MEMORANDUM

DATE: **May 17, 2013**

TO: **Michael Herring, City Administrator**

FROM: **Mike Geisel, Director of Public Services**

RE: **CVAC Bleacher Covers**

As you are aware, on February 20, 2013, City Council approved funding for bleacher covers at the F Athletic Fields in the amount of $154,000. Each of the other baseball\softball quads already have bleacher covers which were installed previously, at various times and with various funding sources. Until now, we have specified and constructed a standardized uniform steel cover structure throughout the complex.

As you also might expect, we are frequently approached by contractors and vendors suggesting alternative products or energy conserving systems. We evaluate each of these to some degree, but are generally reluctant to deviate from proven systems. We strive to be good stewards of taxpayer funds. The energy conservation field is especially volatile and new opportunities arise regularly. In many such instances, a hybrid form of consulting and contracting has developed. Firms, specializing in energy products, approach agencies and offer to audit facilities, design improvements, seek grant funding, and if successful, contract for the project implementation.

Recently, in conjunction with an unrelated project, we were introduced to such a firm, Day & Night Solar. They were working with a private developer to incorporate photo-voltaic solar panels into their project to reduce their annual operating expenses. Knowing that we continually investigate cost effective energy alternatives, they offered to review several City sites for potential energy projects. As you know, such opportunities frequently cannot be cost justified based upon energy savings alone. Rarely can the cost of solar panels or other alternative energy solutions be independently cost justified. **As you would expect, although we have multiple facilities, none of the existing facilities proved to be viable for an independent energy related project, based on energy savings alone.**

However, as you also know, the Department of Public Services was already funded to construct two capital projects which offered potential for alternative designs. The first project is replacement of the canopy over the gas pumps at the public works facility. The second project is construction of the bleacher

covers at the F athletic fields in the Chesterfield Valley Athletic Complex. Both are metal awning type structures. Day & Night Solar reviewed both projects, electrical usage at the specific meter locations, and developed cost estimates to construct the awning type structures using photo voltaic panels in lieu of the standard metal roof components. Obviously, if a comparable structure could be built with photo voltaic panels, at a cost equal to or less than the traditional structure, it would appear to be a win-win proposal. Unfortunately, the structural requirements for the gas canopy simply made it impossible to utilize the photo voltaic panels cost effectively. However, the use of the photo voltaic panels for the bleacher covers appears to be viable and cost justified. We believe we have found a very favorable opportunity.

As you would expect, the energy savings from the bleacher covers would not independently justify their construction. However, given their multi-purposed use, that is not necessary. The net increase to utilize the photo-voltaic panels for bleacher covers is $48,000 over the costs to construct our standard bleacher cover. **Ameren provides an immediate rebate of $50,000 for such projects**. Day & Night Solar has already applied for the rebate on behalf of the City and Ameren has approved the project with the full rebate (see attachments). The Ameren rebate is based on $2 per KW capacity, up to a maximum rebate of $50,000 per meter location. As such, our rebate for the 8 bleacher covers at the F Athletic Fields will be $50,000. The City can incorporate the photo-voltaic panels into the project at no additional net cost if we choose to contract with Day & Night Solar for all services related to the permitting, design, rebate administration, and construction using photo-voltaic panels in lieu of advertising and bidding for construction of our standard bleacher covers. To be very clear, I am making no attempt to justify the cost of the photo-voltaic alternatives through energy savings. **The cost of the photo-voltaic panel alternative is immediately fully off-set by the initial Ameren rebate.**

Clearly, the City will benefit from ongoing cost savings as a result of the net metering and energy production from the photo-voltaic panels. For the purpose of developing my recommendation, we can avoid any calculated projections of cost savings or estimates as to the return on our investment. **Make no mistake, the photo voltaic panels will produce electric, reduce our energy costs from Ameren, and directly save us money on an annual basis**. It is simply not necessary to use these "future savings" to justify the alternative project, because the differential in cost is FULLY covered by the Ameren incentive. The term "net metering" sounds technical, but it is not. In essence, the photo voltaic panels operate and generate electrical power continuously during day time hours. These panels are directly connected to the meter at the F Concession stand. During a busy day during the summer, while the complex is in full operation, the power generated by the panels

simply reduces the amount of electric we have to pull off of the Ameren grid. You only pay for what you use, so reducing our draw from Ameren reduces our cost. However, on those days where we have no activity or there is no significant electrical use at the F quad, the panels continue to generate electricity. In very simple terms, this power goes through the meter and directly into the larger Ameren power grid. The meter runs backwards, so to speak, and Ameren pays the City a pre-determined rate for this power which is then used by other Ameren customers.

Day & Night solar has provided a turn-key proposal to construct the bleacher covers using photo-voltaic panels to comprise the roof itself, at a cost of $203,500. These panels would be connected to the F – athletic concession stand and net metered, as a direct partial offset to our energy usage. There are four fields, with two bleacher covers at each field, resulting in a total of eight bleacher covers. The bleacher covers would be structurally supported by two cantilevered support columns, as are our current structures. The photo-voltaic panels would be protected from softballs or baseballs with a protective screen above. The turn-key proposal includes all of their efforts to date in the acquisition of the grant funding, as well as all aspects of construction; from design and permitting, including excavation and foundations, connections and switching, to project turnover.

The photo-voltaic alternative is justified based upon the City's successful rebate application through Ameren. Day and Night Solar has proceeded, without obligation, to submit the project rebate application to Ameren. As you can see from the attached e-mail received on 4/23/2013, Ameren has accepted the grant and we qualify for the full $50,000 as soon as the project is completed. This is not a phased rebate, but is due upon project completion.

As previously stated, Council has already approved and directed Staff to proceed to construct bleacher covers at the F Athletic Fields. There is $154,000 allocated for this project in the current budget. Accordingly, I request that this information be provided to the Parks and Recreation Committee of Council. I further recommend that, given Ameren's approval and acknowledgement for their rebate in the amount of $50,000, that the City proceed to construct the bleacher covers as proposed by Day & Night Solar, at a total gross cost not to exceed $204,000, resulting in a net cost to the City, not to exceed $154,000, as currently provided for in the 2013 budget.

I am requesting City Council's approval and direction to proceed with the bleacher covers under the alternative design configuration and contracting with Day & Night Solar, concurrent with Ameren's $50,000 rebate commitment for alternative energy products.

From a budget and accounting standpoint, the actual gross expenditure will increase from $154,000 to $204,000, but the increase will be fully offset by Ameren's $50,000 rebate. **The Ameren charge for electricity at the F Athletic Quad during 2012 was $17,802.** As stated multiple times within this recommendation, this project alternative is revenue positive even if there were no future or ongoing energy reductions. Clearly, those reductions will actually realized. However, keep in mind that our activities at the Chesterfield Valley Athletic complex are increasing rapidly. We have added multiple tournaments, increased field usage, added other complimentary sports and continue to expand the park use. Our electrical consumption will certainly increase as the use expands as we have described in other reports. While I once again want to stress that we are not attempting to justify the use of the panels to fund the project, it is also a reality that their use will off-set some of our costs. **The use of the photo-voltaic panels is expected to reduce our growing electrical expenses at this facility by as much as $4,500 annually. That is not a reduction from our current levels, but should be considered a hedge against the growth in expenditures due to the expanded usage of our facilities and of course future rate increases.**

As such, **I recommend that this information be forwarded to the Parks and Recreation Committee for information and approval.** If you have any questions or require additional information, please advise.

attachments

Cc Tom McCarthy, Parks and Recreation Director
Jim Eckrich, Public Works Director\City Engineer
Brian Whittle, Finance Director

Mike Geisel

From: Thomas McCarthy
Sent: Tuesday, April 23, 2013 7:20 AM
To: Mike Geisel
Cc: Patrick Murphy (patrick@dayandnightsolar.com)
Subject: FW: City of Chesterfield/Concession Stand, 17891 North Outer Forty, Chesterfield, MO 63005 - 38.40 kW SOLAR

Looks like we have been approved for the Ameren rebate

From: Henry, Missy A [mailto:MHenry@ameren.com]
Sent: Monday, April 22, 2013 2:28 PM
To: Thomas McCarthy
Cc: 'Stan Clark'; Carrie Ward (carrie@dayandnightsolar.com)
Subject: City of Chesterfield/Concession Stand, 17891 North Outer Forty, Chesterfield, MO 63005 - 38.40 kW SOLAR

April 22, 2013

City of Chesterfield/Concession Stand
17891 North Outer Forty
Chesterfield, MO 63005

RE: 38.40 kW Solar for Ameren Missouri Acc't - 13731-57001

Ameren Missouri is pleased to advise that your Interconnection Net Metering Application has been **approved**. Please be aware that if your equipment or installation design plans change from what we have approved, you must resubmit a revised net metering application with the new design and specifications for our review and approval. Your generating system must be constructed per the final net metering application, design and specifications that have been approved.

The next step, after you have completed your system installation and have had it inspected by the local authority, is to complete Section E Electrical Inspection and Section F Customer-Generator Acknowledgement of the Net Metering agreement. When our Renewables group receives the completed and signed Sections E & F along with the local authority wiring inspection approval documentation, we will arrange to replace your existing electric billing meter with the required bi-directional meter. The cost for the bi-directional meter is **$187**, and this one time charge will be added to your next bill after the bi-directional meter installation is completed. Please note that the bidirectional meter will be installed within 20 business days or less from the date Ameren Missouri receives your completed Sections E & F and approved wiring inspection documentation.

After setting the bi-directional meter we will place a red sticker label on the meter enclosure that indicates "alternative generation present". When the alternative generation label is in place, you are allowed to turn your PV system on and operate in parallel with Ameren Missouri. Please do not operate your system prior to the bi-directional meter being installed. If the system is operated prior to the bi-directional metering being set, Ameren Missouri receives alarms which trigger a site visit by an Ameren Missouri employee for investigation. Please note, costs associated with the erroneous alarm may be added to your electric bill. However, it is allowed for you to test your system prior to the bi-directional meter being set if your net metering application/design was previously approved by Ameren Missouri and you email us of the test 3 day in advance.

Please note, Ameren's metering personnel inspects your system when setting the bi-directional meter. However, at times an inspection may also be done by our Distribution Reliability Inspector.

Please be sure that the required visible, lockable, knife blade style AC disconnect switch is clearly labeled (example: ALTERNATIVE GENERATION AC DISCONNECT SWITCH). If you do not have an AC disconnect switch label, please feel free to contact us and we would be happy to mail you or your developer a label. This is a safety requirement and Ameren Missouri will not install the bi-directional meter if this sticker is not present on the AC disconnect switch.

The last step in the Net Metering agreement process, is for Ameren Missouri to complete Section G Application Approval and send you a fully executed copy of the agreement.

With the approval of your application, we have also committed 2013 Solar Renewable Energy Credit (SREC) dollars for your system. Please note that SREC participation is voluntary. You will receive a formal 2013 SREC offer with additional details within 60 days of this design approval letter. Please be sure to read the offer in its entirety and follow all the requirements prior to the indicated deadline dates listed. If you choose to participate in the 2013 Rider SP – SREC Annual Payment Offer Agreement (SREC), an Ameren Missouri "generator meter" will be needed. Since the system design submitted with your application currently does not include a generator meter, an updated wiring diagram including a generator meter with the voltage, phase and number of wires at the generator meter will be required (see attached location sketch). Please note that you will be responsible for securing the generator meter enclosure equipment and the wiring and installation of that equipment. Ameren Missouri will supply and set the generator meter for a cost that is normally *around* $550. The actual meter cost and meter enclosure information will be made available after receipt and review of your revised wiring diagram. For specific details regarding the 2013 SREC program, go to http://www.ameren.com/sites/AUE/Rates/Documents/umbe12216rdSP.pdf. Both this net metering application approval and the commitment of 2013 SREC dollars are effective for one year and will expire 12 months from this approval date.

Note that the 2013 SREC Standard Offer Contract is a different program than the Solar Rebate $2/Watt program (Rider SR). As an update on the Solar Rebate program, based on historical solar installations and payments of PV rebates we anticipate that funds for the solar rebate will be available for newly executed solar Net Metering Agreements with approved rebate applications through 2013. Please note this is based on the current status of the RES statute, regulatory rules and historical PV installation rates.

Thank you for your support of renewable energy and doing your part to protect our environment. If you have any questions, feel free to give me a call.

Missy Henry on behalf of

Lisa Cosgrove

Lisa Cosgrove : : Program Supervisor, Renewable Energy : : T 314.554.2649 : : C 314.541.3785
Ameren Missouri : : 1901 Chouteau Avenue, MC 611 : : Saint Louis, MO 63103

Day & Night Solar

1605 Eastport Plaza Drive, Suite 135
Collinsville, IL 62234
P: (618) 344-4001 FAX: (618) 344-4085

Date: April 15, 2013

Prepared for:

City of Chesterfield
17891 North Outer Forty, Concession Stand
Chesterfield, MO 63005

Purchase Order / Proposal

This purchase order is provided for official quotation purposes for **CVAC Quad F Bleacher Covers, 17891 North Outer Forty Road, Chesterfield, MO 63005**. It also includes shipping costs to customer designation and includes taxes applicable to the project city and state. All orders are insured for 100% of the value of the order to the job site at no additional cost to the Customer.

Our proposal includes the necessary items below on the above referenced project for the sum of two hundred three thousand, five hundred dollars and no eents **($203,500.00)**.

Our quote includes both materials and installation of items listed below to provide a 38.40 kW system per attached systems overview:

1. One hundred twenty-eight (128) 300-watt US made panels, sixteen (16) per canopy
2. Inverters included
3. Eight (8) 16'x26' canopies 10'4" height with foundations per drawings of vertical poles directly embedded in concrete, no rebar cage, based upon final foundation engineering and soil reports
4. Eight (8) knotted #21 clear protective netting above top of panel array. One (1) per canopy.
5. Disconnects and required signage per local code
6. Flush mount solar mounting hardware for roof mounting of solar on each canopy
7. Web monitoring system installed to customer provided internet connection inside building within 25' of combined connection in utility room, transmitting lines to utility room from canopies included
8. All conduits, wire and their associated supports, terminations and testing.
   (Proposal is based on an EMT Conduit installation.)
9. Grounding
10. Shipping
11. Soil boring samples to be provided by customer
12. Permits and inspections, trash and spoils removal
13. All work per applicable codes and the authority having jurisdiction
14. Bond
15. This is a prevailing wage project.

Our quote above excluded the following:

1. Overtime
2. Structural warranties of any kind for the building
3. Fire alarms
4. Temporary power
5. Soil boring samples. To be provided by customer
6. Toilet or break room facilities. Proposal is based on utilizing Owners facilities.
7. Project financing
8. Any upgrades material, labor, switch gear or transformers for existing equipment if modification is needed
9. Any balancing of existing loads

Clarifications:

1. Lay down area provide for site storage trailer and materials

Initials: _____

Day & Night Solar

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Acceptance of quote indicates a preliminary intent to purchase and secures pricing as quoted for thirty (30) days upon with delivery schedule, order specifications, and customer requirements to be confirmed subsequently through mutually approved installation schedule.

IMPORTANT - READ CAREFULLY BEFORE SIGNING: READ ALL OF THE TERMS AND CONDITIONS CAREFULLY AS THIS PURCHASE ORDER IS SUBJECT TO ADDITIONAL PROVISIONS ON THE ATTACHED PAGES, INCLUDING A LIMITATION OF SUPPLIERS LIABILITY. **RIGHT TO CANCEL**: UNDER THE TERMS AND CONDITIONS, PURCHASER HAS LIMITED RIGHTS OF CANCELLATION.
PURCHASER PROMISES TO PAY THE TOTAL INITIAL AMOUNT DUE WITH THIS PURCHASE ORDER AND TO PAY THE REMAINING CHARGES AGREED TO HEREIN, PLUS ALL APPLICABLE TAXES, LATE PAYMENT CHARGES, AND COLLECTION FEES AS BILLED BY SUPPLIER, UNTIL PAID IN FULL, AS PROVIDED IN THE ATTACHED TERMS AND CONDITIONS. ALL PURCHASE ORDERS SUBJECT TO CREDIT APPROVAL AND SUPPLIER RESERVES THE RIGHT TO REJECT ANY PURCHASE ORDER IN ITS SOLE DISCRETION.

PURCHASER HEREBY REPRESENTS AND WARRANTS THAT IT HAS READ, REVIEWED, AND APPROVED ALL OF THE ATTACHED TERMS AND CONDITIONS.

On behalf of City of Chesterfield:

By: _____ Date: _____

Print Name: _____

Company: _____

PURCHASE ORDER TERMS AND CONDITIONS

Price, specifications, and these terms are subject to change without notice. All products and product parts come with original warranty. Purchaser pays return shipping on all products and parts. Day & Night Solar reserves the right to refuse any purchase order.

Day & Night Solar accepts the following Payment Methods: NO C.O.D. ORDERS

1. Prepaid Company Check, Personal Check, Cashier Check or Money Order (Note: All Checks must be cleared. Allow 7 to 10 business days.)

2. Bank Wire Transfer to the following Instructions
   PNC Bank
   6650 Edwardsville Crossing Drive
   Edwardsville, IL 62025
   Contact for Routing Information

Day & Night Solar Purchase Agreement
By accepting delivery of any product delivered from Day & Night Solar, you ("Customer") agree that the following terms and conditions are the sales terms governing the sales transaction between Customer/Day & Night Solar. Any attempt to alter, supplement, modify or amend these terms and conditions by the Customer will be considered a material alteration of this agreement and, therefore, are null and void. In addition, these terms and conditions are subject to change by Day & Night Solar at any time, without prior written notice. Therefore, please check these terms and conditions carefully each time you place an order with or accept delivery of any products from Day & Night Solar.

Payment Terms on Orders
An order is not binding upon Day & Night Solar until it is accepted. Day & Night Solar must receive payment before it will accept an order unless otherwise previously agreed in writing. Payment for product(s) ordered is due prior to shipment.

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Payment Schedule
25% of the total Purchase Price due immediately with order; an additional payment of 50% of the total Purchase Price due immediately upon delivery of equipment to job site, with balance due 15 days after system installation is complete and tested by installer electrician to verify working.

If credit terms have been established, Customer agrees to pay the amount due as specified on the invoice and agrees to pay interest on all past-due sums at a rate of 1.5% per month or the highest rate allowed by law.

Shipping Charges/State Taxes
Your total cost for purchase of any product will include shipping and handling charges as well as applicable state sales tax (unless exempt) and shown on Day & Night Solar invoice.

Processing Time
You can expect your order to be processed within five to seven business days. Day & Night Solar aims to ship your order within 30 days of order placement unless otherwise communicated. If you need an item by a certain date, please check with Day & Night Solar regarding availability of the item and shipping options. Any items that are unavailable will be placed on back order, and the remainder of your order will be shipped. Estimated ship dates will be provided however please note that these dates are "estimates" and not guaranteed to arrive on that date. Day & Night Solar will do everything possible to keep you informed of your order via e-mail.

Change Orders
You may change your order, provided that your order has not yet been processed and shipped. Please contact your sales person directly with any changes to be made and please have your order number available.

Shipping Policy
Day & Night Solar vendors carefully inspect all shipments. Installer must inspect their shipments upon delivery prior to signing the release. Installer that will not be signing for their order when it is delivered are responsible to see that the person signing has read and understands these Terms and Conditions. An independent shipping contractor will deliver the order. When the shipment arrives the driver will ask you to sign for the delivery. This is a legal document stating that the package is being delivered in good condition without damage and that the Installer is waiving any additional claim from the shipper. Before signing, inspect the package(s) closely on all six sides. Note any box damage including scuffs, dents, tears, punctures or creases on the delivery receipt. If there is anything unusual with the package, the Installer/Dealer has the right to open it to inspect the contents. If the driver is unwilling to wait while you inspect all of the items, you may mark on the delivery receipt "Concealed Damage Possible". If there is damage to the shipment, contact Day & Night Solar immediately. Day & Night Solar must be notified of any damage on any shipment within 7 days of receipt. Day & Night Solar cannot guarantee replacement at no cost to the recipient when notified of damage after 7 days of receipt.

Cancellation Policy
IF PURCHASER WISHES TO TERMINATE THE PURCHASE ORDER, PURCHASER WILL NEED TO PROVIDE PRIOR WRITTEN NOTICE REQUESTING CANCELLATION NO LATER THAN 5 CALENDAR DAYS AFTER RECEIPT OF PURCHASE ORDER BY DAY & NIGHT SOLAR DAY & NIGHT SOLAR WILL THEN MAKE ITS GOOD FAITH BEST EFFORT TO CANCEL THE ORDER, HOWEVER, IF THE ORDER CANNOT BE CANCELLED, THEN PURCHASER IS RESPONSIBLE FOR ACCEPTANCE OF THE ORDER AND FULL PAYMENT. OTHER THAN THIS CANCELLATION PROVISION, PURCHASHER HAS NO RIGHT TO CANCEL AN ORDER.

Return Policy
Products purchased through Day & Night Solar may not be returned unless they have been approved for warranty repair. Please refer to the warranty document for the appropriate procedure.

Title & Risk of Loss
Day & Night Solar will arrange for shipment of ordered product(s) to the Customer, Freight On Board (F.O.B.) shipping point, meaning title to the product(s) and risk of loss passes to the Customer upon delivery to the carrier. Day & Night Solar reserves a purchase money security interest in the product(s) until its receipt of the full amount due. Customer agrees to allow Day & Night Solar to sign appropriate documents on Customer behalf to permit Day & Night Solar to protect its purchase money security interest. Day & Night Solar will advise Customer of estimated shipping dates, but Day & Night Solar will, under no circumstances, be responsible for delays in delivery, and associated damages, due to events beyond its reasonable control,

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including without limitation, acts of God or public enemy, acts of federal, state or local government, fire, floods, civil disobedience, strikes, lockouts, and freight embargoes.

Governing Law and Jurisdiction
Any dispute arising out of or related to these Terms and Conditions or the sales transaction between Day & Night Solar and Customer shall be governed by the laws of the State of Illinois, without regard to its conflicts of law rules. Specifically, the United Nations Convention on the International Sale of Goods shall not govern the validity, interpretation, and performance of this agreement. Day & Night Solar consent to the exclusive jurisdiction and the venue of the State Courts of the State of Illinois, Madison County, to resolve any dispute between them related hereto, and the parities waive all rights to contest this exclusive jurisdiction and venue of such Courts. Finally, the Customer also agrees not to bring any legal action, based upon any legal theory including contract, tort, equity, or otherwise, against Day & Night Solar that is more than one year after the date of the applicable invoice.

Rock Excavation
Should Day & Night Solar encounter rock requiring special rock excavation equipment (jack hammer or special trenching equipment), the Client will be notified and additional cost could be incurred. A change order with the additional costs will need to be presented to the Customer for signature before moving forward.

Severability
If any provision contained in this agreement is or becomes invalid, illegal, or unenforceable in whole or in part, such invalidity, illegality, or unenforceability shall not affect the remaining provisions and portions of this agreement, and the invalid, illegal, or unenforceable provision shall be deemed modified so as to have the most similar result that is valid and enforceable under applicable Illinois law.

Waiver
The failure of either party to require performance by the other party of any provision of this agreement shall not affect in any way the first party's right to require such performance at any time thereafter. Any waiver by either party of a breach of any provision in this agreement shall not be taken or held by the other party to be a continuing waiver of that provision unless such waiver is made in writing.

Entire Agreement
These terms and conditions, together with respecting the products ordered by Customer, are the complete and exclusive agreements between Day & Night Solar and Customer, and they supersede all prior or contemporaneous proposals, oral or written, understandings, representations, conditions, warranties, and all other communications between Day & Night Solar and Customer to the subject products. This agreement may not be explained or supplemented by any prior course of dealings or trade by custom or usage.

LIMITATION OF LIABILITY: IN ALL CIRCUMSTANCES DAY & NIGHT SOLAR'S MAXIMUM LIABILITY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCTS SOLD. DAY & NIGHT SOLAR SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE UPON A CLAIM OR ACTION IN CONTRACT, TORT, INDEMNITY OR CONTRIBUTION, OR OTHER CLAIMS RELATING TO THE PRODUCTS IT SELLS WHICH EXCEEDS THIS LIABILITY LIMIT. DAY & NIGHT SOLAR SHALL NOT BE LIABLE FOR THIRD PARTY CLAIMS FOR DAMAGES AGAINST THE INSTALLER, OR FOR MALFUNCTION, DELAYS, INTERRUPTION OF SERVICE, LOSS OF BUSINESS, LOSS OR DAMAGE TO EXEMPLARY DAMAGES, WHETHER OR NOT DAY & NIGHT SOLAR IS APPRISED OF THE POSSIBILITY OF SUCH CLAIMS OR DAMAGES.

Initials: _____

Thomas McCarthy

From: Patrick Murphy <patrick@dayandnightsolar.com>
Sent: Monday, April 15, 2013 1:16 PM
To: Thomas McCarthy
Subject: RE: Quad F Bleacher Covers

Follow Up Flag: Follow up
Flag Status: Flagged

Tom – from Stan Clark, our construction manager, a few more comments on your questions:

2. Construction schedule.
    a. How long will it take once we pull the trigger to move forward. Schedule shows time of construction. Start date to be determined by a preconstruction meeting and start date, Final approval from Ameren and a permit for the City before starting.
    b. A clear understanding that we need to keep the complex open in the evening and weekends during construction and how we will work around this. Gating off areas and securing equipment Once we start, we will have caution tape and orange cones to keep traffic out of areas. No work will be done on weekends or evenings.
    c. Prior to construction starting we need to make sure everything is on site and we won't be waiting on any product. All product will be either on site or in our warehouse except items like conduit or wire etc.

From: Patrick Murphy [mailto:patrick@dayandnightsolar.com]
Sent: Friday, April 12, 2013 3:16 PM
To: tmccarthy@chesterfield.mo.us
Subject: RE: Quad F Bleacher Covers

Tom – a question for you – do you have soil samples we will be able to use?

From: Patrick Murphy [mailto:patrick@dayandnightsolar.com]
Sent: Friday, April 12, 2013 3:12 PM
To: tmccarthy@chesterfield.mo.us
Subject: FW: Quad F Bleacher Covers

The proposal looks good for the bleacher covers, I would like to move forward, but I need two things answered first.

1. Clarification on the netting over the panels.
    a. Can I get a detailed drawing how the netting is attached
    b. Net information, cost of replacement and life expectancy
2. Construction schedule.
    a. How long will it take once we pull the trigger to move forward.
    b. A clear understanding that we need to keep the complex open in the evening and weekends during construction and how we will work around this. Gating off areas and securing equipment

c. Prior to construction starting we need to make sure everything is on site and we won't be waiting on any product.

Hi Tom – re your questions

- attached is information about the nets and some of the parts we will be using as well as a sketch showing how they will be attached.

- The cost of the net itself is $120 for replacement purposes, and it is treated with a clear coat for UV protection.

- Life expectancy of the nets, with the UV protection, is approx.. 5 – 7 years, depending on weather conditions.

Regarding the construction schedule, attached is a tentative outline of the expected timing and steps in the process. After the introduction to Ron Gable, we are going to talk with his company when Ron returns Monday to see if they may be able to do the canopy installation for us. If not, we have another company lined up that meets our price and specs, so the process and timing may change somewhat depending upon which company is engaged. We understand the requirements of the facility and the need to protect the public and build in a timely manner, and we will keep those mandates in mind throughout the process. We will get back to you next week with feedback on your 2nd set of questions regarding the construction schedule.

Thank you,

Pat

Patrick Murphy, CFA
Regional Sales Manager
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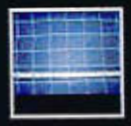
636.579.9464 [**mobile**
636.216.0405 [**fax**

More Views



Knotted #21 White 1 3/4"

REVIEW THIS PRODUCT

Model: K21W-1 3/4"

Description

#21 three-strand twisted twine - knotted netting - 1 3/4" mesh - white. 1.55 mm twine diameter, 3.5" stretched mesh, 175.4 lbs. breaking strength per ISO 1806 test method. Netting can be rope, web, or vinyl bound. Other colors are available.

▸ Pricing Options

Eye & Hook Turnbuckles

Our Eye & Hook Turnbuckles are constructed of high quality hot galvanized, drop forged steel. Domestic or imported.

More Views

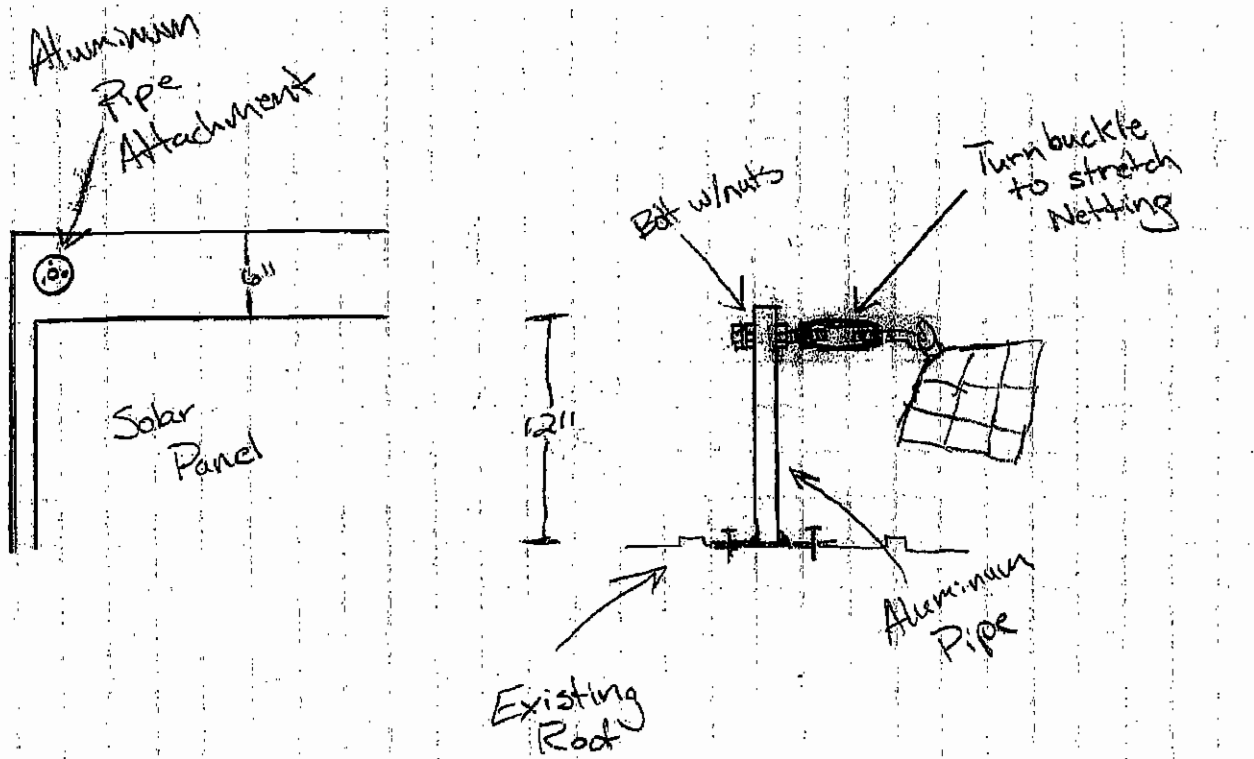
Hog Rings

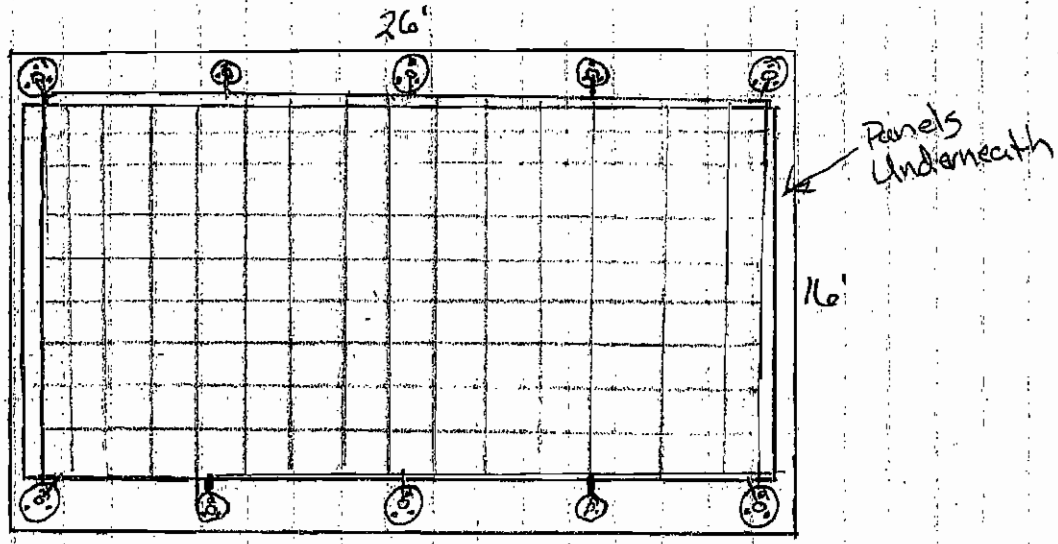
REVIEW THIS PRODUCT

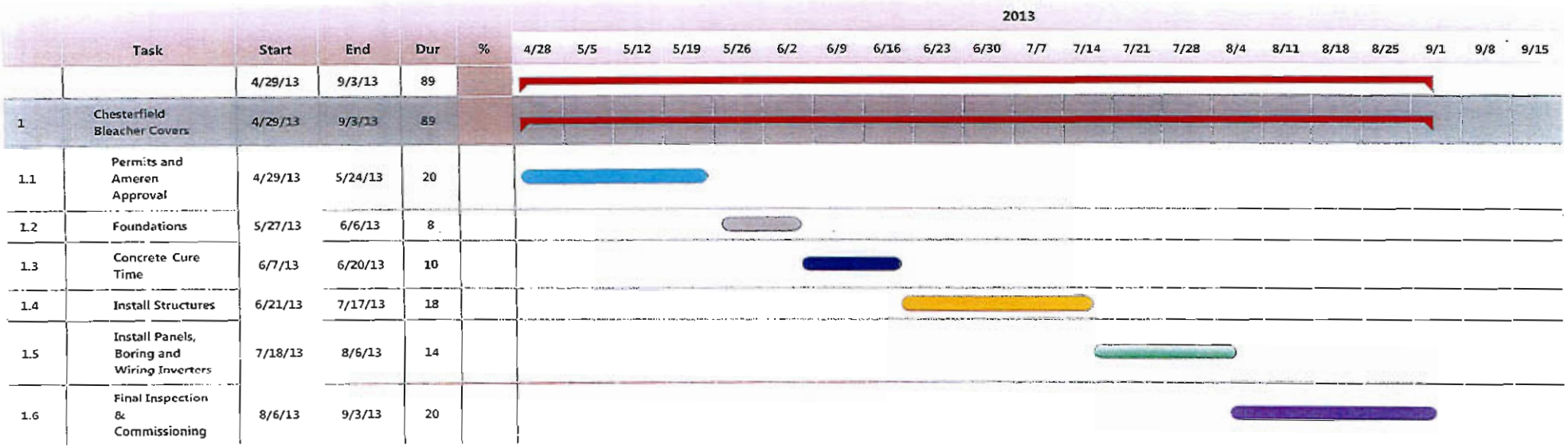
Model: SR

Description

#9 galvanized screen rings. These screen rings are a way to make a permanent attaching point between an existing cable and your netting product. The netting is hooked into one side of the "C" shaped ring and the other side is hooked to the cable. The screen/hog rings are then compressed with special pliers to form a complete netting to cable attaching point.


Aluminum Pipe Attachment
6"
Solar Panel
Bolt w/nuts
Turnbuckle to stretch Netting
12"
Aluminum Pipe
Existing Rod


26'
Panels Underneath
16'



	Task	Start	End	Dur	%
		4/29/13	9/3/13	89	
1	Chesterfield Bleacher Covers	4/29/13	9/3/13	89	
1.1	Permits and Ameren Approval	4/29/13	5/24/13	20	
1.2	Foundations	5/27/13	6/6/13	8	
1.3	Concrete Cure Time	6/7/13	6/20/13	10	
1.4	Install Structures	6/21/13	7/17/13	18	
1.5	Install Panels, Boring and Wiring Inverters	7/18/13	8/6/13	14	
1.6	Final Inspection & Commissioning	8/6/13	9/3/13	20	

INTERCONNECTION APPLICATION/AGREEMENT FOR NET METERING SYSTEMS WITH CAPACITY OF 100 kW OR LESS – (CONTINUED)

***For Customers Who Are Assuming Ownership or Operational Control of an Existing Customer-Generator System:**

If no changes are being made to the existing Customer-Generator System, complete sections A, D and F of this Application/Agreement and forward to Company at the address above. Company will review the new Application/Agreement and shall approve such, within fifteen (15) days of receipt by Company, if the new Customer-Generator has satisfactorily completed Application/Agreement, and no changes are being proposed to the existing Customer-Generator System. There are no fees or charges for the Customer-Generator who is assuming ownership or operational control of an existing Customer-Generator System if no modifications are being proposed to that System.

*A. Customer-Generator's Information

Name on Company Electric Account: City of Chesterfield/Concession Stand

Mailing Address: 17891 North Outer Forty

City: Chesterfield State: MO Zip Code: 63005

Service/Street Address (if different from above): Same As Above

City: _____ State: _____ Zip Code: _____

Electric Account Holder Contact Person: Tom McCarthy

Daytime Phone: 636-812-9503 Fax: 636-573-4798 E-Mail: tmccarthy@chesterfield.mo.us

Emergency Contact Phone: _____

Company Account No. (from Utility Bill): 13731-57001

If account has multiple meters, provide the meter number to which generation will be connected: 80761831

*B. Customer-Generator's System Information

Manufacturer Name Plate: Power Rating: 38.40 kW AC or (DC) (circle one)

Voltage: 480 Volts

System Type: ___Wind, ___Fuel Cell, ___Solar Thermal, ✓ Photovoltaic, ___Hydroelectric.

___Other (describe) _____

Inverter/Interconnection Equipment Manufacturer: Fronius

Inverter/Interconnection Equipment Model No.: IG Plus 5.0-1 UNI

Inverter/Interconnection Equipment Location (describe): Mounted on canopy structure

Outdoor Manual/Utility Accessible & Lockable Disconnect Switch Distance from Meter: _____

Describe the location of the disconnect switch: On west wall of concession stand building - outside within 10ft. of meter

If disconnect switch is greater than 10 feet from electric service meter, describe why an alternate location is being requested: N/A

* Indicates Change.

INTERCONNECTION APPLICATION/AGREEMENT FOR NET METERING SYSTEMS WITH CAPACITY OF 100 kW OR LESS – (CONTINUED)

*B. Customer-Generator's System Information (Continued)

Existing Electrical Service Capacity: 600 Amperes Voltage: 480 Volts

Service Character: Single Phase ____ Three Phase ✓

Total capacity of existing Customer-Generator System (if applicable): N/A kW

System Plans, Specifications and Wiring Diagram must be attached for a valid application.

*C. Installation Information/Hardware and Installation Compliance

Company Installing System: Day+Night Solar

Contact Person of Company Installing System: Stan Clark Phone Number: 618-344-4001

Contractor's License No. (if applicable): N/A

Approximate Installation Date: 2nd Qtr 2013

Mailing Address: 1605 Eastport Plaza Dr Ste 135

City: Collinsville State: IL Zip Code: 62234

Daytime Phone 618-344-4001 Fax: 618-344-4085 E-Mail: stan@dayandnightsolar.com

*The Customer-Generator's proposed System hardware complies with all applicable National Electrical Safety Code (NESC), National Electrical Code (NEC), Institute of Electrical and Electronics Engineers (IEEE) and Underwriters Laboratories (UL) requirements for electrical equipment and their installation. As applicable to System type, these requirements include, but are not limited to, UL 1741 and IEEE 1547. The proposed installation complies with all applicable local electrical codes and all reasonable safety requirements of Company. The proposed System has a lockable, visible AC disconnect device, accessible at all times to Company personnel located within the vicinity of the Customer-Generator's electric service meter (except in cases where Company has approved an alternate location). The System is only required to include one lockable, visible disconnect device, accessible to Company. If the interconnection equipment is equipped with a visible, lockable, and accessible disconnect, no redundant device is needed to meet this requirement.

The Customer-Generator's proposed System has functioning controls to prevent voltage flicker, DC injection, overvoltage, undervoltage, overfrequency, underfrequency, and overcurrent, and to provide for System synchronization to Company's electrical system. The proposed System does have an anti-islanding function that prevents the generator from continuing to supply power when Company's electric system is not energized or operating normally. If the proposed System is designed to provide uninterruptible power to critical loads, either through energy storage or back-up generation, the proposed System includes a parallel blocking scheme for this backup source that prevents any backflow of power to Company's electrical system when the electrical system is not energized or not operating normally.

Signed (Installer): R. Stanley Clark Date: 3-28-13

Name (Print): R. STANLEY CLARK

* Indicates Change.

INTERCONNECTION APPLICATION/AGREEMENT FOR NET METERING SYSTEMS WITH CAPACITY OF 100 kW OR LESS – (CONTINUED)

D. Additional Terms and Conditions

In addition to abiding by Company's other applicable rules and regulations, the Customer-Generator understands and agrees to the following specific terms and conditions:

1) Operation/Disconnection

If it appears to Company, at any time, in the reasonable exercise of its judgment, that operation of the Customer-Generator's System is adversely affecting safety, power quality or reliability of Company's electrical system, Company may immediately disconnect and lock-out the Customer-Generator's System from Company's electrical system. The Customer-Generator shall permit Company's employees and inspectors reasonable access to inspect, test, and examine the Customer-Generator's System.

***2) Liability**

Liability insurance is not required for Customer-Generators of ten kilowatts (10 kW) or less. For Customer-Generators greater than ten kilowatts (10 kW), the Customer-Generator agrees to carry no less than one hundred thousand dollars ($100,000) of liability insurance that provides for coverage of all risk of liability for personal injuries (including death) and damage to property arising out of or caused by the operation of the Customer-Generator's System. Insurance may be in the form of an existing policy or an endorsement on an existing policy.

Absent clear and convincing evidence of fault on the part of Company, Company cannot be held liable for any action or cause of action relating to any damages to property or person caused by the generation unit of a Customer-Generator or the interconnection thereof pursuant to section 386.890.11, RSMo Supp. 2008. Customer-Generators, including those whose systems are ten kilowatts (10 kW) or less, may have legal liabilities not covered under their existing insurance policy in the event the Customer-Generator's negligence or other wrongful conduct causes personal injury (including death), damage to property, or other actions and claims.

***3) Metering & Distribution Costs**

A Customer-Generator's facility shall be equipped with sufficient metering equipment that can measure the net amount of electrical energy produced or consumed by the Customer-Generator. If the Customer-Generator's existing meter equipment does not meet these requirements or if it is necessary for Company to install additional distribution equipment to accommodate the Customer-Generator's facility, the Customer-Generator shall reimburse Company for the costs to purchase and install the necessary additional equipment. At the request of the Customer-Generator, such costs may be initially paid for by Company, and any amount up to the total costs and a reasonable interest charge may be recovered from the Customer-Generator over the course of up to twelve (12) billing cycles. Any subsequent meter testing, maintenance, or meter equipment change necessitated by the Customer-Generator shall be paid for by the Customer-Generator.

***4) Ownership of Renewable Energy Credits or Renewable Energy Certificates (REC's)**

RECs created through the generation of electricity by the Customer-Owner are owned by the Customer-Generator until explicitly transferred to another entity. Nothing in this contract gives Company any preferential entitlement to the RECs generated by the Customer-Generator's system.

* Indicates Change.

INTERCONNECTION APPLICATION/AGREEMENT FOR NET METERING SYSTEMS WITH CAPACITY OF 100 kW OR LESS – (CONTINUED)

***5) Energy Pricing and Billing**

The net electric energy delivered to the Customer-Generator shall be billed in accordance with the Company's Applicable Rate Schedule 5, Schedule of Rates for Electricy. The value of the net electric energy delivered by the Customer-Generator to Company shall be credited in accordance with the net metering rate Schedule 1, Electric Power Purchases.

Net electrical energy measurement shall be calculated in the following manner:

(a) For a Customer-Generator, a retail electric supplier shall measure the net electrical energy produced or consumed during the billing period in accordance with normal metering practices for customers in the same rate class, either by employing a single, bidirectional meter that measures the amount of electrical energy produced and consumed, or by employing multiple meters that separately measure the Customer-Generator's consumption and production of electricity;

(b) If the electricity supplied by the supplier exceeds the electricity generated by the Customer-Generator during a billing period, the Customer-Generator shall be billed for the net electricity supplied by the supplier in accordance with normal practices for customers in the same rate class;

(c) If the electricity generated by the Customer-Generator exceeds the electricity supplied by the supplier during a billing period, the Customer-Generator shall be billed for the appropriate minimum bill as specified by Customer-Generators selected rate, for that billing period and shall be credited an amount for the excess kilowatt-hours generated during the billing period at the net metering rate identified in Company's tariff filed at the Public Service Commission, with this credit applied to the following billing period; and

(d) Any credits granted by this subsection shall expire without any compensation at the earlier of either twelve (12) months after their issuance, or when the Customer-Generator disconnects service or terminates the net metering relationship with the supplier.

6) Terms and Termination Rights

This Agreement becomes effective when signed by both the Customer-Generator and Company, and shall continue in effect until terminated. After fulfillment of any applicable initial tariff or rate schedule term, the Customer-Generator may terminate this Agreement at any time by giving Company at least thirty (30) days prior written notice. In such event, the Customer-Generator shall, no later than the date of termination of Agreement, completely disconnect the Customer-Generator's System from parallel operation with Company's system. Either party may terminate this Agreement by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the terms and conditions of this Agreement, so long as the notice specifies the basis for termination, and there is an opportunity to cure the default. This Agreement may also be terminated at any time by mutual agreement of the Customer-Generator and Company. This agreement may also be terminated, by approval of the Commission, if there is a change in statute that is determined to be applicable to this contract and necessitates its termination.

***7) Transfer of Ownership**

If operational control of the Customer-Generator's System transfers to any other party than the Customer-Generator, a new Application/Agreement must be completed by the person or persons taking over operational control of the existing Customer-Generator System. Company shall be notified no less than thirty (30) days before the Customer-Generator anticipates transfer of operational control of the Customer-Generator's System. The person or persons taking over operational control of Customer-Generator's System must file a new Application/Agreement, and must receive authorization from Company, before the existing Customer-Generator System can remain interconnected with Company's electrical system. The new Application/Agreement will only need to be completed to the extent necessary to affirm that the new person or persons having operational control of the existing Customer-Generator System completely understand the provisions of this Application/Agreement and agrees to them. If no changes are being made to the Customer-Generator's System,

*Indicates Change.

INTERCONNECTION APPLICATION/AGREEMENT FOR NET METERING SYSTEMS WITH CAPACITY OF 100 kW OR LESS – (CONTINUED)

completing sections A, D and F of this Application/Agreement will satisfy this requirement. If no changes are being proposed to the Customer-Generator System, Company will assess no charges or fees for this transfer. Company will review the new Application/Agreement and shall approve such, within fifteen (15) days, if the new Customer-Generator has satisfactorily completed the Application/Agreement, and no changes are being proposed to the existing Customer-Generator System. Company will then complete section G and forward a copy of the completed Application/Agreement back to the new Customer-Generator, thereby notifying the new Customer-Generator that the new Customer-Generator is authorized to operate the existing Customer-Generator System in parallel with Company's electrical system. If any changes are planned to be made to the existing Customer-Generator System that in any way may degrade or significantly alter that System's output characteristics, then the Customer-Generator shall submit to Company a new Application/Agreement for the entire Customer-Generator System and all portions of the Application/Agreement must be completed.

8) Dispute Resolution

If any disagreements between the Customer-Generator and Company arise that cannot be resolved through normal negotiations between them, the disagreements may be brought to the Missouri Public Service Commission by either party, through an informal or formal complaint. Procedures for filing and processing these complaints are described in 4 CSR 240-2.070. The complaint procedures described in 4 CSR 240-2.070 apply only to retail electric power suppliers to the extent that they are regulated by the Missouri Public Service Commission.

9) Testing Requirement

IEEE 1547 requires periodic testing of all interconnection related protective functions. The Customer-Generator must, at least once every year, conduct a test to confirm that the Customer-Generator's net metering unit automatically ceases to energize the output (interconnection equipment output voltage goes to zero) within two (2) seconds of being disconnected from Company's electrical system. Disconnecting the net metering unit from Company's electrical system at the visible disconnect switch and measuring the time required for the unit to cease to energize the output shall satisfy this test. The Customer-Generator shall maintain a record of the results of these tests and, upon request by Company, shall provide a copy of the test results to Company. If the Customer-Generator is unable to provide a copy of the test results upon request, Company shall notify the Customer-Generator by mail that Customer-Generator has thirty (30) days from the date the Customer-Generator receives the request to provide to Company, the results of a test. If the Customer-Generator's equipment ever fails this test, the Customer-Generator shall immediately disconnect the Customer-Generator's System from Company's system. If the Customer-Generator does not provide results of a test to Company within thirty (30) days of receiving a request from Company or the results of the test provided to Company show that the Customer-Generator's net metering unit is not functioning correctly, Company may immediately disconnect the Customer-Generator's System from Company's system. The Customer-Generator's System shall not be reconnected to Company's electrical system by the Customer- Generator until the Customer-Generator's System is repaired and operating in a normal and safe manner.

I have read, understand, and accept the provisions of Section D, subsections 1 through 9 of this Application/Agreement.

Signed (Customer-Generator): Michael O'Hern Date: 3-28-13

*Indicates Change.

INTERCONNECTION APPLICATION/AGREEMENT FOR NET METERING SYSTEMS WITH CAPACITY OF 100 kW OR LESS – (CONTINUED)

*H. Solar Rebate (For Solar Installations only)

Solar Module Manufacturer: Fronius

Inverter Rating: 5750 kW

Solar Module Model No.: IG Plus 5.0-1UNI

Number of Modules/Panels: 128

Module Rating: 300 DC Watts

System Rating (sum of solar panels): 38.4 kW

Module Warranty: 25 years (circle on spec. sheet) ✓

Inverter Warranty: 10 years (circle on spec. sheet) ✓

Location of modules: ✓ Roof ___ Ground

Installation type:

✓ Fixed ___ Ballast

System Installation Date: 2nd Qtr 2013

Solar system must be permanently installed on the applicant's premises for a valid application

Required documents to receive solar rebate (required to be attached for a valid application):

Copies of detail receipts/invoices with purchase date cireled
Copies of detail spec sheets on each component
Copies of proof of warranty sheet (minimum of 10 year warranty)
Photo(s) of completed system
Completed Taxpayer Information Form

*I. Solar Rebate Declaration (For Solar Installations only)

I understand that this program has a limited budget, and that application will be accepted on a first-come, first-served basis, while funds are available. It is possible that I may be notified I have been placed on a waiting list for the next year's rebate program if funds run out for the current year. This program may be modified or discontinued at any time without notice from Company.

I understand that the solar system must be permanently installed and remain in place on premises for the duration of its useful life – a minimum of 10 years.

I understand the equipment must be new when installed, commercially available, and carry a minimum 10 year warranty.

I understand a rebate of $2/watt up to 25,000 watts (25 kW) is available from Company on expanded or new systems that become operational after 12/31/2009 with a maximum rebate of $50,000.

I understand the DC wattage rating provided by the original manufacturer and as noted in section H will be used to determine rebate amount.

I understand business corporations receiving a rebate of $600 or more will receive a 1099. (Please consult your tax advisor with any questions.)

The undersigned warrants, certifies, and represents that the information provided in this form is true and correct to the best of my knowledge; and the installation meets all Missouri Net Metering and Solar Electric Rebate program requirements.

Michael [illegible] James
Applicant's Signature

City of Chesterfield
Print Solar Rebate Applicant's Name

R. Stanley Clark
Installer's Signature

R. STANLEY CLARK
Print Installer's Name

*Indicates Addition

Day & Night Solar

1605 Eastport Plaza Drive, Suite 135
Collinsville, IL 62234
P: (618) 344-4001 FAX: (618) 344-4085

Date: March 22, 2013

Prepared for:

City of Chesterfield
17891 North Outer Forty, Concession Stand
Chesterfield, MO 63005

Purchase Order / Proposal

This purchase order is provided for official quotation purposes for **CVAC Quad F Bleacher Covers, 17891 North Outer Forty Road, Chesterfield, MO 63005**. It also includes shipping costs to customer designation and includes taxes applicable to the project city and state. All orders are insured for 100% of the value of the order to the job site at no additional cost to the Customer.

Our proposal includes the necessary items below on the above referenced project for the sum of two hundred six thousand, four hundred forty-six dollars and forty-nine cents **(206,446.49)**.

Our quote includes both materials and installation of items listed below to provide a 38.40 kW system per attached systems overview:

1. One hundred twenty-eight (128) 300-watt US made panels, sixteen (16) per canopy
2. Inverters included
3. Eight (8) 15'x26' canopies 10'4" height with foundations per drawings of vertical poles directly embedded in concrete, no rebar cage, based upon final foundation engineering and soil reports
4. Eight knotted #21 clear protective netting above top of panel array. One (1) per canopy.
5. Disconnects and required signage per local code
6. Flush mount solar mounting hardware for roof mounting of solar on each canopy
7. Web monitoring system installed to customer provided internet connection inside building within 25' of combined connection in utility room, transmitting lines to utility room from canopies included
8. All conduits, wire and their associated supports, terminations and testing.
   (Proposal is based on an EMT Conduit installation.)
9. Grounding
10. Shipping
11. Soil boring samples to be provided by customer
12. Permits and inspections, trash and spoils removal
13. All work per applicable codes and the authority having jurisdiction

Our quote above excluded the following:

1. Overtime
2. Bond (available upon request at additional cost)
3. Structural warranties of any kind for the building
4. Fire alarms
5. Temporary power
6. Soil boring samples. To be provided by customer
7. Toilet or break room facilities. Proposal is based on utilizing Owners facilities.
8. Project financing
9. Any upgrades material, labor, switch gear or transformers for existing equipment if modification is needed
10. Any balancing of existing loads

Clarifications:

1. Lay down area provide for site storage trailer and materials

Initials: _____

Day & Night Solar

1605 Eastport Plaza Drive, Suite 135
Collinsville, IL 62234
P: (618) 344-4001 FAX: (618) 344-4085

Acceptance of quote indicates a preliminary intent to purchase and secures pricing as quoted for thirty (30) days upon with delivery schedule, order specifications, and customer requirements to be confirmed subsequently through mutually approved installation schedule.

IMPORTANT - READ CAREFULLY BEFORE SIGNING: READ ALL OF THE TERMS AND CONDITIONS CAREFULLY AS THIS PURCHASE ORDER IS SUBJECT TO ADDITIONAL PROVISIONS ON THE ATTACHED PAGES, INCLUDING A LIMITATION OF SUPPLIERS LIABILITY. **RIGHT TO CANCEL**: UNDER THE TERMS AND CONDITIONS, PURCHASER HAS LIMITED RIGHTS OF CANCELLATION.
PURCHASER PROMISES TO PAY THE TOTAL INITIAL AMOUNT DUE WITH THIS PURCHASE ORDER AND TO PAY THE REMAINING CHARGES AGREED TO HEREIN, PLUS ALL APPLICABLE TAXES, LATE PAYMENT CHARGES, AND COLLECTION FEES AS BILLED BY SUPPLIER, UNTIL PAID IN FULL, AS PROVIDED IN THE ATTACHED TERMS AND CONDITIONS. ALL PURCHASE ORDERS SUBJECT TO CREDIT APPROVAL AND SUPPLIER RESERVES THE RIGHT TO REJECT ANY PURCHASE ORDER IN ITS SOLE DISCRETION.

PURCHASER HEREBY REPRESENTS AND WARRANTS THAT IT HAS READ, REVIEWED, AND APPROVED ALL OF THE ATTACHED TERMS AND CONDITIONS.

On behalf of City of Chesterfield:

By: _____ Date: _____

Print Name: _____

Company: _____

PURCHASE ORDER TERMS AND CONDITIONS

Price, specifications, and these terms are subject to change without notice. All products and product parts come with original warranty. Purchaser pays return shipping on all products and parts. Day & Night Solar reserves the right to refuse any purchase order.

Day & Night Solar accepts the following Payment Methods: NO C.O.D. ORDERS

1. Prepaid Company Check, Personal Check, Cashier Check or Money Order (Note: All Checks must be cleared. Allow 7 to 10 business days.)

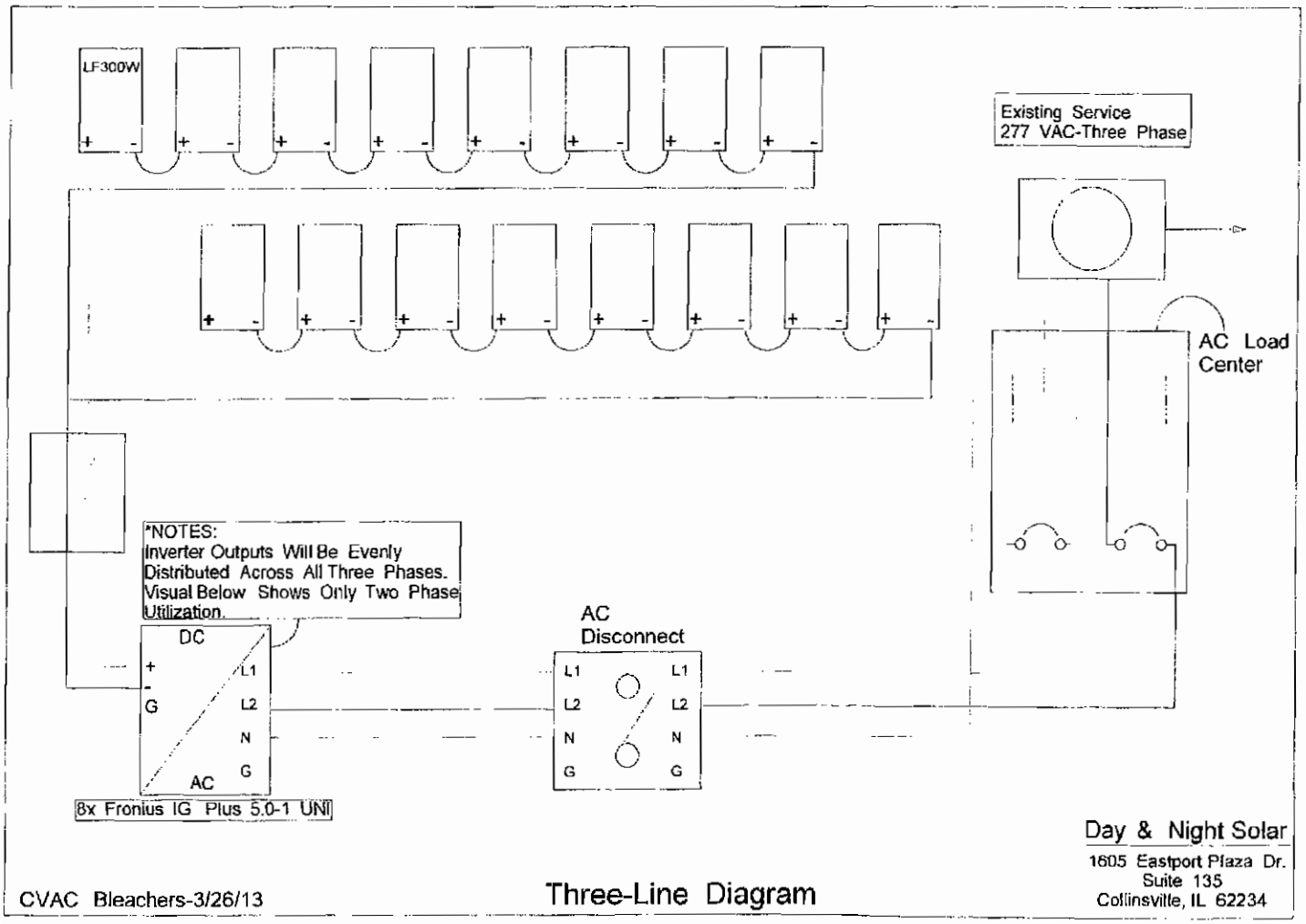
2. Bank Wire Transfer to the following Instructions
   PNC Bank
   6650 Edwardsville Crossing Drive
   Edwardsville, IL 62025
   Contact for Routing Information

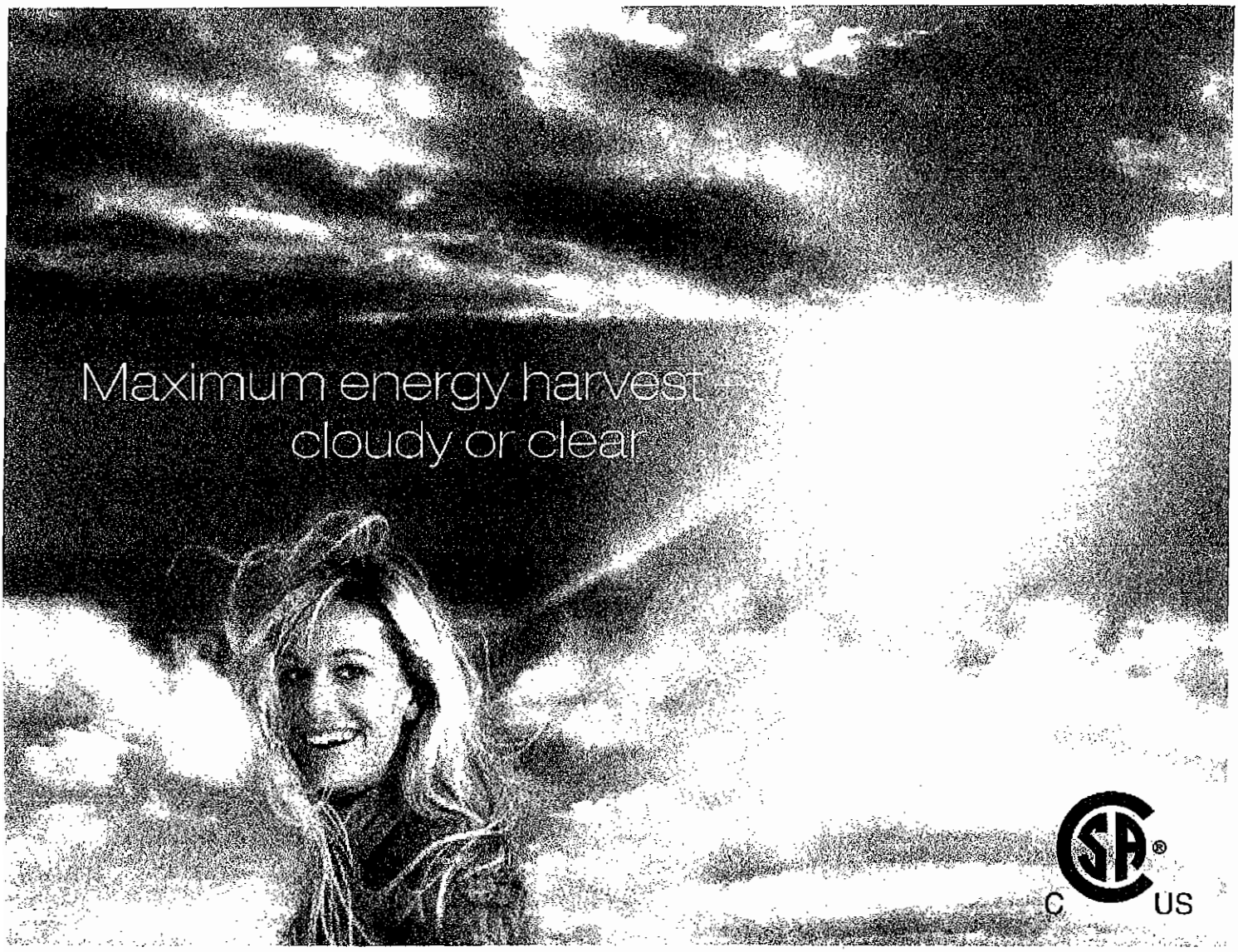
Day & Night Solar Purchase Agreement

By accepting delivery of any product delivered from Day & Night Solar, you ("Customer") agree that the following terms and conditions are the sales terms governing the sales transaction between Customer/Day & Night Solar. Any attempt to alter, supplement, modify or amend these terms and conditions by the Customer will be considered a material alteration of this agreement and, therefore, are null and void. In addition, these terms and conditions are subject to change by Day & Night Solar at any time, without prior written notice. Therefore, please check these terms and conditions carefully each time you place an order with or accept delivery of any products from Day & Night Solar.

Payment Terms on Orders

An order is not binding upon Day & Night Solar until it is accepted. Day & Night Solar must receive payment before it will accept an order unless otherwise previously agreed in writing. Payment for product(s) ordered is due prior to shipment.

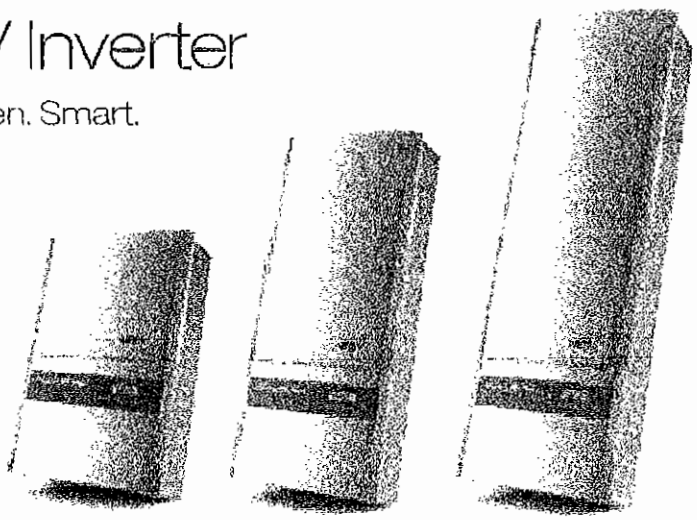

LF300W
Existing Service
277 VAC-Three Phase
AC Load
Center
*NOTES:
Inverter Outputs Will Be Evenly
Distributed Across All Three Phases.
Visual Below Shows Only Two Phase
Utilization.
DC
+
-
G
L1
L2
N
G
AC
AC
Disconnect
L1
L2
N
G
L1
L2
N
G
8x Fronius IG Plus 5.0-1 UNI
Day & Night Solar
1605 Eastport Plaza Dr.
Suite 135
Collinsville, IL 62234
CVAC Bleachers-3/26/13
Three-Line Diagram



Fronius **IG Plus** PV Inverter

The first complete solution. Reliable. Proven. Smart.

An outstanding addition to the family: The next generation Fronius IG Plus inverter builds on a successful model with multiple enhancements, including maximum power harvest, a built-in six circuit string combiner, integrated, lockable DC Disconnect, significantly improved efficiency, and unbeatable reliability. New, larger power stages expand the proven Fronius IG family from 2 to 12 kW in a single inverter.



Fronius

INPUT DATA Fronius IG Plus V	3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI	11.4-1 UNI	10.0-3 Delta	11.4-3 Delta	12.0-3 WYE277
Recommended PV-Power (kWp)	2.50 - 3.45	3.20 - 4.40	4.25 - 5.75	5.10 - 6.90	6.35 - 8.60	8.50 - 11.50	9.70 - 13.10	8.50 - 11.50	9.70 - 13.10	10.20 - 13.80
MPPT-voltage range	230 ... 500 V									
DC startup voltage	245 V									
Max. input voltage (at 1000 W/m² 14 °F (-10 °C) in open circuit operation)	600 V									
Nominal input current	8.3 A	10.5 A	13.8 A	16.5 A	20.7 A	27.6 A	31.4 A	27.6 A	31.4 A	33.1 A
Max. usable input current	14.0 A	17.8 A	23.4 A	28.1 A	35.1 A	46.7 A	53.3 A	46.7 A	53.3 A	56.1 A
Admissible conductor size (DC)	No. 14 - 6 AWG									
Number of DC input terminals	6									
Max. current per DC input terminal	20 A; Bus bar available for higher input currents									

OUTPUT DATA Fronius IG Plus V		3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI	11.4-1 UNI	10.0-3 Delta	11.4-3 Delta	12.0-3 WYE277
Nominal output power ($P_{AC\,nom}$)		3000 W	3800 W	5000 W	6000 W	7500 W	9995 W	11400 W	9995 W	11400 W	12000 W
Max. continuous output power 104 °F (40 °C) 208 V / 240 V / 277 V		3000 W	3800 W	5000 W	6000 W	7500 W	9995 W	11400 W	9995 W	11400 W	12000 W
Nominal AC output voltage		208 V / 240 V / 277 V							208 V / 240 V		277 V
Operating AC voltage range (default)	208 V	183 - 229 V (-12 / +10 %)									
	240 V	211 - 264 V (-12 / +10 %)									
	277 V	244 - 305 V (-12 / +10 %)									
Max. continuous output current	208 V	14.4 A	18.3 A	24.0 A	28.8 A	36.1 A	48.1 A	54.8 A	27.7 A*	31.6 A*	n.a.
	240 V	12.5 A	15.8 A	20.8 A	25.0 A	31.3 A	41.6 A	47.5 A	24.0 A*	27.4 A*	n.a.
	277 V	10.8 A	13.7 A	18.1 A	21.7 A	27.1 A	36.1 A	41.2 A	n.a	n.a.	14.4 A*
Number of phases		1							3		
Admissible conductor size (AC)		No. 14 - 4 AWG									
Max. continuous utility back feed current		0 A									
Nominal output frequency		60 Hz									
Operating frequency range		59.3 - 60.5 Hz									
Total harmonic distortion		< 3 %									
Power factor		1 (at nominal output power)									

GENERAL DATA Fronius IG Plus V		3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI	11.4-1 UNI	10.0-3 Delta	11.4-3 Delta	12.0-3 WYE277
Max. efficiency		96.2 %									
CEC efficiency	208 V	95.0 %	95.0 %	95.5 %	95.5 %	95.0 %	95.0 %	95.0 %	95.0 % **	95.0 %	n.a.
	240 V	95.5 %	95.5 %	95.5 %	96.0 %	95.5 %	95.5 %	95.5 %	96.0 % **	96.0 %	n.a.
	277 V	96.0 %	96.0 %	96.0 %	96.0 %	96.0 %	96.0 %	96.0 %	n.a	n.a.	96.0 %
Consumption in standby (night)		< 1.5 W									
Consumption during operation		8 W		14 W			20 W				
Cooling		Controlled forced ventilation, variable speed fan									
Enclosure type		NEMA 3R									
Unit dimensions (W x H x D)		17.1 x 26.5 x 9.9 in.		17.1 x 38.1 x 9.9 in.			17.1 x 49.7 x 9.9 in.				
Power stack weight		31 lbs. (14 kg)		57 lbs. (26 kg)			84 lbs. (38 kg)				
Wiring compartment weight		24 lbs. (11 kg)		24 lbs. (11 kg)			26 lbs. (12 kg)				
Admissible ambient operating temperature		-13 °F ... +131 °F (-25 °C ... +55 °C)									
Compliance		UL 1741-2010, IEEE 1547-2003, IEEE 1547.1, ANSI/IEEE C62.41, FCC Part 15 A & B, NEC Article 690, C22. 2 No. 107.1-01 (Sept. 2001), California Solar Initiative - Program Handbook - Appendix C: Inverter Integral 5 % Meter Performance Specification									

PROTECTION DEVICES Fronius IG Plus V	3.0-1 UNI	3.8-1 UNI	5.0-1 UNI	6.0-1 UNI	7.5-1 UNI	10.0-1 UNI	11.4-1 UNI	10.0-3 Delta	11.4-3 Delta	12.0-3 WYE277
Ground fault protection	Internal GFDI (Ground Fault Detector/Interrupter); in accordance with UL 1741-2010 and NEC Art. 690									
DC reverse polarity protection	Internal diode									
Islanding protection	Internal; in accordance with UL 1741-2010, IEEE 1547-2003 and NEC									
Over temperature	Output power derating / active cooling									

* per Phase
** preliminary

Fronius USA, LLC
10421 Citation Drive, Suite 1100
Brighton, MI 48116
E-Mail: pv-us@fronius.com
www.fronius-usa.com

40,0006,2981,AE v02 2011 as09

SHIFTING THE LIMITS

Fronius USA Premium Warranties

Fronius USA Premium Standard 10-Year Warranty

The Fronius USA Premium 10-Year Warranty applies to the following products:

- Fronius IG Series Inverters - IG 2000 / IG 2500LV / IG 3000 / IG 4000 / IG 4500LV / IG 5100
- Fronius IG Plus Series Inverters – 3.0-1_{UNI} / 3.8-1_{UNI} / 5.0-1_{UNI} / 6.0-1_{UNI} / 7.5-1_{UNI} / 10.0-1_{UNI} / 11.4-1_{UNI} / 11.4-3_{Delta} / IG 12-0-3_{WYE277}
- Fronius IG Plus V Series Inverters – 3.0-1_{UNI} / 3.8-1_{UNI} / 5.0-1_{UNI} / 6.0-1_{UNI} / 7.5-1_{UNI} / 10.0-1_{UNI} / 11.4-1_{UNI} / 10.0-3_{Delta} / 11.4-3_{Delta} /IG 12-0-3_{WYE277}
- Fronius CL Series – PV Central Inverters – CL 33.3 / CL 36.0 / CL 44.4 / CL 48.0 / CL 55.5 / CL 60.0

Fronius Premium Extended Warranties

Fronius USA Premium 5-Year Extended Warranty applies to the following products:

- Fronius IG Series Inverters - IG 2000 / IG 2500LV / IG 3000 / IG 4000 / IG 4500LV / IG 5100
- Fronius IG Plus Series Inverters – 3.0-1_{UNI} / 3.8-1_{UNI} / 5.0-1_{UNI} / 6.0-1_{UNI} / 7.5-1_{UNI} / 10.0-1_{UNI} / 11.4-1_{UNI} / 11.4-3_{Delta} / IG 12-0-3_{WYE277}
- Fronius IG Plus V Series Inverters – 3.0-1_{UNI} / 3.8-1_{UNI} / 5.0-1_{UNI} / 6.0-1_{UNI} / 7.5-1_{UNI} / 10.0-1_{UNI} / 11.4-1_{UNI} / 10.0-3_{Delta} / 11.4-3_{Delta} /IG 12-0-3_{WYE277}

Fronius USA Premium 10-Year Extended Warranty applies to the following products:

- Fronius IG Series Inverters - IG 2000 / IG 2500LV / IG 3000 / IG 4000 / IG 4500LV / IG 5100
- Fronius IG Plus Series Inverters – 3.0-1_{UNI} / 3.8-1_{UNI} / 5.0-1_{UNI} / 6.0-1_{UNI} / 7.5-1_{UNI} / 10.0-1_{UNI} / 11.4-1_{UNI} / 11.4-3_{Delta} / IG 12-0-3_{WYE277}
- Fronius IG Plus V Series Inverters – 3.0-1_{UNI} / 3.8-1_{UNI} / 5.0-1_{UNI} / 6.0-1_{UNI} / 7.5-1_{UNI} / 10.0-1_{UNI} / 1.4-1_{UNI} / 10.0-3_{Delta} / 11.4-3_{Delta} /IG 12-0-3_{WYE277}
- Fronius CL Series – PV Central Inverters – CL 33.3 / CL 36.0 / CL 44.4 / CL 48.0 / CL 55.5 / CL 60.0

Please contact your Fronius Authorized Distributor or Integrator. The purchase the Fronius Premium 5 or 10-Year Warranty Extension must be done through your Solar Dealer or Installer whom will forward the details to the Fronius Authorized Distributor or directly to Fronius if they are a direct account of Fronius. See the **Fronius USA 5-Year and 10-Year Warranty Extension** document for further details. You can download this document from www.fronius-usa.com.

SHIFTING THE LIMITS

Fronius Warranty Conditions

The **Fronius Premium 10-Year Warranty** comes standard on the solar inverter models shipped from Fronius in the models listed above. Fronius warranties offer the straight forward protection and support that Fronius customers have come to expect from an industry leader.

The Fronius 5-Year and 10-Year Extended Warranties are available for purchase, for a nominal investment to increase the Fronius inverter warranty to 15 or 20 years. Please contact your supplier to purchase a Fronius Extended Warranty.

At Fronius, we have been designing and manufacturing high quality power electronics equipment for over 65 years. And all our production facilities are ISO 9001 certified. You will probably not encounter any service-related issues with your FRONIUS Solar Inverter (IG, IG Plus, IG Plus V and CL models). However, in the unlikely event that you discover a problem within your warranty term caused by defects in either workmanship or materials, we will see that it is either repaired or replaced. Repair or replacement depends on Fronius's evaluation of the issue and what we decide makes the most sense according to the situation. The warranty is based on the inverter's serial number, allowing the warranty to be transferred to another owner if the FRONIUS Solar Inverter remains installed in the original installation location. As the warranty is tied to the serial number, there is no paperwork to transfer the warranty to a new owner.

The FRONIUS Solar Inverters are designed to withstand normal operating conditions and typical wear and tear when the FRONIUS Solar Inverter is used for its original intent, in compliance with the local electrical codes, the FRONIUS Installation and Operational Manual(s) supplied with the original equipment. This warranty does not cover damages by improper installation or operation, misuse, abuse, manipulation, alterations or repair attempts, accidents, fire, floods, force Majeure, and incidental or consequential damage caused by defects with other components of the solar system. This warranty does not extend beyond the original cost of the FRONIUS Solar Inverter.

Any Fronius inverter that requires a warranty replacement within 180 days of shipping from Fronius, typically at least 90 days from the inverter and system commissioning, will be replaced by Fronius with a brand new inverter as standard policy.

Fronius service process for warranty returns and repairs:

- **Obtain a Returned Merchandise Authorization (RMA)**
  - ✓ All returned FRONIUS Solar Inverters require an RMA.
  - ✓ Call Fronius USA Technical Support at 810-220-4414 to obtain an RMA.
    - Technical Support is available Monday through Friday, excluding holidays, from 6:00 am to 6:00 pm P.S.T., and weekends by appointment only.

NOTE: ***There is no paperwork involved on the part of the installer to obtain an RMA as all information required will be obtained during the phone call.***

- **Steps and information required for the RMA application:**

  ✓ Contact with a Fronius Technical Support Representative at 810-220-4414 to evaluate and troubleshoot the issue **while the inverter is in the field**, as many problems can be resolved on site.

✓ If troubleshooting does not fix the problem, the following information will be required by the Technical Support Representative for the RMA application. The representative will collect this information over the phone:

1. Model and Serial Number of the FRONIUS Solar Inverter.
2. Detailed description of the problem including the Inverter's diagnostic code(s).
3. Shipping address for the warranty replacement equipment.
4. When the replacement inverter will be required.

Note: Failure to contact Fronius Technical support in advance of conducting service on any Fronius product will result in no service compensation being paid.

- **Once the RMA has been issued:**

✓ Fronius USA will ship a replacement inverter or part ahead to the installer and every reasonable effort will be made to ship the replacement within the specified time as per point #4 above. Fronius will prepay the shipping costs.

✓ When the replacement inverter or part arrives and is installed, the installer simply places the defective item into the box from the replacement item.

- Apply the included UPS call tag to the box and call UPS.
- The defective inverter must be returned to Fronius USA within 14 days of receiving the replacement unit or a charge may be applied for the replacement. No service reimbursement will be issued until the product is returned.
- All FRONIUS Solar Inverters authorized for return by Fronius USA must be returned in its original shipping container or packaging providing equal protection.

Warranty period for any repaired or replaced inverter: 12 months after shipment from Fronius USA or the original remaining warranty period, whichever is greater.

Service reimbursement: Fronius offers a service reimbursement amount of $250.00 per qualifying RMA.

Damage caused by shipping or mishandling: Visually evident damage caused by shipping or mishandling is to be reported to the freight carrier within 24 hours. Shipping damage is the responsibility of the freight carrier, not Fronius, and should always be duly noted with the freight carrier prior to accepting and signing for the product.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. Fronius USA, LLC General Terms and Conditions also apply.

Additional Information: Contact your local Solar Dealer, Fronius Distribution Partner, or Fronius for additional information on the Fronius 10-Year Premium Warranty. Additional resources may also be found on the Fronius USA Solar web site www.fronius-usa.com, including information on service assistance, online training, accessories, product information, or product manuals.

You may also contact Fronius Directly: Fronius Technical Support is available 6am to 6pm (P.S.T.) Monday through Friday excluding holidays and weekends by appointment only at 810-220-4414.

Fronius USA, LLC
10421 Citation Drive, Ste. 1100
Brighton, MI 48116
Ph. 810-220-4414
E-Mail: pv-support-usa@fronius.com
www.fronius.com

LIFELINE ENERGY

www.lifelinesolar.com

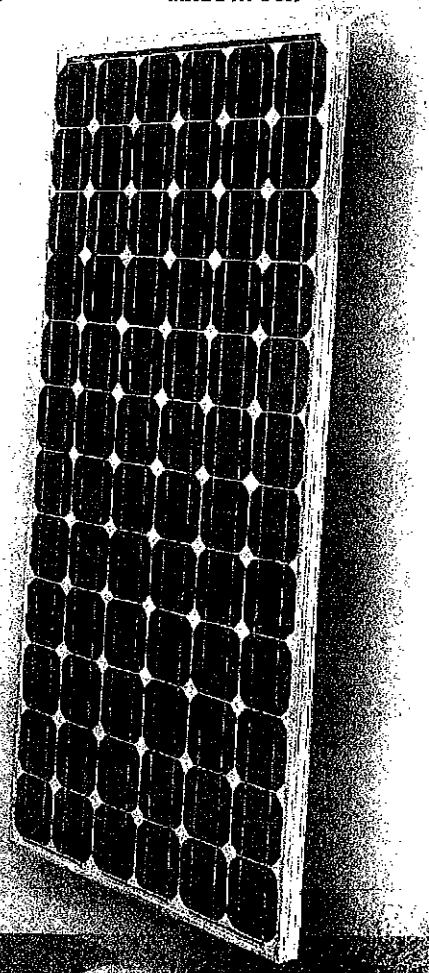
Leading edge solar and self generation energy solutions.

Product Overview

LF280WP-M – LF300WP-M

Highest Efficiency Monocrystalline Photovoltaic Module

MADE IN USA



Features

- High module efficiency (up to 18.1%) and stable power output based on leading process technology
- Outstanding electrical performance under high-temperature conditions or low-irradiance conditions
- Ease of installation and all-weather applications due to our innovative engineering design for size and weight
- Engineering innovation that creates an unmatched balance of power and performance

Applications

Lifeline panels are ideal for grid tie applications

- Residential roof top systems
- Large commercial grid tie systems
- Public & industrial applications
- Water pumping systems
- Ground mounted solar arrays

**Go Solar California SB1 Compliance Photovoltaic Modules*
***Certified in accordance with the Florida Solar Energy Center*

Quality and Warranty

- High average cell efficiency up to 18.1%
- Peak power of single module is guaranteed in ±3% power tolerance
- Average power of modules in single order is guaranteed not less than the peak power

Meets all "Made in the U.S.A." requirements

- Meets the requirements of Quality Management System (ISO 9001) and Environmental Management System (ISO 14001)
- 25 year power output warranty *(Refer to warranty issued by Lifeline Energy)*

Lifeline Energy, USA

2150 Town Square Place, Suite 200 // Sugar Land, TX 77479 [office] **713.266.9216** [fax] **713.266.6425**

LIFELINE ENERGY

www.lifelinesolar.com

Leading edge solar and self generation energy solutions.

Product Overview

LF280WP-M – LF300WP-M// Specifications and Performance

NEC 2008 Compliant Module Output Cables Now 12AWG with Locking Connectors

Electrical Data

STC: 1000W/m², AM1.5 and 25°C cell temperature; NOCT: Nominal Operating Cell Temperature

Module Type	Unit	LF280WP-M	LF285WP-M	LF290WP-M	LF295WP-M	LF300WP-M
Maximum Power (Pmax)	W	280	285	290	295	300
Power Tolerance	%	(0, +5)	(0, +5)	(0, +5)	(0, +5)	(0, +5)
Open Circuit Voltage	V	44.8	44.9	45.0	45.2	45.3
Short Circuit Current (Isc)	A	8.33	8.58	8.68	8.78	8.88
Maximum Power Voltage (Vmp)	V	35.2	35.6	35.7	35.9	36.0
Maximum Power Current (Imp)	A	7.95	8.03	8.13	8.23	8.33
Cell Efficiency (ηc)	%	16.8 ~ 17.1	17.1 ~ 17.4	17.4 ~ 17.7	17.7 ~ 18.0	18.0 ~ 18.3
Cell Technology		156mm×156mm Monocrystalline Silicon; 72pcs (6×12)				
Pmax Temperature Coefficient	%/°C	-0.40				
Voc Temperature Coefficient	%/°C	-0.32				
Isc Temperature Coefficient	%/°C	+0.04				
Maximum System Voltage	VDC	1000 (TUV); 600 (UL)				
Maximum Series Fuse Rating	A	13				
Operating Temperature	°C	-40 ~ +85				
NOCT	°C	45±2				

Mechanical Data

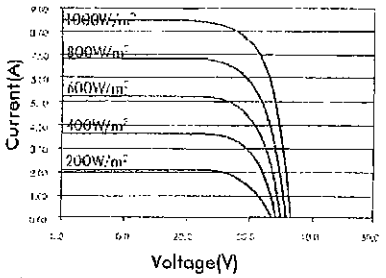
Specifications are subject to change without further notice

Dimension	1956 x 992 x 50 mm (77.0 x 39.1 2.0 inch)
Weight	24 kg (52.7 lbs.)
Cable Length	900 mm (35.4 inch)
Bypass Diodes	3pcs
Junction Box	IP65 rated
Front Glass	3.2 mm (0.1 inch) tempered low-iron glass
Frame	Anodized aluminum alloy

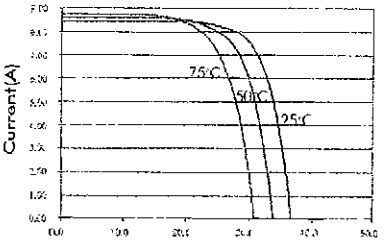
Warranties

25 years limited warranty for minimum power output (refer to warranty issued by Lifeline Energy)

I-V Curves



I-V Curves of PV Module LF300WP-M (Cell Temp. 25°C)

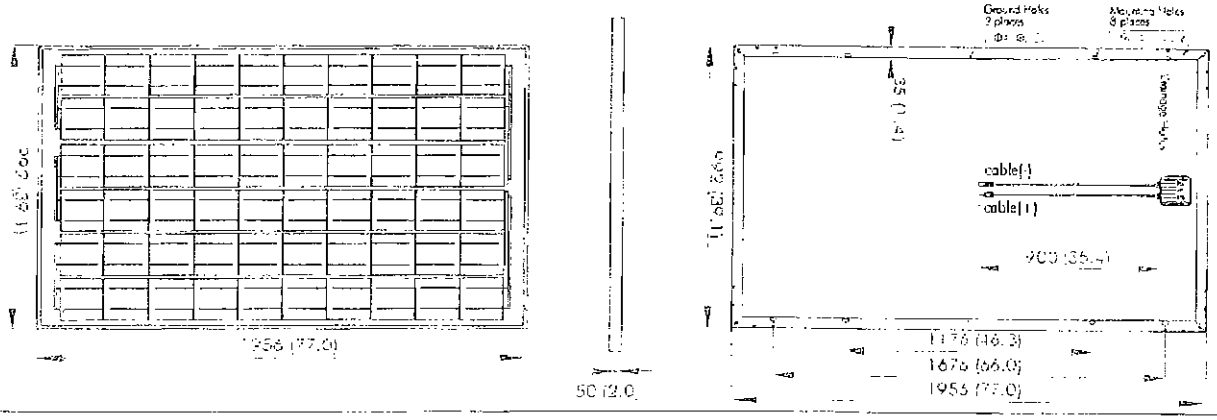


I-V Curves of PV Module LF300WP-M at different cell temperatures (AM1.5, 1000W/m²)

Exploded View

1. Tempered Glass
2. EVA (Ethylene Vinyl Acetate)
3. Solar Cells
4. EVA (Ethylene Vinyl Acetate)
5. Backsheet

Physical Characteristics // Unit: mm (inch)



Lifeline Energy, USA

2150 Town Square Place, Suite 200 // Sugar Land, TX 77479

[office] **713.266.9216** – [fax] **713.266.6425**

LIFELINE ENERGY

PHOTOVOLTAIC MODULE LIMITED WARRANTY

Limited Product Warranty – Five Year Repair, Replacement Remedy

Lifeline Energy (Lifeline) warrants its modules including DC connector cable assemblies to be free from defects in workmanship and materials under normal application, use and installation and service conditions for a period of five (5) years from the date of manufacture. If a module malfunctions or becomes inoperable due to a defect in workmanship or material during the five-year period of this warranty, Lifeline will, at its option, either repair or replace the module. The repair, replacement remedy shall be the sole and exclusive remedy provided under this Limited Warranty.

Limited Minimum Pmax Warranty and Limited Remedy

A. "Minimum Pmax" is the minimum power in peak watts that a Photovoltaic Module generates as stated on the module rating label. "Standard Test Conditions" are as follows: [a] light spectrum of AM 1.5, [b] an irradiation of 1,000 Watts per square meter and [c] temperature of 25 degrees Centigrade. The measurements are carried out in accordance with UL1703 as tested at the junction box terminals per the calibration and testing standards of Lifeline in effect on the date of manufacture of the modules. Lifeline's calibration standards shall be in compliance with then-current standards applied by international institutions accredited for this purpose.

B. 12 years

Lifeline additionally warrants for the modules that:

If, within twelve (12) years from the date of manufacture, any Photovoltaic Module exhibits a power output less than 90% of the minimum Pmax at Standard Test Conditions as specified on the manufacturer's Product Information Label affixed to each Photovoltaic Module, provided that such loss in power is determined by Lifeline (at its sole and absolute discretion) to be due to defects in material or workmanship, Lifeline will, at its sole option, either (1) replace such loss in power by providing to the Customer additional modules to make up such loss in power; (2) repair or replace the defective modules. (including free shipping to the Customer, costs for installation excluded.)

C. 25 years

Lifeline further warrants that:

If, within a period of twenty-five (25) years from date of manufacture any Photovoltaic Module exhibits a power output less than 80% of the minimum Pmax at Standard Test Conditions, provided that such loss in power is determined by Lifeline (at its sole and absolute discretion) to be due to defects in material or workmanship, Lifeline will, at its sole option, either (1) replace such loss in power by providing to the end-user Customer additional modules to make up such loss in power; (2) repair or replace the defective modules. (including free shipping to the Customer, costs for installation excluded.) These remedies set forth in this Section 2 are the sole and exclusive remedies provided under the Limited minimum Pmax Warranty.

Exclusions and Limitations

A. Warranty claims must be filed in writing with Lifeline or its authorized distributors within the applicable warranty period, without exception

B. These Limited Warranties do not apply to normal wear and tear, to the natural effects of exposure to weather conditions over time, or to modules which in Lifeline's sole judgment have been subjected to:

misuse, abuse, neglect, vandalism or accident; alteration, improper installation or application that does not strictly follow the manufacturer's instructions; repair or modifications that do not strictly follow the manufacturer's instructions; or power failure, electrical spikes or surges, lighting, flood, fire, accidental breakage or other events outside Lifeline's control.

C. These Limited Warranties only cover the transportation costs for shipment of any repaired or replaced Modules to the applicable location, not including the transportation cost for return the modules to Lifeline or its agent, or costs associated with installation, removal or reinstallation of the modules, which shall be borne by the end user Customers.

D. Warranty claims will not be honored if the type or serial number of the PV Modules have been altered, removed or made illegible without written authorization from Lifeline.

Limitation of Warranty Scope

The limited warranties set forth herein are expressly in lieu of and exclude all other expressed or implied warranties, including but not limited to warranties of merchantability, warranties of fitness for particular purpose, use, or application, warranties of non-infringement of third party rights, including, but not limited to, intellectual property rights, and all other obligations or liabilities on the part of Lifeline unless such other warranties, obligations or liabilities are expressly agreed to in writing signed and approved by Lifeline's Chief Executive Officer. Unless prohibited by local laws or regulations, Lifeline shall have no responsibility or liability whatsoever for damage or injury to persons or property, or for other loss or injury resulting from any cause whatsoever arising out of or related to the product, including, without limitation, any defects in the module, or from use or installation. Under no circumstances shall Lifeline be liable for incidental, consequential or special damages, however caused, even if Lifeline is provided prior notice of such damages. Loss of use, loss of profits, loss of production, loss of revenues are therefore specifically but without limitation excluded.

Lifeline's aggregate liability, if any, in damages or otherwise, shall not exceed the invoice value as paid by the end user CUSTOMER, for the unit of product or service furnished or to be furnished, as the case may be, which is the subject of claim or dispute.

Obtaining Warranty Performance

In order to obtain warranty service under the Lifeline Limited Warranty, the end user Customer should promptly notify Lifeline regional customer service center. Together with the notification, the Customer should include the complete serial number printed on the module label and the date of manufacture printed on the label. If Lifeline wants the modules returned for inspection, repair or replacement, it will give the customer a Return Merchandise Authorization (RMA). Lifeline will not accept the return of any modules without a RMA.

Disputes

No action, regardless of form, arising out of or in any way connected with this Limited Warranty, may be brought by the end user Customer more than one (1) year after the cause of action has occurred.

Various

The repair or replacement of the PV Modules or the supply of additional PV-modules does not cause the beginning of new warranty terms, nor shall the original terms of this Limited Warranty be extended. Any replaced PV Modules shall become the property of Lifeline. Lifeline has the right to deliver another type of PV Modules (different in size, color, shape, or power), either brand new or previously used in Lifeline's sole discretion, in the case that Lifeline has discontinued producing the PV module in question at the time of the claim.

Force Majeure

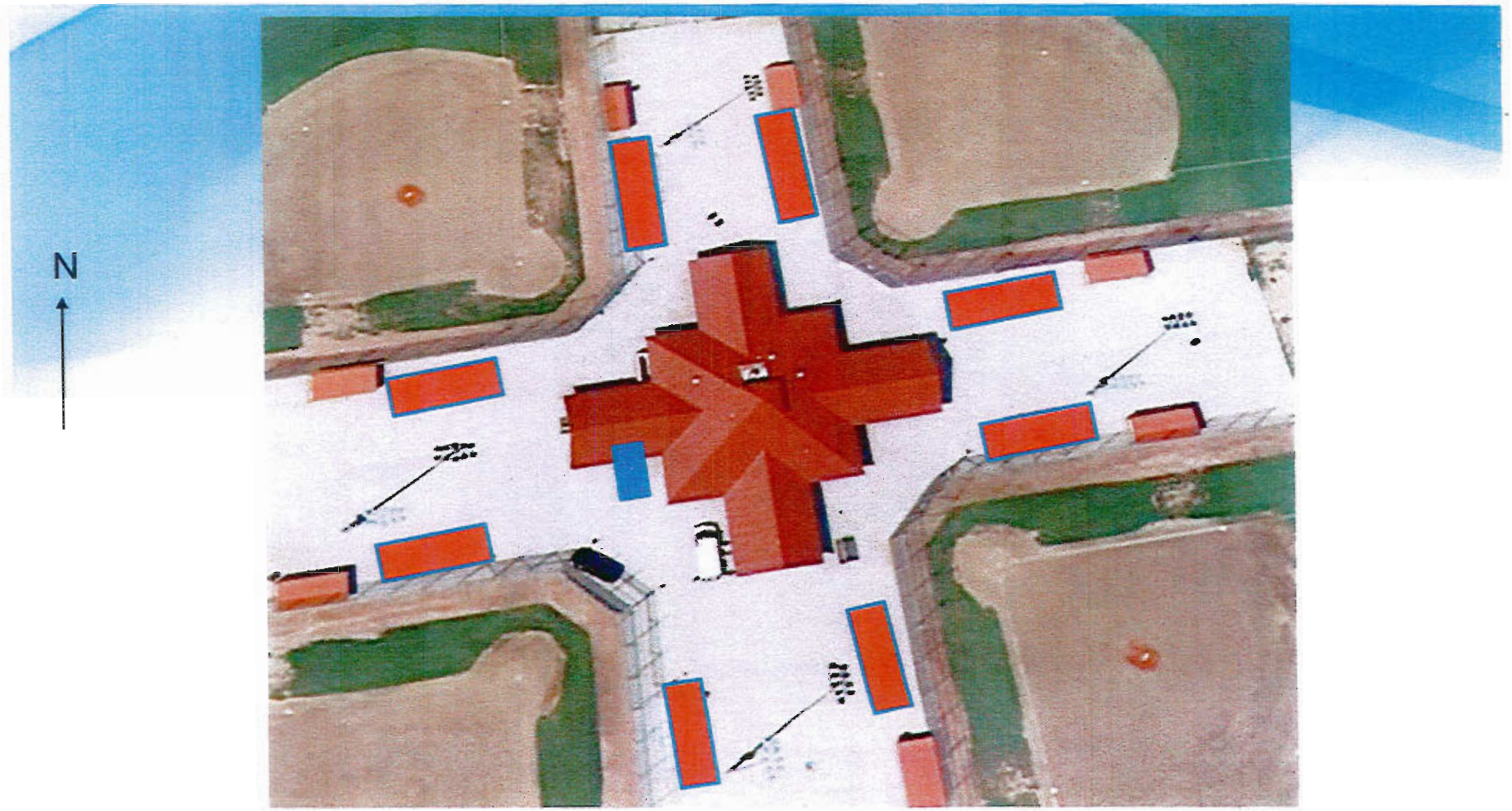
Lifeline shall not be in any way be responsible or liable to the end user Customer or any third-party arising out of any non-performance or delay in performance of any terms and conditions of sale, including this Limited Warranty, due to acts of God, acts of terrorists, war, riots, strikes, unavailability of suitable and sufficient labor or material.

2150 Town Square Place, Suite 200 // Sugar Land, TX 77479USA
Tel: 713.266.9216 // Fax: 713.266.6425

Day & Night Solar
1605 Eastport Plaza Drive, Suite 135
Collinsville, IL 62234
Phone: 618-344-4001
Fax: 618-344-4085

Chesterfield Valley Athletic Complex
17501 - 17625 North Outer 40 Road
Chesterfield MO 63005

Notes: New facility to be built to the east of existing complex
Buildings numbered, Quads lettered



Chesterfield Valley Athletic Complex
Building 5 - 17891 North Outer Forty Rd
Chesterfield MO 63005

Notes: Canopies to be built over the 8 sets of bleachers pictured here. This is Building # 5 from the previous slide.

Please sign

Prepared: 2/12/2013

Day & Night Solar

LIFELINE ENERGY

www.lifelinesolar.com

Leading edge solar and self generation energy solutions.

Product Overview

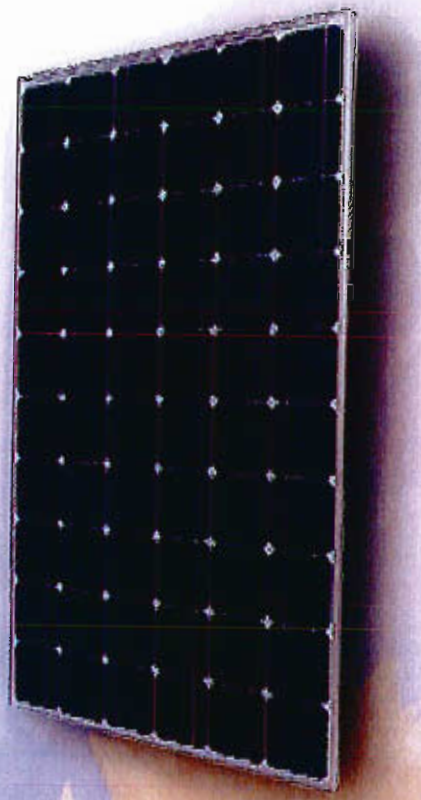
LF235WP-US – LF250WP-US

High-Efficiency Monocrystalline Photovoltaic Module

MADE IN USA

Features

- High module efficiency and stable power output based on leading process technology
- Outstanding electrical performance under high-temperature conditions or low-irradiance conditions
- Engineering innovation that creates an unmatched balance of power and performance
- Ease of installation and all-weather applications due to our innovative engineering design for size and weight
- Withstands high wind-pressure and loads
- Handles 1" diameter hail crystals



Applications

Lifeline panels are ideal for grid tie applications

- Residential roof top systems
- Large commercial grid tie systems
- Public & industrial applications
- Water pumping systems
- Ground mounted solar arrays

**Go Solar California SB1 Compliance Photovoltaic Modules*
***Certified in accordance with the Florida Solar Energy Center*

CE UL

Quality and Warranty

- High average cell efficiency of 17.5%
- Peak power of single module is guaranteed in ±3% power tolerance
- Average power of modules in single order is guaranteed not less than the peak power

Meets all "Made in the U.S.A." requirements

- ETL approved under UL-1703 standard
- Modules are fire rated: Class C
- Modules are listed under CEC 300-2008
- 25 year power output warranty @ 80%
  (Refer to warranty issued by Lifeline Energy)

Lifeline Energy, USA

2150 Town Square Place, Suite 200 // Sugar Land, TX 77479 [office] **713.266.9216** [fax] **713.266.6425**

LIFELINE ENERGY

www.lifelinesolar.com

Leading edge solar and self generation energy solutions.

Product Overview

LF235WP-US – LF250WP-US // Specifications and Performance

Module Output Cables Now Compliant with 12AWG with Locking Connectors

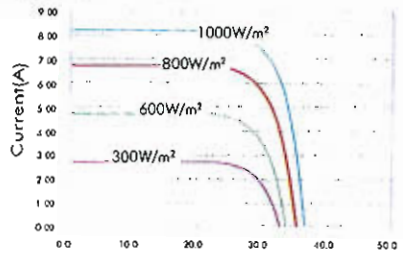
Electrical Data

STC: 1000W/m², AM=1.5 and 25°C cell temperature; NOCT: Nominal Operating Cell Temperature

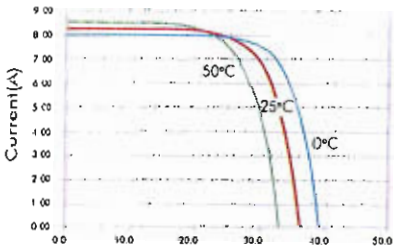
Module Type	Unit	LF235WP-U	LF240WP-U	LF245WP-U	LF250WP-U
Maximum Power (Pmax)	W	235	240	245	250
Power Tolerance	%	(0, +3)	(0, +3)	(0, +3)	(0, +3)
Open Circuit Voltage	V	37.0	37.1	37.2	37.3
Short Circuit Current (Isc)	A	8.54	8.58	8.62	8.66
Maximum Power Voltage (Vmp)	V	29.3	29.7	30.2	30.7
Maximum Power Current (Imp)	A	8.02	8.07	8.10	8.15
Cell Efficiency (ηc)	%	17.4	17.5	17.6	17.8
Module Efficiency	%	14.4	14.7	15.0	15.3
Cell Technology		156mm×156mm Monocrystalline Silicon; 60pcs (6×10)			
Pmax Temperature Coefficient	%/°C	-0.48			
Voc Temperature Coefficient	%/°C	-0.37			
Isc Temperature Coefficient	%/°C	+0.09			
Maximum System Voltage	VDC	600 (UL)			
Operating Temperature	°C	-40°C ~ +90°C			
NOCT	°C	50			

*Deviation of Vm(V), Im(A), Voc(V) and Isc(A) of ±10%

I-V Curves



I-V Curves of PV Module LF235WP-U (Cell Temp. 25°C)



I-V Curves of PV Module LF235WP-U at different cell temperatures (AM1.5, 1000W/m²)

Mechanical Data

*Specifications are subject to change without further notice

Dimension	1652 x 990 x 50 mm (65 x 39 x 2 in)
Weight	24 kg (53.0 lbs.)
Output Cables	1m cable (39 3/8 in), 12 AWG, UL approved
Diode	15A
Junction Box	MIM Slim, IP-65 rated, UL approved
Connectors	MC-4, IP-67, UL approved
Encapsulation Material	EVA (0.46 thickness)
Back Foil	Black or White (UV protected)
Front Glass	4 mm tempered low-iron gloss
Frame	Anodized aluminum alloy type 6063-T5

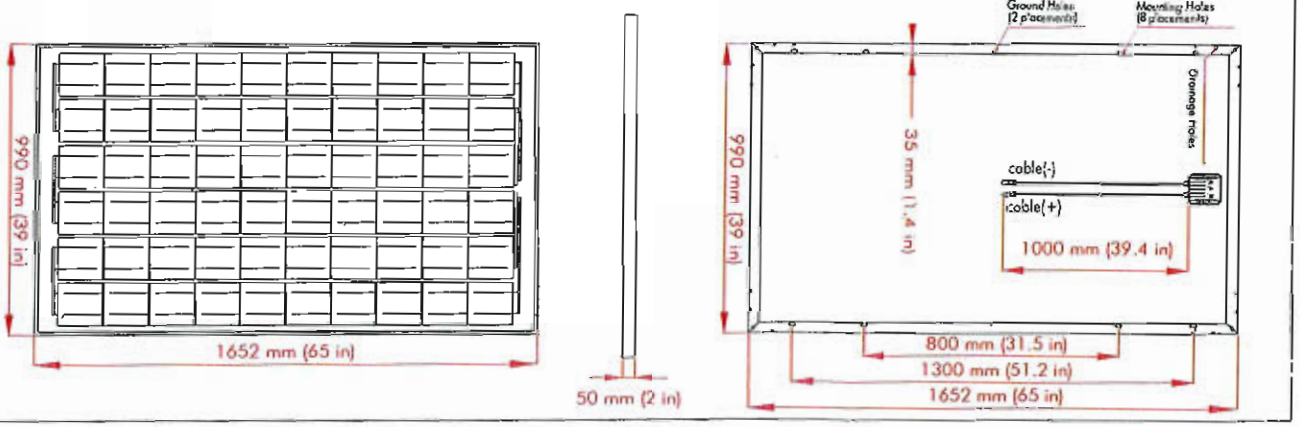
Warranty Information

5-years: Product Warranty

10-years: Performance Warranty at 90% Power Output

25-years: Performance Warranty at 80% Power Output

Physical Characteristics // Unit: mm (inch)



Lifeline Energy, USA

2150 Town Square Place, Suite 200 // Sugar Land, TX 77479

[office] **713.266.9216** [fax] **713.266.6425**

Mike Geisel

From:	Patrick Murphy <patrick@dayandnightsolar.com>
Sent:	Tuesday, March 12, 2013 12:05 PM
To:	Mike Geisel; Thomas McCarthy
Cc:	bob@dayandnightsolar.com; Melinda Kershaw
Subject:	Follow up - Day & Night Solar
Attachments:	Lifeline-Energy-230-250W-PV-Modules.pdf; Lifeline-Energy-280-300W-PV-Modules.pdf; LLE-WarrantyCertificate.pdf; Term Sheet - City of Chesterfield.docx; Term Sheet - City of Chesterfield.pdf; Growatt-3600MTL-5000MTL.pdf; Growatt-Web-Monitoring.pdf; Ameren MO Interconnection and Net Metering Application 11-30-2012.pdf; Copy of 2012 Utility Invoices - Existing Facilities.xlsx

Mike / Tom – thanks as always for your time and interest. Following are comments on items discussed at today's meeting:

- **Canopy Dimensions:** The canopy we are proposing consists of 18 panels of 250 watts each with 2 strings of 9 panels. The structure is 360" by 130", or 30' by 10.83'. The height is 11'6".

- **Electricity Production and Savings:** 4.5kW per canopy and 36kW in total. Estimated to produce 43,257kWh annually. At an average cost of $0.11 / kWh, the energy savings would be $4,758 annually. The system will generate 43 solar renewable energy credits, which Ameren will buy at $5 each per year for 10 years, providing another $215 / year in cash flow to the City. We may have a broker that will buy the SREC's at a higher price, but the capacity is limited, so we will have to revisit this after installation. As discussed, the rebate from Ameren, if approved prior to commencement of the project, will be $2 / watt up to 25kW, or $50,000 for this project.

- **Canopy Design:** We will review options to ensure no wires are exposed underneath the canopies. Regardless of the outcome of the testing perhaps early next week, we also will continue investigating costs / options / potential maintenance expense / production impact for a system to protect each canopy from baseballs.

- **Product Specs:** Attached are product specs and warranty information for Lifeline 250watt and 300watt panels and for Growatt inverters and web monitoring (we also will provide detailed warranty information from Growatt).

- **Next Steps:**

    - Bleacher Canopies: I'll work with Tom to arrange a time for a field test on a panel. Before / after that, we are happy to answer any questions you may have. When you are ready, please sign Sheet 18 and Sheet 20 of the attached Ameren Interconnection Application and I will pick up the signed copies – Ameren requires a wet signature. We will complete the balance of the application and return a completed copy to you.

    - Other Applications: Attached is the Term Sheet we discussed this morning for the City's other meters. I am attaching this in PDF and Word in the event you wanted to use the document to make notes. I'm also attaching the original XLS file that was sent to us (and subsequently altered with summary information, pictures, etc.). As was the case with the bleacher and Public Works canopies, the first step is to identify by location which application would be your

preference – roof mount, canopy, ground mount, tracker, and then we will investigate each site further to assess feasibility and cost.

Please let me know if any questions on any of the above or anything that has been omitted.

Best,

Pat

Patrick Murphy, CFA
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Mike Geisel

From:	Thomas McCarthy
Sent:	Monday, March 18, 2013 1:38 PM
To:	Mike Geisel
Subject:	FW:
Attachments:	photo.JPG; ATT00001.txt

Baseball meets solar panel at 60 miles an hour head on. The netting is required

-----Original Message-----
From: Tom Mccarthy [mailto:tjrmccarthy@sbcglobal.net]
Sent: Monday, March 18, 2013 1:33 PM
To: Thomas McCarthy
Subject: