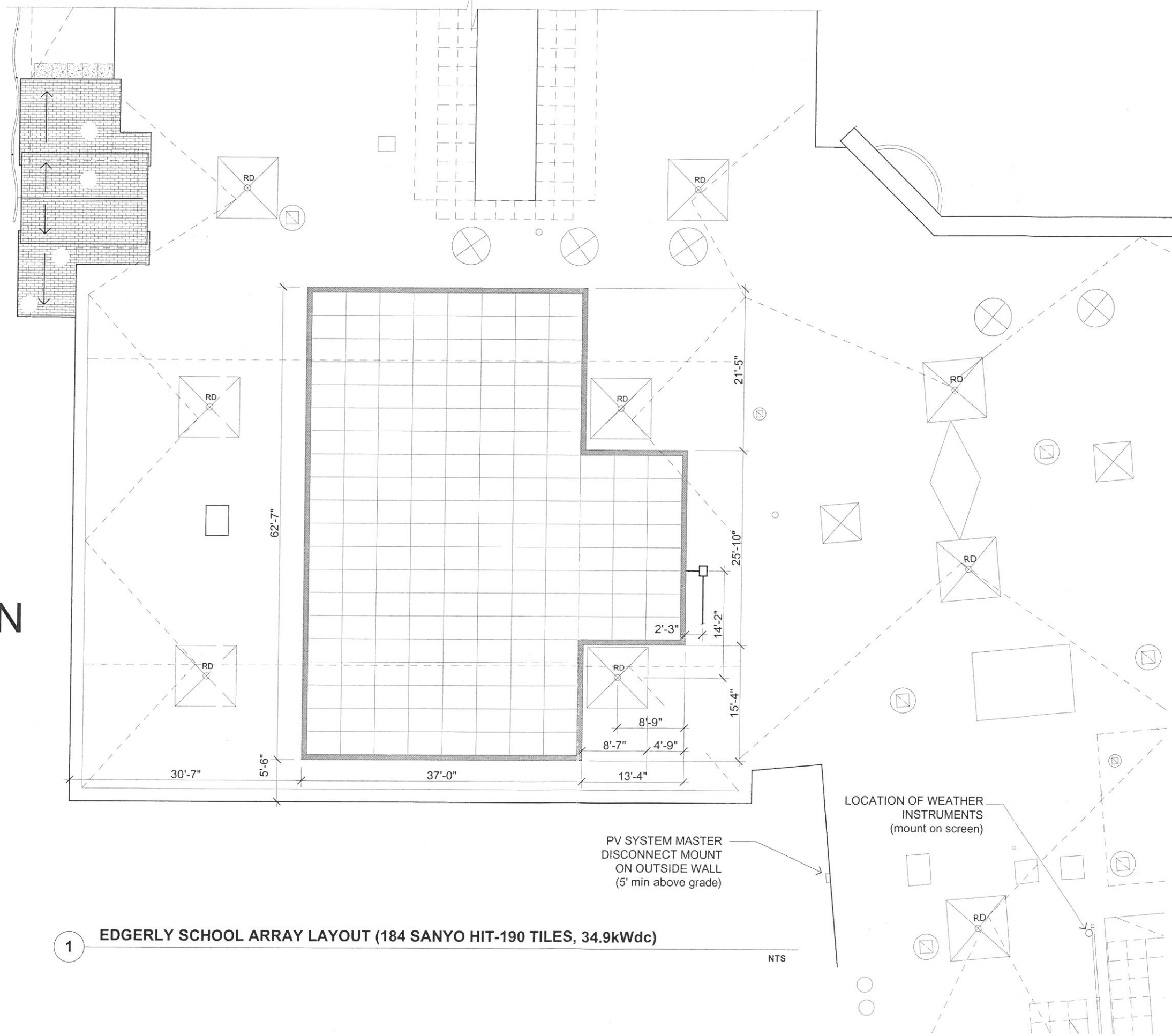
DRAWING TITLE:
ONE-LINE DIAGRAM

JOB NO:
DATE: 08-17-12
DRAWN BY: MJD
CHECK BY: LAF
SCALE: NO SCALE

DRAWING NUMBER:
PV-2

**52,650 WDC
42KWAC
SOLAR ARRAY**

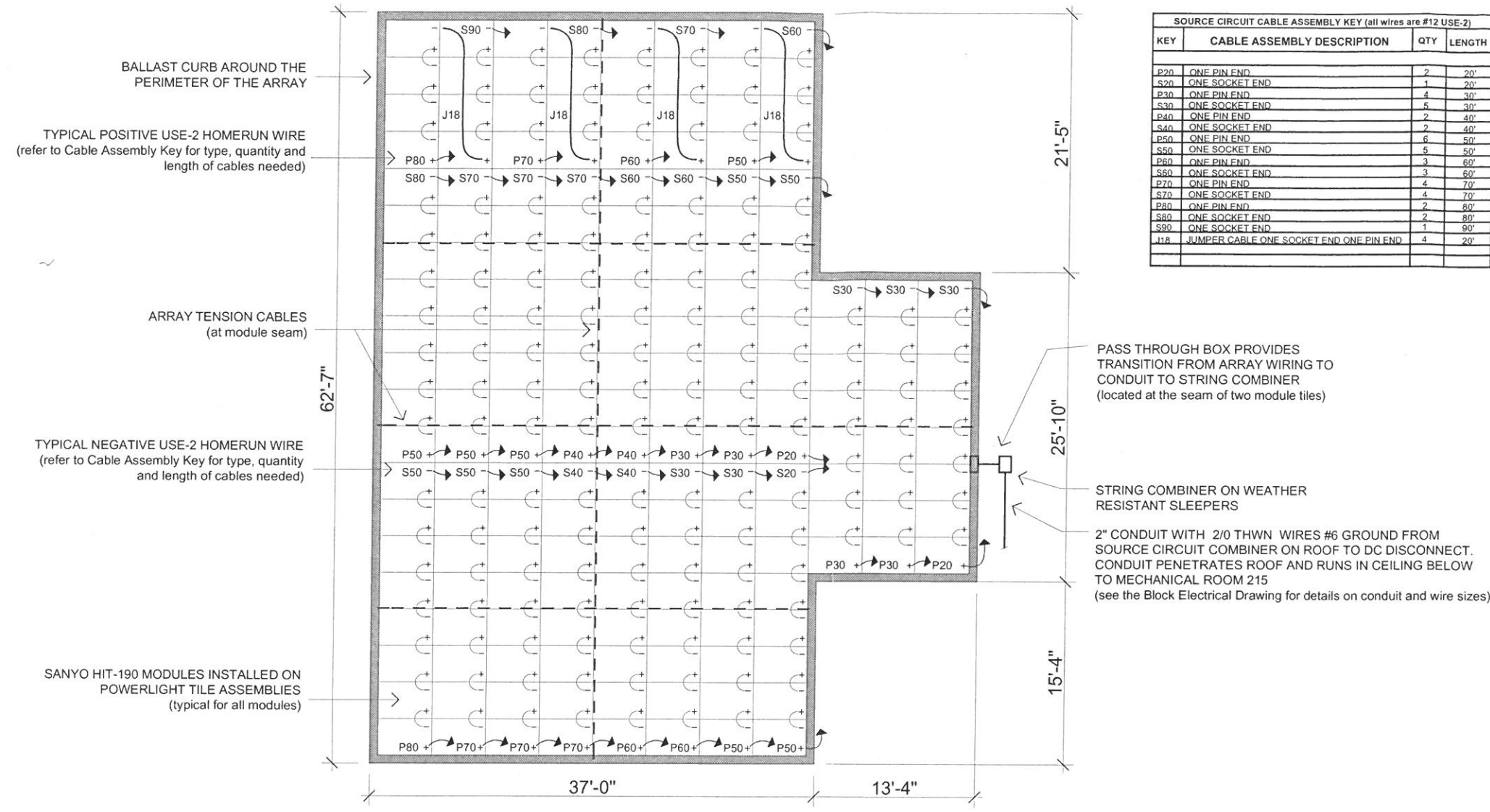
Appendix B-2
Provided Drawings for Capuano



1 EDGERLY SCHOOL ARRAY LAYOUT (184 SANYO HIT-190 TILES, 34.9kWdc)

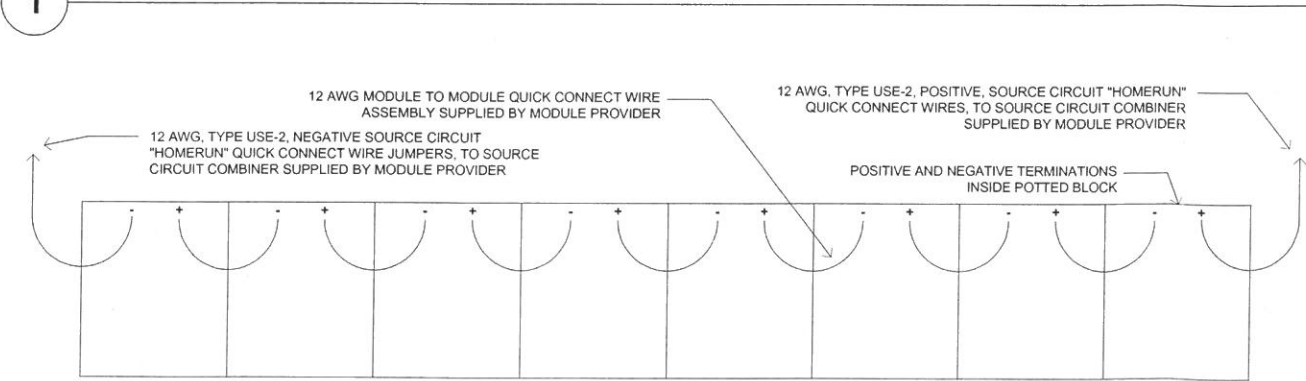
NTS

HMFH Architects Architects		
HMFH Architects, Inc. Architecture & Planning 170 Bishop Allen Drive Cambridge, Massachusetts 02139 Telephone: (617) 452-2200 / Fax: (617) 476-3773		
solar design associates solar design associates, Inc. 01917-0102 978-456-8855 fax 978-772-9715		
THIS DRAWING IS FOR INFORMATION PURPOSES ONLY. CERTIFICATION OR VALIDATION IS TO BE DONE BY A PROFESSIONAL ENGINEER OR ARCHITECT. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS REGULATIONS AND SHALL BE INCLUDED AS PART OF THE SUBMITTALS FOR PERMITTING OF THE OVERALL PROJECT.		
Revision No	DATE	REMARKS
AS-BUILT	10-08-03	
BID SET	1-06-02	CLM
EDGERLY EARLY CHILDHOOD DEVELOPMENT CENTER LAYOUT PLAN		
PV-01		

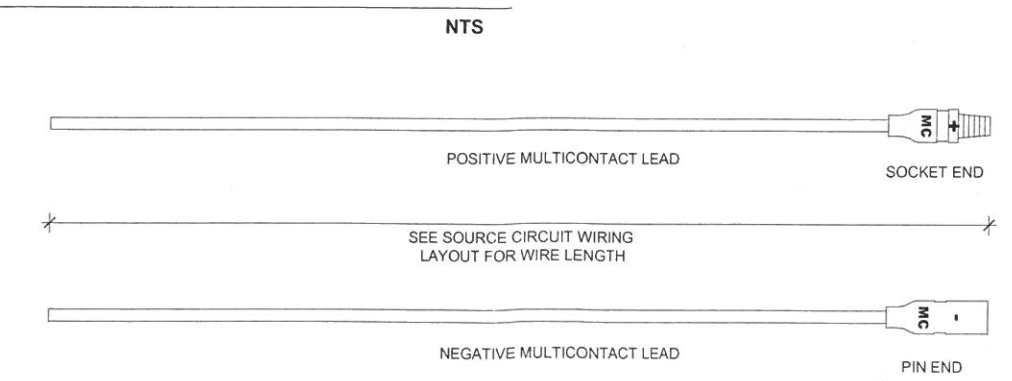


SOURCE CIRCUIT CABLE ASSEMBLY KEY (all wires are #12 USE-2)			
KEY	CABLE ASSEMBLY DESCRIPTION	QTY	LENGTH
P20	ONE PIN END	2	20'
S20	ONE SOCKET END	1	20'
P30	ONE PIN END	4	30'
S30	ONE SOCKET END	5	30'
P40	ONE PIN END	2	40'
S40	ONE SOCKET END	2	40'
P50	ONE PIN END	6	50'
S50	ONE SOCKET END	5	50'
P60	ONE PIN END	3	60'
S60	ONE SOCKET END	3	60'
P70	ONE PIN END	4	70'
S70	ONE SOCKET END	4	70'
P80	ONE PIN END	2	80'
S80	ONE SOCKET END	2	80'
S90	ONE SOCKET END	1	90'
J18	JUMPER CABLE ONE SOCKET END ONE PIN END	4	20'

1 EDGERLY SCHOOL ARRAY LAYOUT (184 SANYO HIT-190 TILES, 34.9kWdc)

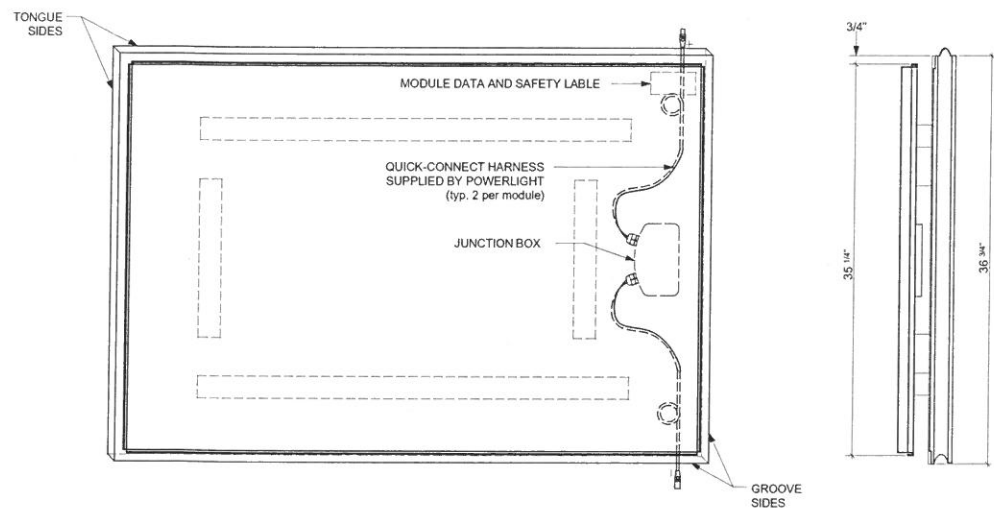


3 TYPICAL ARRAY STRING 8 HIT-190 MODULES IN SERIES 1.52kWdc (as viewed from above)

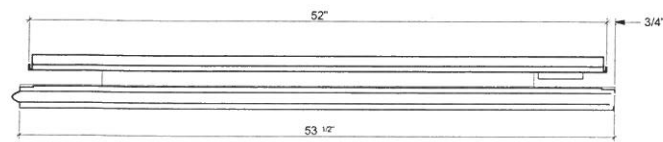


2 CABLE ASSEMBLY DETAIL FOR MODULE TO SOURCE CIRCUIT COMBINER

Revision No.	DATE	REMARKS
AS-BUILT	10-08-03	
BID SET	1-09-02	CLM

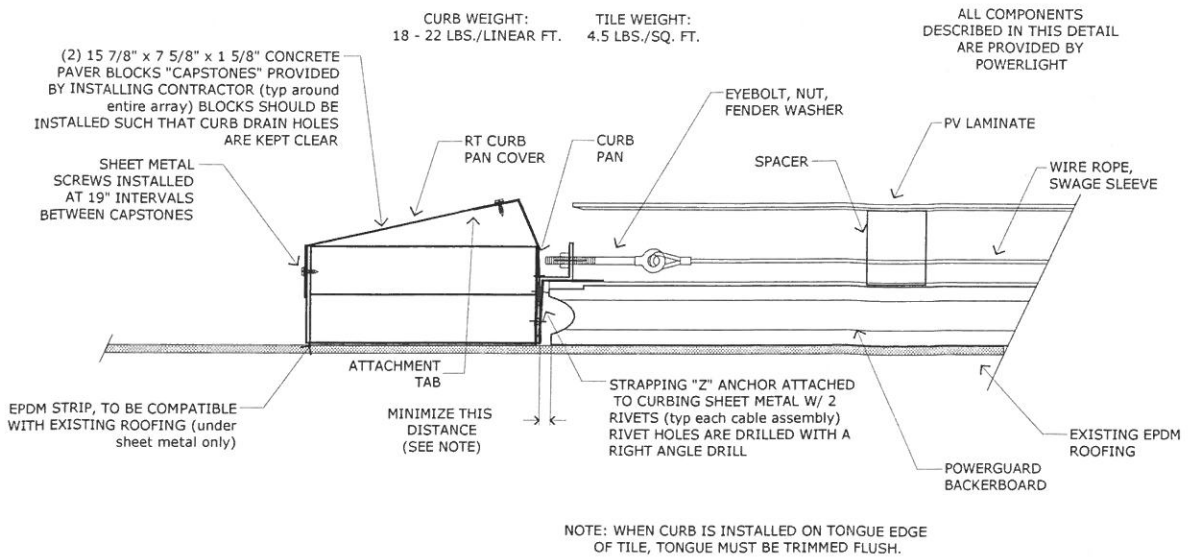


NOTE:
POWERLIGHT SYSTEM TO BE INSTALLED BY
POWERLIGHT AUTHORIZED SYSTEM INSTALLER



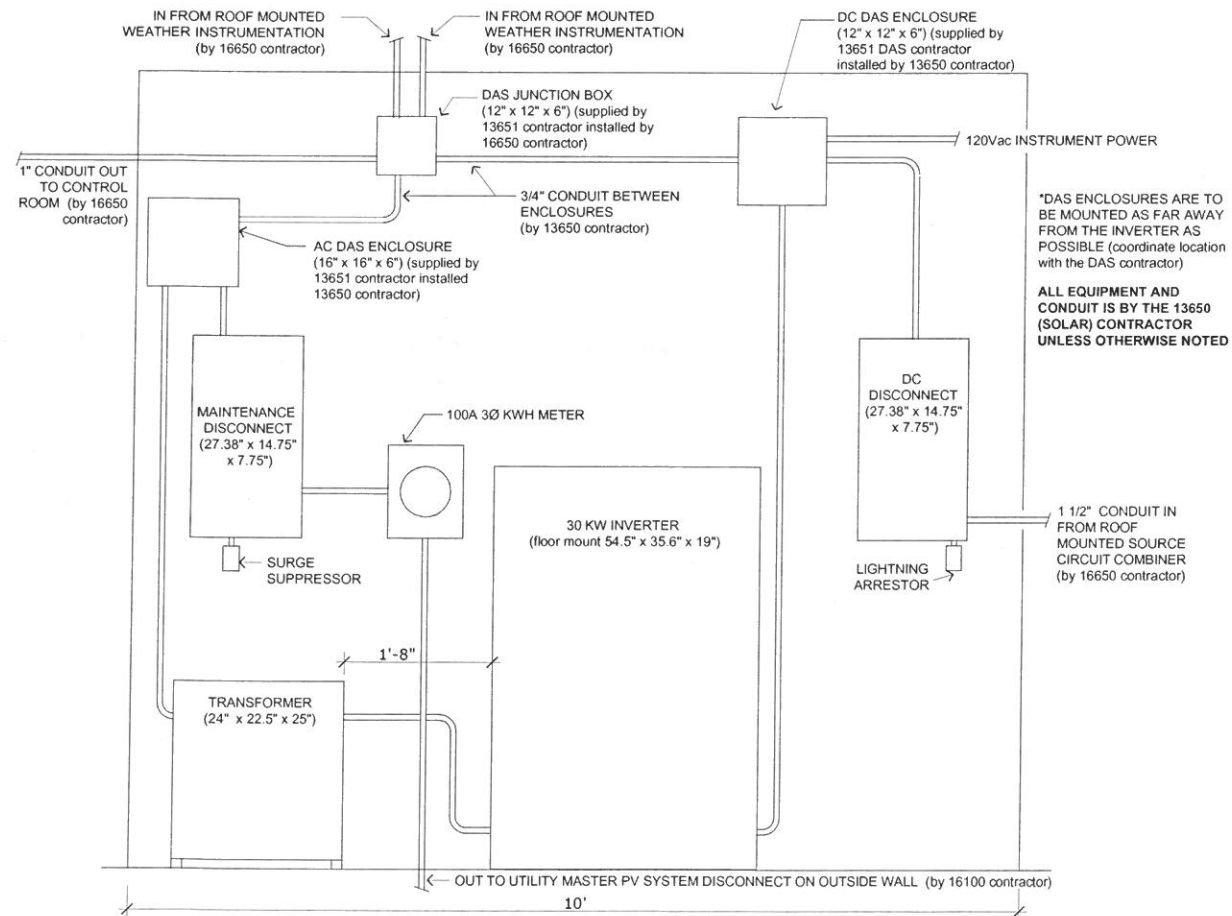
RATED ELECTRICAL CHARACTERISTICS

MAXIMUM POWER (Pmax)	190W
VOLTAGE AT Pmax	33V
CURRENT AT Pmax	4.25A
OPEN-CIRCUIT VOLTAGE (Voc)	42.8V
SHORT-CIRCUIT CURRENT (Isc)	4.7A
MAXIMUM SYSTEM VOLTAGE	600V

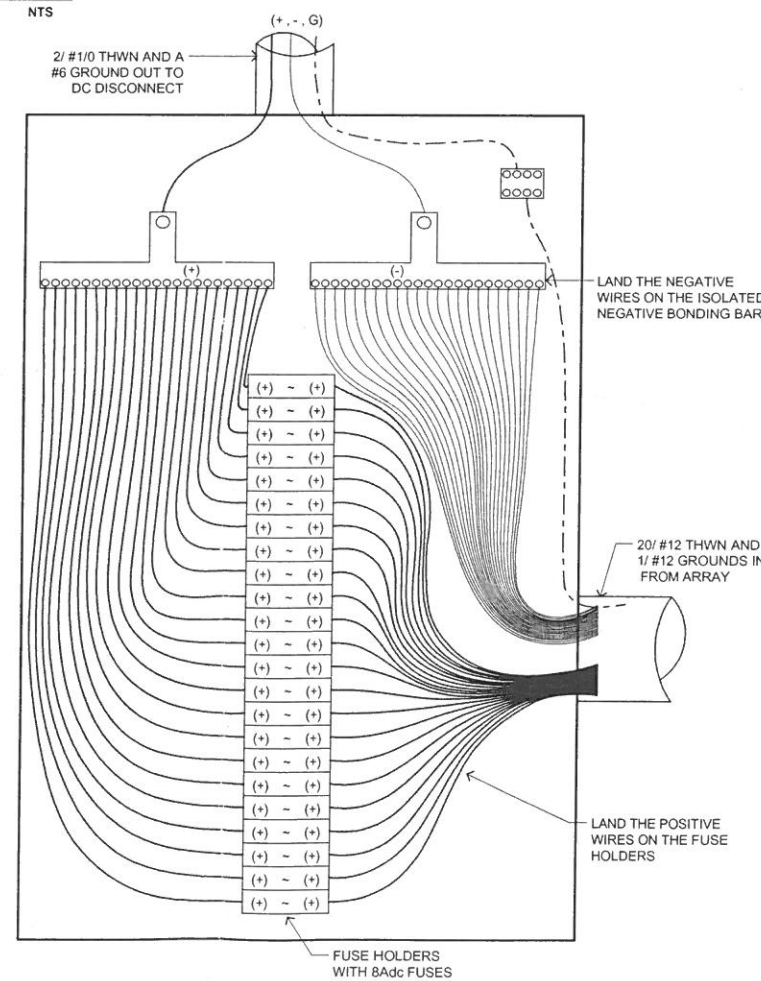


2 TYPICAL POWERLIGHT CURB ASSEMBLY

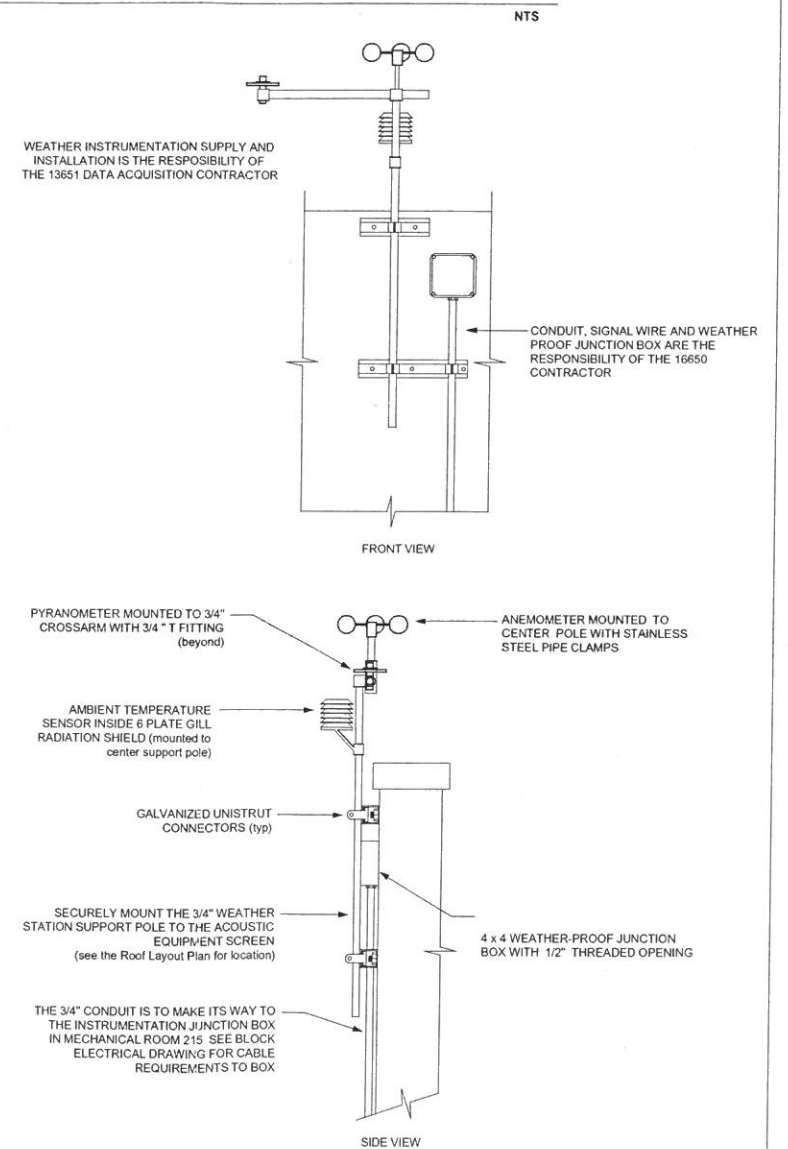
1 TYPICAL SANYO HIT 190 MODULE AND POWERLIGHT TILE ASSEMBLY



3 30kWac PV BOS EQUIPMENT WALL LAYOUT, ROOFTOP MECHANICAL ROOM, SOUTH WING

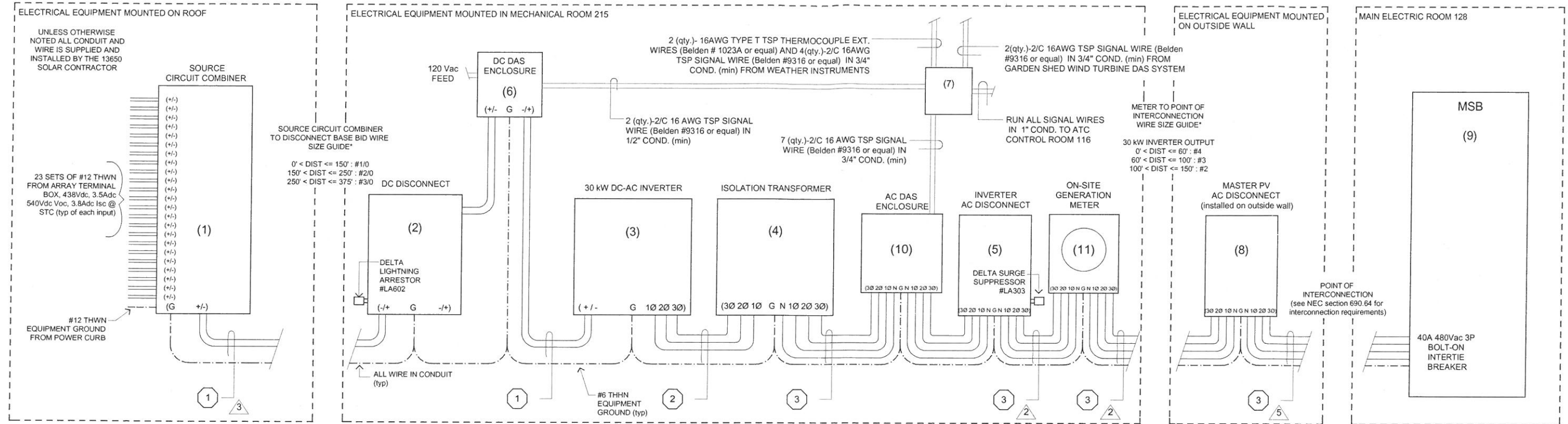


4 SOURCE CIRCUIT COMBINER WIRING DETAIL



5 WEATHER INSTRUMENT DETAIL

REVISIONS	DATE	BY	CLM
AS-BUILT	10-09-03		
BID SET	1-06-02		



*EQUIPMENT KEY (unless otherwise noted equipment is supplied and installed by the Section 13650 (Solar) Contractor)

- (1) SOURCE CIRCUIT COMBINER BOX, 600Vdc, NEMA 3R, 8Adc FUSES
- (2) 3 WIRE, 200Adc, 600 Vdc, NEMA 1, HEAVY DUTY, VISIBLE BLADE SAFETY SWITCH / DC DISCONNECT (Square D # HU364N or equal) (H 27.38" x W 14.7" x D 7.75")
- (3) XANTREX TECHNOLOGIES PV-30208 DC TO AC INVERTER (H 54.5" x W 35.6" x D 19", 260 lbs)
- (4) 208 / 480Vac 30kVA, ISOLATION TRANSFORMER (80 deg C rise 98% efficient) (H 30" x W 20" x D 20", 390lbs)
- (5) 3 WIRE, 60Aac, 600Vac, NEMA 1, HEAVY DUTY, VISIBLE BLADE FUSED AC DISCONNECT WITH 40Aac FUSES (Square D # H362N or equal) (H 17.50" x W 10.50" x D 6.38") (by 16650 Contractor)
- (6) DC CURRENT AND VOLTAGE TRANSDUCER, ENCLOSURE NEMA 1 WITH REMOVABLE INNER PANEL (H 12" x W 12" x D 6") (HOFFMAN # A-12R126HCR) (supplied by Section 13651 (DAS) Contractor installed by Section 13650 (Solar) Contractor)
- (7) JUNCTION BOX FOR INSTRUMENTATION SIGNAL WIRES NEMA 1 (H 12" x W 12" x D 6") (supplied by Section 13651 (DAS) Contractor installed by 16650 Contractor)
- (8) 3 WIRE, 60Aac, 600Vac, NEMA 3R, HEAVY DUTY, VISIBLE BLADE AC DISCONNECT WITH LOCK ON AND OFF CAPABILITY (Square D # HU362NR or equal) (H 17.50" x W 10.50" x D 6.38") (by 16100 Contractor)
- (9) EXISTING MSB; INSTALL 40A, 480Vac, 3 PHASE, BOLT-ON BREAKER (by 16100 Contractor)
- (10) POWER TRANSDUCER, ENCLOSURE NEMA 1 WITH REMOVABLE INNER PANEL (H 16" x W 16" x D 6") (HOFFMAN # A-16R166HCR) (supplied by Section 13651 (DAS) Contractor installed by Section 13650 (Solar) Contractor)
- (11) 4 WIRE 100A 480Vac kWh METER WITH PULSE OUTPUT

CONDUIT AND WIRE KEY

KEY #	CONDUCTOR SIZE	RACEWAY SIZE	V	I	Voc	Isc
1	2 #2/0 THHN + #6 GND	2"	438Vdc	79.8Adc	540Vdc	86.3Adc
2	3 #1 THHN + #6 GND	1 1/2"	208Vac	92.4Aac	-	-
3	4 #6 THHN + #10 GND	1"	480Vac	40.0Aac	-	-

GENERAL NOTES: (BASE BID: 20kW INVERTER SYSTEM)

THIS SOLAR PHOTOVOLTAIC SYSTEM IS TO BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL ELECTRIC CODE. ANY LOCAL CODE, WHICH MAY SUPERSEDE THE NEC, SHALL GOVERN. IN ADDITION, ALL COMPONENTS TO BE INSTALLED IN THIS SYSTEM ARE TO BE "UL" LISTED.

THE DC-AC INVERTER (3) SHALL MEET THE PROVISIONS OF IEEE-929 AND BE LISTED TO UNDERWRITERS LABORATORIES STANDARD UL-1741. IT WILL TURN OFF THE UTILITY CONNECTION AUTOMATICALLY WITHIN ONE SECOND WHEN THE UTILITY GOES DOWN AND WILL REMAIN OFF UNTIL A STABLE SINE WAVE GENERATED BY THE UTILITY IS RESTORED.

DC VOLTAGE FROM THE ARRAY IS ALWAYS PRESENT AT THE DISCONNECT AND DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS.

ALL PERSONS WORKING ON OR INVOLVED WITH THIS PHOTOVOLTAIC SYSTEM ARE WARNED THAT THE SOLAR MODULES ARE ENERGIZED WHENEVER THEY ARE EXPOSED TO SUNLIGHT; LIVE WIRING SAFETY AND CAUTIONARY PRACTICES SHOULD BE EMPLOYED DURING INSTALLATION AND MAINTENANCE OPERATIONS.

LABELING LABELING SHALL BE APPLIED ACCORDING TO THE NEC AND SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING LABELS SHOWN:

A PERMANENT GRAPHICAL DIRECTORY OF THE LOCATION OF THE PHOTOVOLTAIC SYSTEM DISCONNECTS SHALL BE PROVIDED IN ACCORDANCE TO SECTION 690.56.

* WIRE SIZES SHOWN ARE PRELIMINARY AND ARE DESIGNED TO MAINTAIN AN OVERALL VOLTAGE DROP OF LESS THAN 3%. THE CONTRACTOR IS TO TO VERIFY THE ACTUAL WIRE DISTANCES IN THE FIELD AND CONFIRM THE INSTALLED SYSTEM IS IN ACCORDANCE WITH THE NEC

KEY NOTES:

- 1 CONDUIT AND WIRE IS SUPPLIED AND INSTALLED BY THE 16650 CONTRACTOR. INSTRUMENT TERMINATIONS ARE BY THE 13651, CONTRACTOR
- 2 CONDUIT AND WIRE IS SUPPLIED, INSTALLED AND TERMINATED BY THE 16650, CONTRACTOR
- 3 CONDUIT IS SUPPLIED, INSTALLED BY THE 16650, CONTRACTOR
- 4 CONDUIT AND WIRE IS SUPPLIED AND INSTALLED BY THE 13650, CONTRACTOR.
- 5 CONDUIT IS SUPPLIED, INSTALLED BY THE 16100, ELECTRICAL CONTRACTOR

THE DC DISCONNECT ENCLOSURE (2) WILL RECEIVE THE FOLLOWING LABELING

WARNING! DC VOLTAGE IS ALWAYS PRESENT FROM THE SOLAR ARRAY DURING DAYLIGHT HOURS

NOMINAL DC RATING: 25.2kWdc

SOLAR SYSTEM SPECIFICATIONS:

SYSTEM OPERATING DC CURRENT (Imax):	79.8Adc	@ 0°C CELL TEMPERATURE
SYSTEM OPERATING DC VOLTAGE (Vmax):	438Vdc	460Vdc
MAXIMUM SYSTEM DC VOLTAGE (Voc):	540Vdc	567Vdc
MAXIMUM SYSTEM DC CURRENT (Isc):	86.3Adc	86.3Adc

THE SAFETY SWITCH (5), ACTING AS A PHOTOVOLTAIC SYSTEM MAINTENANCE DISCONNECT, IS TO RECEIVE THE FOLLOWING LABELING:

INVERTER AC DISCONNECT
480 Vac THREE PHASE

THE SAFETY SWITCH (8), ACTING AS THE MASTER PHOTOVOLTAIC DISCONNECT, IS TO RECEIVE THE FOLLOWING LABELING:

PHOTOVOLTAIC SYSTEM MASTER DISCONNECT

WARNING! SWITCH IS ENERGIZED FROM TWO SOURCES - UTILITY POWER AND THE PHOTOVOLTAIC SYSTEM

SOLAR SYSTEM AC SPECIFICATIONS:

MAXIMUM AC OPERATING CURRENT:	40Aac
NOMINAL AC OPERATING VOLTAGE:	480Vac 3 PHASE

THE BREAKER IN THE MAIN SWITCH BOARD, ACTING AS THE PHOTOVOLTAIC INTERTIE BREAKER, IS TO RECEIVE THE FOLLOWING LABELING:

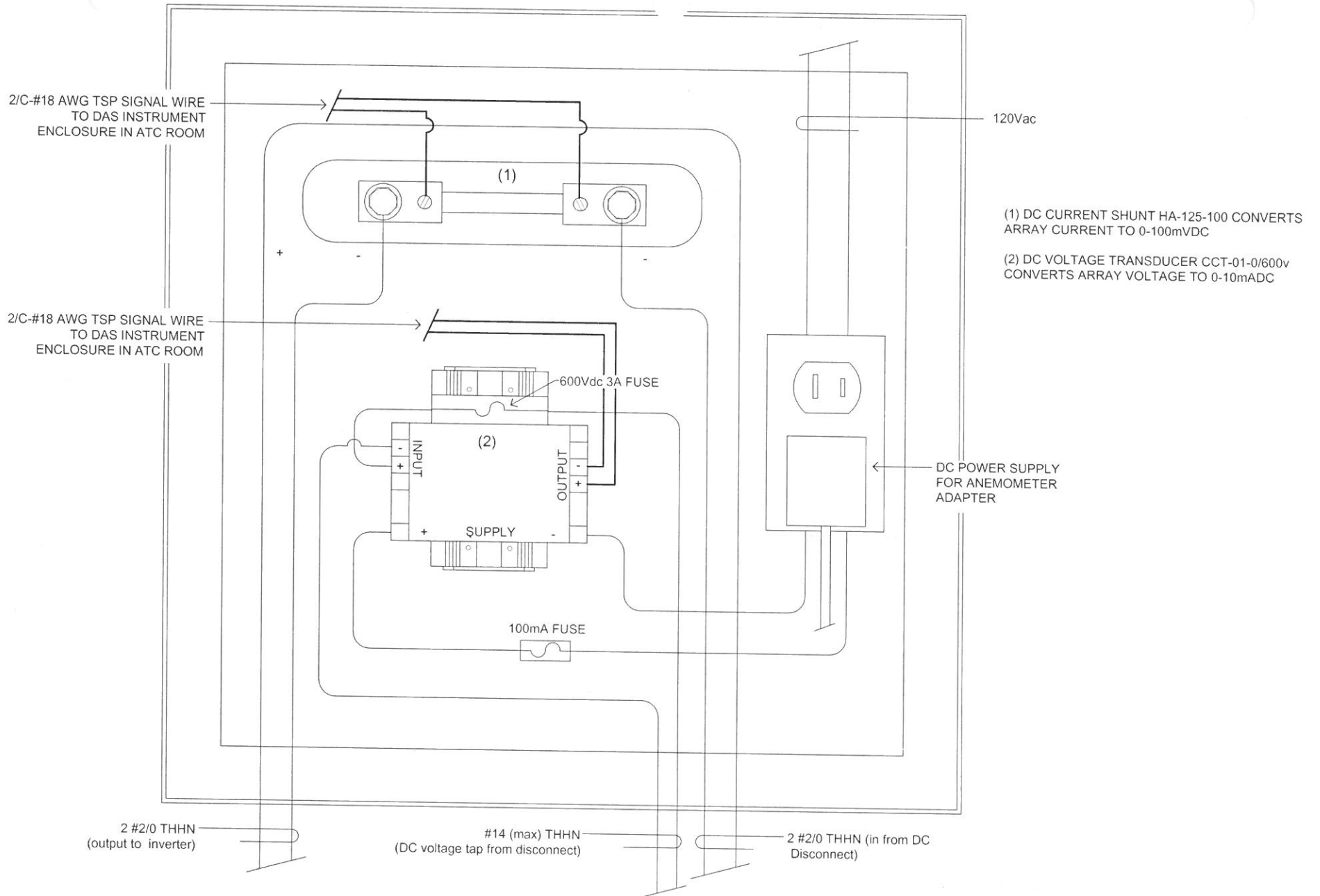
PHOTOVOLTAIC SYSTEM
BACKFED CIRCUIT BREAKER
480 Vac THREE PHASE

1 BLOCK ELECTRICAL DRAWING FOR THE ROOFTOP PHOTOVOLTAIC SYSTEM

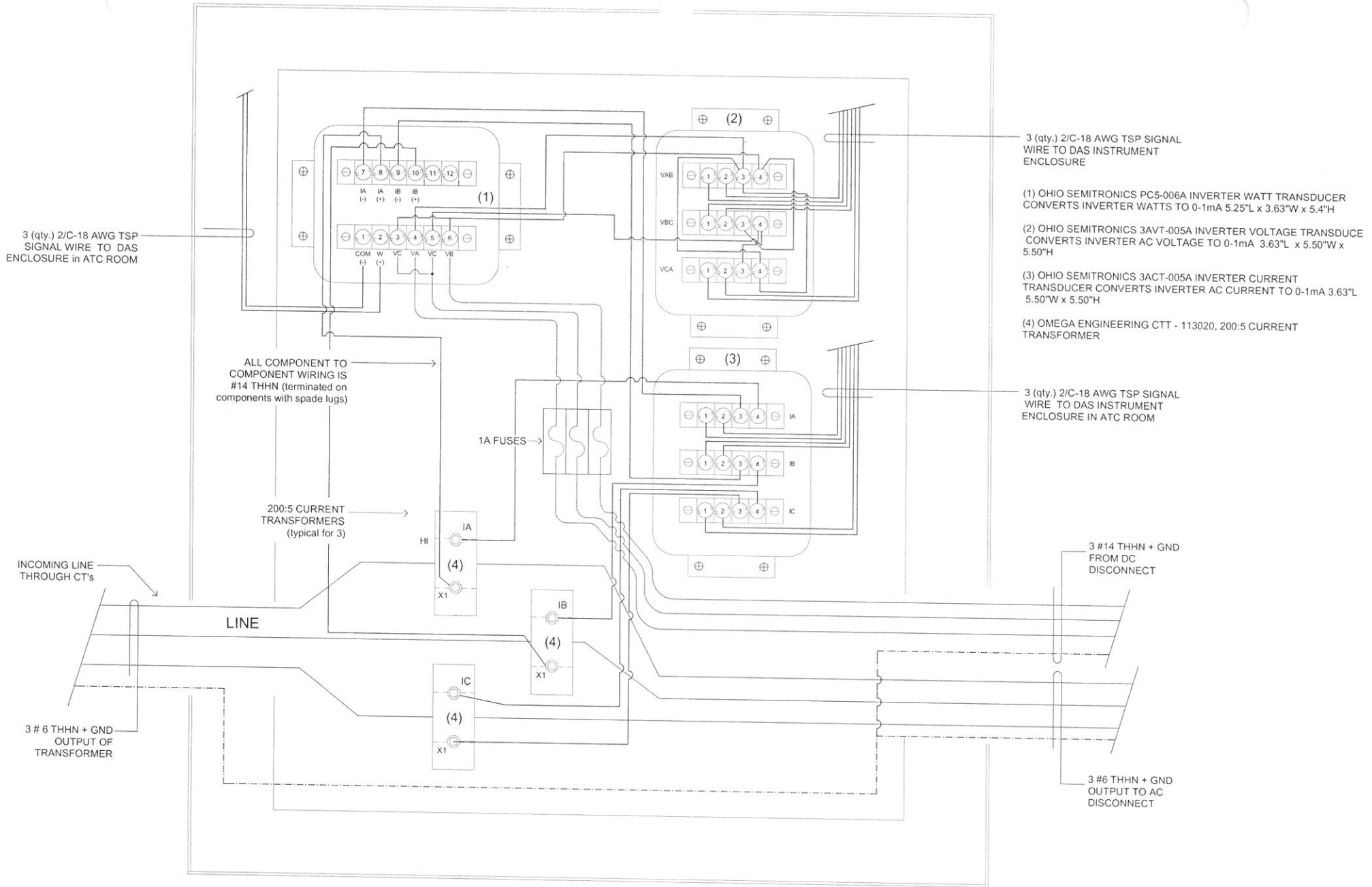
NTS

REVISIONS	DATE	BY	CLM
AS-BUILT	10-06-03		
BID SET	1-06-02		

12" X 12" NEMA 1 ENCLOSURE

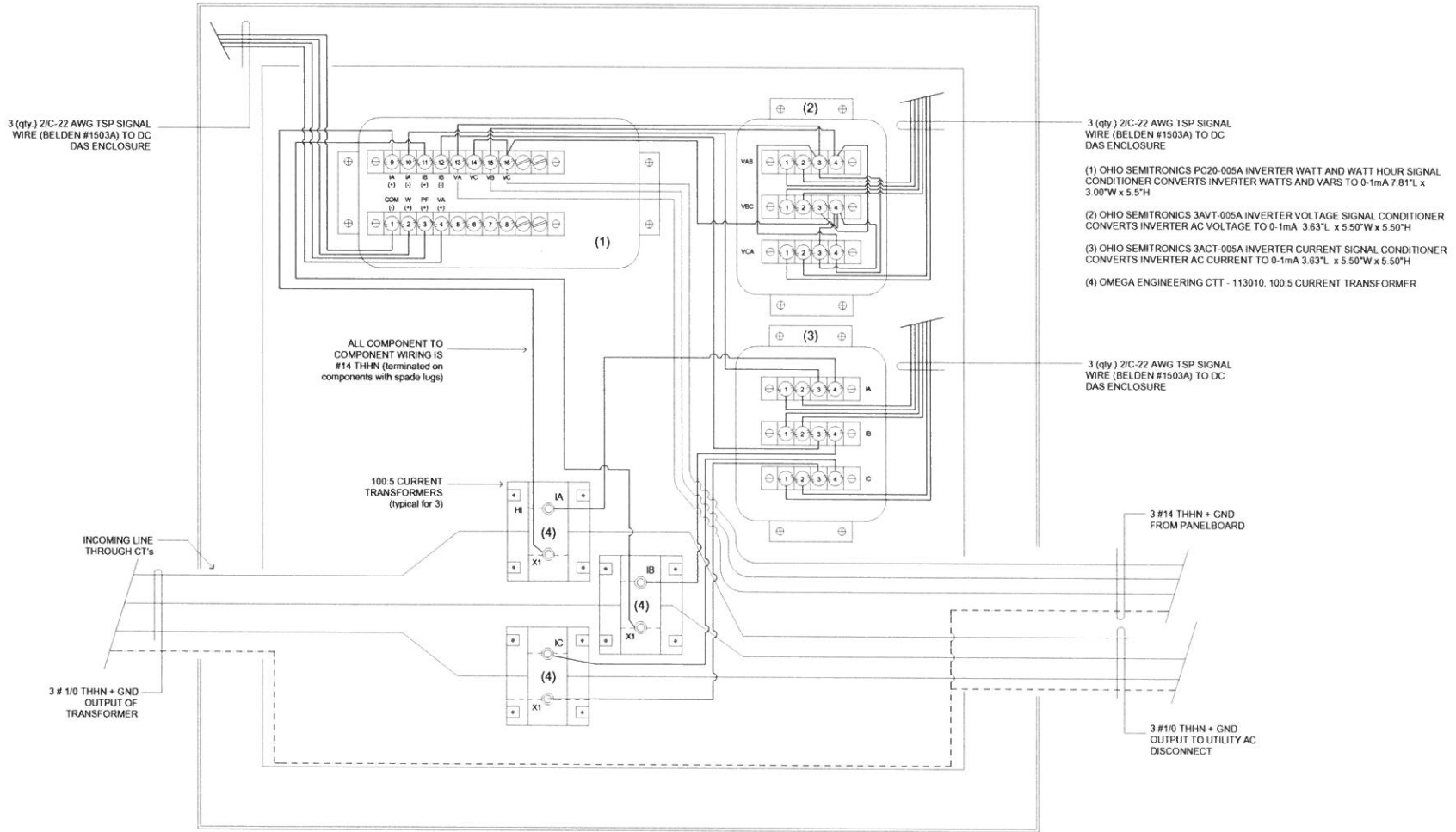


1 DC DATA ACQUISITION INSTRUMENT SCHEMATIC WIRING

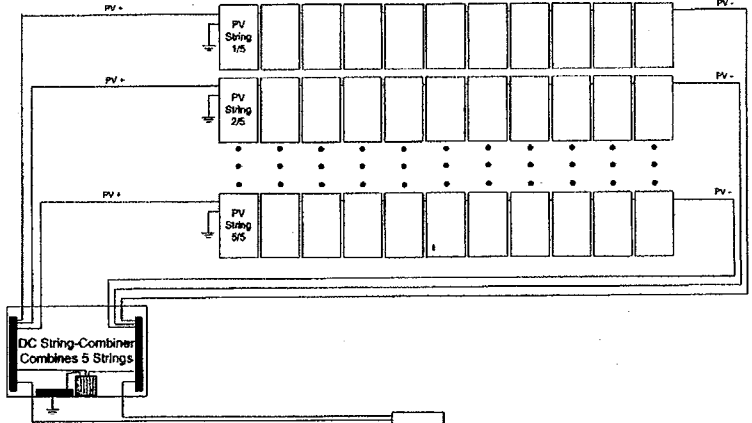


2 AC DATA ACQUISITION INSTRUMENT SCHEMATIC WIRING

20" X 20" NEMA 3R ENCLOSURE

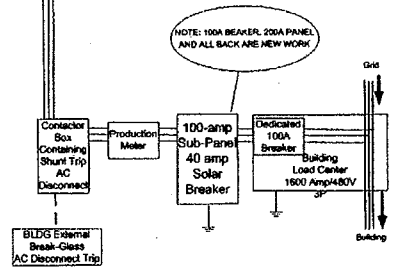
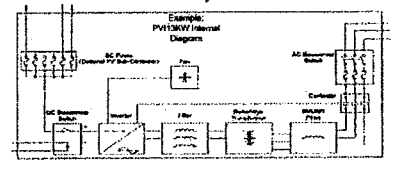


Appendix B-3
Provided Drawings for Somerville High School



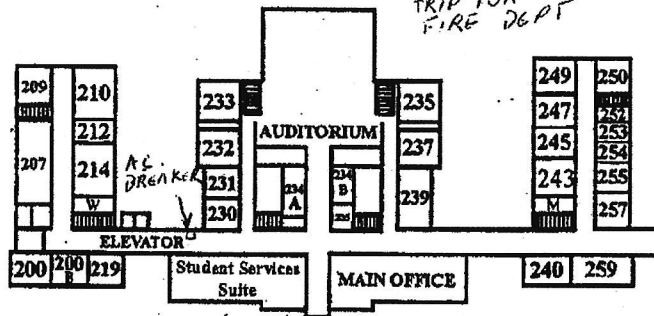
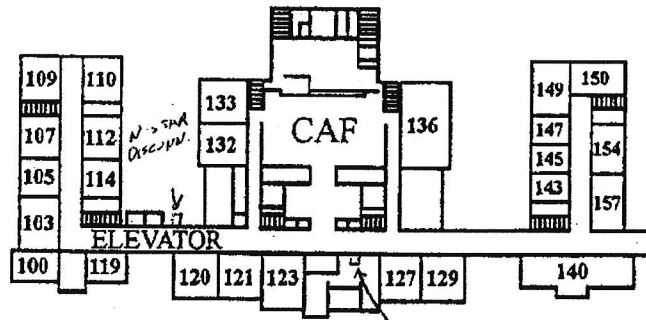
Module Data:	
ES-190-SL (180WDC):	55 Modules
Vp:	26.7 VDC
Is:	7.12 ADC
Is:	6.05 ADC
180 Cells/Module	
15A Series Fuse	
UL Rated System Voltage: 600 V	
String Data:	
11 Modules per String	
Voltage@MPPT: 293.7	
OCV: 418.2 VDC @ -4%	
Vimp: 237.5 VDC @ 104%	
Array Data:	
Power @ MPPT: 10,450 WDC (STC)	
PTC AC System: 8773 WAC	
5 Strings	

Wire Sizing:	
String to Subcombiner:	
Pos/Neg: #10 AWG USE-2 with Multi-Contact Connectors	
ex: 8.05A x 1.25 x 1.25=12.58A (NEC 890.8(B)1)	
Equipment Ground: #8 AWG (NEC 890.41)	
String-combiner to Inverter Subcombiner:	
Pos/Neg: #2 AWG THWN-2	
ex: 12.58A x 5=62.9A ~ (NEC 310.16)	
Equipment Ground: #6 AWG THWN-2	
Inverter to AC Ext. Bldg. Disconnect to Dedicated Breaker:	
LTL: 2L: 3 #1 AWG THHN-2 Min.	
Equipment Ground: #1A	

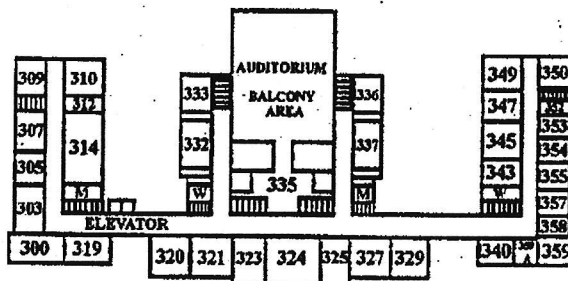


		PV One-Line Wiring Diagram			
		Somerville High School			
Drawn By: Dan Leary	SIZE	FSCM NO	DWG NO	REV	
06/01/07	SCALE	NTS	Power	1 OF 1	

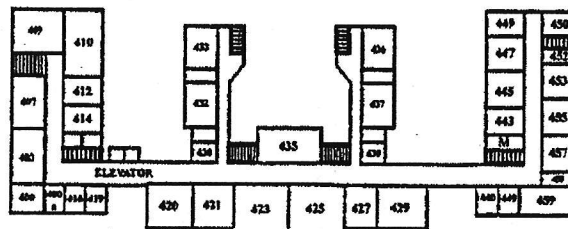
SOMERVILLE HIGH SCHOOL MAP



Student Services Suite-Beacon House
 259 English Department
 200 - Math Department
 M - Mens' Room
 W - Womans Room



312 Elm House
 M - Mens Room
 W - Womans Room



421 - Science Department
 419 - Highland House
 400A - Business Department
 440 - Broadway House
 M - Mens Room
 W - Womans Room