



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at [wvOASIS.gov](http://wvOASIS.gov). As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at [WVPurchasing.gov](http://WVPurchasing.gov) with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

## Header 8

[List View](#)

## General Information

[Contact](#)[Default Values](#)[Discount](#)[Document Information](#)

Procurement Folder: 740703

Procurement Type: Central Master Agreement

Vendor ID: 000000180992

Legal Name: DIMENSIONAL PRODUCTS INC

Alias/DBA:

Total Bid: \$66,405.00

Response Date: 08/12/2020

Response Time: 11:19

SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2100000005

Published Date: 8/3/20

Close Date: 8/12/20

Close Time: 13:30

Status: Closed

Solicitation Description: ADDENDUM 2 TRAILER MTD.  
SOLAR POWERED ARROW

Total of Header Attachments: 8

Total of All Attachments: 8



Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Trailer mounted solar powered arrow boards	15.00000	EA	\$4,427.000000	\$66,405.00

Comm Code	Manufacturer	Specification	Model #
46161520			

<b>Extended Description :</b>	Trailer Mounted Solar Powered Arrow Boards
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Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Request for Quotation  
 31 - Public Safety

Proc Folder: 740703

Doc Description: TRAILER MTD. SOLAR POWERED ARROW BOARDS-7020EC13

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-20	2020-08-12 13:30:00	CRFQ 0803 DOT2100000005	1

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

Vendor Name, Address and Telephone Number:  
 Dimensional Products Inc.  
 2601 Emory Rd., Building #7  
 Finksburg, MD 21048

**FOR INFORMATION CONTACT THE BUYER**

Crystal G Hustead  
 (304) 558-2402  
 crystal.g.hustead@wv.gov

Signature X

FEIN # 37-1383283

DATE 8/11/2020

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION:**

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS TO ESTABLISH AN OPEN-END CONTRACT FOR TRAILER MOUNTED SOLAR POWERED ARROW BOARDS PER THE ATTACHED DOCUMENTS.

\*\*\*QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE CONTAINED IN THE INSTRUCTIONS TO VENDORS SUBMITTING BIDS\*\*\*

INVOICE TO	SHIP TO
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV26201 US	DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Trailer mounted solar powered arrow boards	15.00000	EA	\$4427.00	\$66405.00

Comm Code	Manufacturer	Specification	Model #
46161520	Solar Technology, Inc.	48"x96" 15-LED Lamp Arrow Board Trailer	AB-0515

**Extended Description :**

Trailer Mounted Solar Powered Arrow Boards

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	MANDATORY PRE-BID MEETING	2020-07-28
2	VENDOR QUESTION DEADLINE	2020-07-31

## INSTRUCTIONS TO VENDORS SUBMITTING BIDS

**1. REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

**2. MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

**3. PREBID MEETING:** The item identified below shall apply to this Solicitation.

A pre-bid meeting will not be held prior to bid opening

A **MANDATORY PRE-BID** meeting will be held at the following place and time:

Date and Time: July 28, 2020 at 10:00 AM

Location:

WV DOH Equipment Division Conference Room  
83 Brushy Fork Road Crossing  
Buckhannon, WV 26201

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting  
Revised 01/09/2020

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

**4. VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: July 31, 2020 at 10:00 AM

Submit Questions to: Crystal Husted  
2019 Washington Street, East  
Charleston, WV 25305  
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)  
Email: [Crystal.G.Husted@wv.gov](mailto:Crystal.G.Husted@wv.gov)

**5. VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

**6. BID SUBMISSION:** All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:  
Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

**SEALED BID:**  
BUYER: Crystal Husted  
SOLICITATION NO.: CRFQ DOT2100000005  
BID OPENING DATE: August 12, 2020  
BID OPENING TIME: 1:30 PM  
FAX NUMBER: 304-558-3970

Revised 01/09/2020

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression or Interest or Request for Proposal is not permitted in wvOASIS.

**For Request For Proposal ("RFP") Responses Only:** In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus       n/a       convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: (This only applies to CRFP)

Technical

Cost

**7. BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: August 12, 2020 at 1:30 PM

Bid Opening Location: Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

**8. ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

**9. BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

**10. ALTERNATE MODEL OR BRAND:** Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the

equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

**11. EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

**12. COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

**13. REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

**14. UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

**15. PREFERENCE:** Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:

<http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

**15A. RECIPROCAL PREFERENCE:** The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: <http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

**16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or

minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

**17. WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

**18. ELECTRONIC FILE ACCESS RESTRICTIONS:** Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

**19. NON-RESPONSIBLE:** The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance.”

**20. ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b.”

**21. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor’s entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled “confidential,” “proprietary,” “trade secret,” “private,” or labeled with any other claim against public disclosure of the documents, to include any “trade secrets” as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**22. INTERESTED PARTY DISCLOSURE:** West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least \$1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

**23. WITH THE BID REQUIREMENTS:** In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

## GENERAL TERMS AND CONDITIONS:

**1. CONTRACTUAL AGREEMENT:** Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

**2. DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

**2.1. "Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

**2.2. "Bid" or "Proposal"** means the vendors submitted response to this solicitation.

**2.3. "Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

**2.4. "Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

**2.5. "Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

**2.6. "Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

**2.7. "Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

**2.8. "State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

**2.9. "Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

**3. CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

**Term Contract**

**Initial Contract Term:** This Contract becomes effective on Award \_\_\_\_\_ and extends for a period of One (1) year(s).

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to Three (3) successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Alternate Renewal Term** – This contract may be renewed for \_\_\_\_\_ successive \_\_\_\_\_ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

**Delivery Order Limitations:** In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

**Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within \_\_\_\_\_ days.

**Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within \_\_\_\_\_ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for \_\_\_\_\_ year(s) thereafter.

**One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

**Other:** See attached.

**4. NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.

**5. QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

**Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

**Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

**Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

**One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

**6. EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

**7. REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

**BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

**PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

**LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

**MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

**LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

**8. INSURANCE:** The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

**Commercial General Liability Insurance** in at least an amount of: \$1,000,000.00--\*\*See Below per occurrence.

**Automobile Liability Insurance** in at least an amount of: \$1,000,000.00 per occurrence.

**Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: \_\_\_\_\_ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

**Commercial Crime and Third Party Fidelity Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Cyber Liability Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

**Pollution Insurance** in an amount of: \_\_\_\_\_ per occurrence.

**Aircraft Liability** in an amount of: \_\_\_\_\_ per occurrence.

**\*\*\*Please make insurance certificate to read as follows:  
State of WV, 1900 Kanawha Blvd E, Bldg 5, Charleston, WV 25305**

**\*\*\*State of WV must be listed as additional insured.**

Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

**9. WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

**10. [Reserved]**

**11. LIQUIDATED DAMAGES:** This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

\_\_\_\_\_ for \_\_\_\_\_

Liquidated Damages Contained in the Specifications

**12. ACCEPTANCE:** Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

**13. PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

**14. PAYMENT IN ARREARS:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

**15. PAYMENT METHODS:** Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

**16. TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

**17. ADDITIONAL FEES:** Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

**18. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

**19. CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

**20. TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.

**21. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.

**22. COMPLIANCE WITH LAWS:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**23. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

**24. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

**25. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

**26. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

**27. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

**28. WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

**29. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

**30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.

**31. YOUR SUBMISSION IS A PUBLIC DOCUMENT:** Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

**DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.**

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

**32. LICENSING:** In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

**SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

**33. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

**34. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

**35. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

**36. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

**37. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

**38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts (“Other Government Entities”), provided that both the Other Government Entity and the Vendor agree. Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

**39. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

**40. REPORTS:** Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at [purchasing.requisitions@wv.gov](mailto:purchasing.requisitions@wv.gov).

**41. BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider’s employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Revised 01/09/2020

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

**42. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
- c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

**43. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a

“substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

**44. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE:** W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

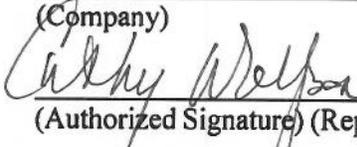
**45. PROHIBITION AGAINST USED OR REFURBISHED:** Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

  
Sales  
\_\_\_\_\_  
**(Name, Title)**  
Brian Sweeney Sales  
\_\_\_\_\_  
**(Printed Name and Title)**  
2601 Emory Rd., Building #7, Finksburg, MD 21048  
\_\_\_\_\_  
**(Address)**  
P- 410-861-8654 F- 410-861-8655  
\_\_\_\_\_  
**(Phone Number) / (Fax Number)**  
bsweeney@dpihighwaysystems.com  
\_\_\_\_\_  
**(email address)**

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Dimensional Products Inc.

\_\_\_\_\_  
**(Company)**  
 Cathy Wolfson - President  
\_\_\_\_\_  
**(Authorized Signature) (Representative Name, Title)**  
Cathy Wolfson - President  
\_\_\_\_\_  
**(Printed Name and Title of Authorized Representative)**  
8/11/2020  
\_\_\_\_\_  
**(Date)**  
P- 410-861-8654 F- 410-861-8655  
\_\_\_\_\_  
**(Phone Number) (Fax Number)**

**ADDENDUM ACKNOWLEDGEMENT FORM**  
SOLICITATION NO.: CRFQ DOT2100000005

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:  
(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Dimensional Products Inc.

Company \_\_\_\_\_

Authorized Signature \_\_\_\_\_

8/11/2020

Date \_\_\_\_\_

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

**REQUEST FOR QUOTATION**  
**CRFQ DOT2100000005**  
**CLASS 839 Trailer Mounted Solar Powered Arrow Boards (7020EC13)**

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**SPECIFICATIONS**

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids On behalf of the West Virginia Division of Highways, Department of Transportation to establish an open-end contract for Trailer Mounted Solar Powered Arrow Board.
  
2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
  - 2.1 **“Contract Item” or “Contract Items”** means the list of items identified in Section 3, Subsection 1 below.
  
  - 2.2 **“Pricing Pages”** means the schedule of prices, estimated order quantity, and totals contained in wvOASIS or attached hereto as Exhibit A and used to evaluate the Solicitation responses.
  
  - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
  
  - 2.4 **“WVDOH”** means West Virginia Division of Highways.
  
  - 2.5 **“OSHA”** means Occupational Safety and Health Act of 1970/ Exhibit C, Reference [www.osha.gov](http://www.osha.gov).
  
  - 2.6 **“RF”** means Interference radio frequency.
  
  - 2.7 **“L.E.D.”** means lighting emitting diode.
  
3. **GENERAL REQUIREMENTS:**
  - 3.1 **Contract Items and Mandatory Requirements:** Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.
    - 3.1.1 **General – Trailer Mounted Solar Powered Arrow Board.**
      - 3.1.1.1 The unit specified herein and offered shall be manufactured after January 1, 2020 and must be a new unit, not previously used or sold.

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**3.1.2 Arrow Board**

**3.1.2.1** The arrow board shall be a weather-tight panel/minimum 48 inches high by 96 inches wide.

**3.1.2.2** The height from the bottom of the panel to the roadway when deployed shall be seven (7) feet above the roadway.

**3.1.3 Power Source**

**3.1.3.1** Arrow board shall have built in auxiliary battery charger which would enable the batteries to be hooked up to an AC power source at the storage yard or off of a generator in the field so that the batteries shall be fully charged.

**3.1.3.2** Charge time and charger version shall be based on the manufacturer's battery configuration.

**3.1.3.3** The battery bank shall be of sufficient size and capacity to power the unit a minimum of 30 days with no solar assist.

**3.1.3.4** The solar generator shall incorporate a 12 Volt DC Photovoltaic Solar Panel mounted on a self-erecting; automatic positioning device located above the unit.

**3.1.3.5** The batteries shall be protected to prevent damage due to overcharging or discharging too deeply at any temperature.

**3.1.3.6** The unit shall go to four (4) corner caution when charging is required.

**3.1.4 Face Panel**

**3.1.4.1** Lamps shall be five (5) inch amber L.E.D. with minimum angularity of 30 degrees.

**3.1.4.2** The unit shall increase lamp brightness when the ambient light level increases to five (5) foot candles, plus or minus one (1) foot candle and minimum legibility distance of one (1) mile.

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- 3.1.4.3** The face of the panel shall be flat black with 15 hooded lamps.
- 3.1.4.4** The unit shall have the capability of the following modes of operation:
  - (1) Right arrow – ten (10) lamps flashing in unison.
  - (2) Left arrow - ten (10) lamps flashing in unison.
  - (3) Double arrow – five (5) lamps in each arrowhead and three (3) lamps in shaft, all flashing in unison.
  - (4) Warning bar – seven (7) horizontal lamps flashing in unison.
  - (5) Four-point caution – four (4) outermost corner lamps flashing in unison.
  - (6) Indicator lights on back of panel.
- 3.1.4.5** The flash rate shall be 30 flashes per minute and the flash cycle time shall be two (2) seconds with 50 percent on time.

**3.1.5 Controller**

- 3.1.5.1** The arrow board controller shall be housed in a weatherproof, lockable enclosure.

**3.1.6 Communication**

- 3.1.6.1** Unit shall be safe guarded from any unwanted outside RF interference which would include but not limited to VHF/FM receiver, 2-way receiver, cell phones, etc.

**3.1.7 Paint**

- 3.1.7.1** Arrow board shall be painted flat black.

**3.1.8 Trailer**

- 3.1.8.1** 2,000 lb. axle with leaf springs.
- 3.1.8.2** Tubeless, standard tread tires and wheels.
- 3.1.8.3** Heavy duty pintle eye hitch, 3” inner diameter.

-exception: the Silent Messenger Arrow Board Trailer is equipped with Torsion-Type Axle suspension

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- 3.1.8.4 Adjustable jack stand on trailer tongue.
- 3.1.8.5 The unit shall have five (5) telescoping jack stands, all four (4) corners and tongue to stabilize unit while in operation.
- 3.1.8.6 Lighting and safety chains for highway use.
- 3.1.8.7 Heavy duty lighting for towing of unit with quick disconnect male pin plug.
- 3.1.8.8 License plate brackets.
- 3.1.8.9 Wheel fenders.
- 3.1.8.10 The arrow board shall be raised and lowered using a hand operating winch (or hydraulic pump and ram).
- 3.1.8.11 Unit shall include LED taillights, stop lights, turn signals, license mount with light, and all necessary reflectors.

**3.1.9 Trailer Paint**

- 3.1.9.1 The trailer shall be painted manufacturer standard color paint for this unit.

**3.1.10 Miscellaneous:**

- 3.1.10.1 **Unspecified Accessories & Features:** All parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, must be furnished with each unit and required to conform to strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry. All parts and accessories advertised and regularly supplied as standard shall be included, except those which would represent duplication of these specified and except those which, by specification, are not to be furnished. All standard safety features, required by Federal and State Law, shall be included.

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**3.1.10.2** Unit shall be delivered: to WVDOH with all manufacturers recommended safety related decals and safety features intact.

**3.2.1 Vendor Responsibility:**

**3.2.1.1** The vendor is responsible to furnish a full matrix trailer mounted solar powered message board light that is properly engineered and that confirms to all and any laws governing such equipment.

**3.2.2 Representative Unit for Test:**

**3.2.2.1** The successful vendor must (if specified) provide the DOH one (1) completed represented unit to be observed and evaluated on each order to in-sure compliance with specification. If requested, the time period for testing and evaluation shall be seven (7) working days following receipt of the unit. DOH will incur no obligation for deterioration of surfaces, finishes, seals, and mechanical or electrical parts on the unit resulting from operation and testing within the limits of these specifications; nor will DOH incur obligation for damage to the unit resulting from failure to meet specifications when due care and attention is given by DOH and testing is done within the limits of these specifications. Failure of the pilot unit to satisfactorily meet specifications as bid may be cause for cancellation of the purchase order and return of the delivered unit along with all associated equipment to the vendor at the vendor's expense.

**3.2.3 Operating and Service Manuals and Parts Lists:**

**3.2.3.1** An operator's manual must be included with each unit upon delivery. A "line sheet" (if applicable) and the "Equipment Preventative Maintenance Questionnaire", (Exhibit "B") must be with pilot unit upon delivery, Attn: Todd Campbell. There must be 12 service/shop/maintenance manuals and 14 parts manuals; USB storage drive is preferred in lieu of parts manuals. Manuals and USB storage drive shall be delivered upon completion of delivery of total units. Failure to do so will delay payment.

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**3.2.4 Training:**

**3.2.4.1** Manufacturers and/or dealers will be required to stage a thorough seminar on the subjects of Preventative Maintenance, Operator, and Mechanic Training. In order to keep operators and mechanics updated, the successful vendor shall conduct training sessions covering

the operation, maintenance, troubleshooting with each purchase order against this open-end contract.

Manufacturers and/or dealers shall be required to furnish the Training Academy with one (1) Operator's Manual to be shipped direct to:

**WVDOH**  
Training Academy  
P.O. Box 610  
Buckhannon, West Virginia 26201

Prior to delivery of the pilot unit. Training seminar to be held at the WVDOT, Equipment Division, Buckhannon, WV.

**3.2.5 Preventative Maintenance & Operator Procedures:**

**3.2.5.1** Manufacturers and/or dealers will be required to submit to the Equipment Division, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventative Maintenance and Operator Procedures to be used by the operators of this equipment, and must include such things as daily prestart inspection procedure, service schedule, and routine maintenance required, safety precautions, etc. The successful vendor shall furnish all training aids, i.e. videos, projectors as required in conducting the training.

**3.2.6 Warranty and Service Policy:**

**3.2.6.1** The unit must be accompanied upon delivery by the unit's manufacturers executed standard warranty and service policy.

**REQUEST FOR QUOTATION**  
**CRFQ DOT2100000005**  
**CLASS 839 Trailer Mounted Solar Powered Arrow Boards (7020EC13)**

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**4. CONTRACT AWARD:**

**4.1 Contract Award:** The Contract is intended to provide Agencies with a purchase price on all Contract Items. The Contract shall be awarded to Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

**4.2 Pricing Pages:** Vendor should complete the Pricing Pages (Exhibit A) by completing the Year, Make, Model, and inserting quoted unit price and multiply by the Estimated Quantity to calculate the Total Bid Amount. Vendor should complete the pricing pages in their entirety as failure to do so may result in Vendor's bids being disqualified.

The Pricing Page contains a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address:  
Crystal.G.Hustead@wv.gov.

**5. ORDERING AND PAYMENT:**

**5.1 Ordering:** Vendor shall accept orders through wvOASIS, regular mail, facsimile, e-mail, or any other written forms of communication. Vendor may but is not required to accept on-line orders through a secure internet ordering portal/website. If Vendor has the ability to accept on-line orders, it should include in its response a brief description of how Agencies may utilize the on-line ordering system. Vendor shall ensure that its on-line ordering system is properly secured prior to processing Agency orders on-line.

**5.2 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

**6. DELIVERY AND RETURN:**

**6.1 Delivery Time:** Vendor shall deliver standard orders within 60 working days after orders are received. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met. A

**REQUEST FOR QUOTATION  
CRFQ DOT2100000005**

**CLASS 839 Trailer Mounted Solar Powered Arrow Boards (7020EC13)**

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completed pilot model for inspection must be provided within 30 working day(s) after receipt of the purchase agreement by the successful vendor. Working day is defined as any weekday, Monday thru Friday, excluding Federal and State Holidays. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met.

- 6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

- 6.3 Delivery Payment/Risk of Loss:** Standard order delivery shall be F.O.B. Destination to the Agency's location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery. The Agency will pay delivery charges on all emergency orders provided that Vendor invoices those delivery costs as a separate charge with the original freight bill attached to the invoice.

- 6.4 Condition of Unit(s) Upon Delivery:** All units must arrive at the prescribed delivery point having been completely pre-serviced with oil, lubricants, and coolant. All prescribed precautions pertaining to first operations and break-in of the unit are to be posted conspicuously on the unit for ready observance by the operator.

- 6.5 Delivery Point:** Delivery point of the completed representative unit will be the WVDOH, Equipment Division, 83 Brushy Fork Road Crossing, Buckhannon, WV 26201.

**7. VENDOR DEFAULT:**

- 7.1** The following shall be considered a vendor default under this Contract.

**7.1.1** Failure to provide Contract Items in accordance with the requirements contained herein.

**7.1.2** Failure to comply with other specifications and requirements contained herein.

**REQUEST FOR QUOTATION  
CRFQ DOT2100000005  
CLASS 839 Trailer Mounted Solar Powered Arrow Boards (7020EC13)**

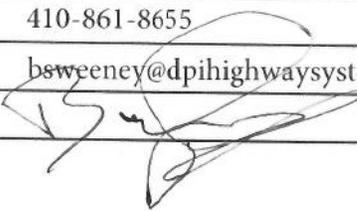
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- 7.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
- 7.1.4 Failure to remedy deficient performance upon request.
- 7.2 The following remedies shall be available to Agency upon default.
  - 7.2.1 Immediate cancellation of the Contract.
  - 7.2.2 Immediate cancellation of one or more release orders issued under this Contract.
  - 7.2.3 Any other remedies available in law or equity.
- 8. **MISCELLANEOUS:**
  - 8.1 **No Substitutions:** Vendor shall supply only Contract Items submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.
  - 8.2 **Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.
  - 8.3 **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

**Contract Manager:** Brian Sweeney  
**Telephone Number:** 410-861-8654  
**Fax Number:** 410-861-8655  
**Email Address:** bsweeney@dpihighwaysystems.com

**Exhibit A Pricing Page**

<b>CRFQ DOT2100000005</b>					
<b>Trailer Mounted Solar Powered Arrow Board</b>					
Item No.	Description:	Make/Model & Year	Estimated Unit Quantity	Unit Price	Item Total Cost
1	<b>Trailer Mounted Solar Powered Arrow Board</b>	Solar Technology, Inc. AB-0515 2020	15	\$4427.00	\$66405.00
<b>Total Bid Amount</b> 					\$66405.00

<b>Vendor Information</b>	
<b>Company Name:</b>	Dimensional Products, Inc.
<b>Contract Manager:</b>	Brian Sweeney
<b>Address:</b>	2601 Emory Rd., Building #7 Finksburg, MD 21048
<b>Phone:</b>	410-861-8654
<b>Fax:</b>	410-861-8655
<b>Email:</b>	bsweeney@dpihighwaysystems.com
<b>Signature:</b>	

**EXHIBIT B**

**EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE**

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY BY SUCCESSFUL BIDDER OR MANUFACTURER'S TECHNICAL REPRESENTATIVE PRIOR TO DELIVERY TO THE WVDOH.

DESCRIPTION: Solar Powered Flashing Arrow Board Trailer MAKE: Solar Technology

MODEL: AB-0515 / Silent Sentinel YEAR: 2020/or current PURCHASE AMOUNT: \$4427.00

ENGINE: MAKE: N/A MODEL: N/A FUEL TYPE: N/A GALLONS: N/A

HORSEPOWER: N/A CYLINDER: N/A ENGINE SERIAL: N/A

BELTS: DESCRIPTION: PART NUMBERS:  
N/A N/A  
N/A N/A

GVW: 1200 lbs. GVWR: 1200 lbs. AXLE CAPACITY: FRONT: N/A REAR: Single Axle Load Capacity 2200 lbs.

TIRES: FRONT MAKE & SIZE: B78-13 - Load Range C

REAR MAKE & SIZE: N/A

DIMENSIONS OF UNIT: LENGTH: 100 in. WIDTH: 95 in. HEIGHT: 134 in. elevated

VENDOR CONTACT PERSON: Brian Sweeney PHONE: 410-861-8654

**PARTS:**

BATTERY MAKE: Crown MODEL: CR205 CCA: N/A  
SPARK PLUGS OR FUEL INJECTORS MAKE: N/A PART #: N/A  
FUEL PUMP OR INJECTION PUMP MAKE: N/A MODEL: N/A  
ALTERNATOR MAKE: N/A PART #: N/A  
STARTER MAKE: N/A PART #: N/A  
TURBO CHARGER MAKE: N/A PART #: N/A  
TRANS. MAKE: N/A MODEL: N/A AUTO/MANUAL: N/A  
HYDRAULIC PUMP MAKE: N/A MODEL: N/A

FILTERS	MAKE	PART NO.	LUBRICANT	MANUFACTURER TYPE
OIL	<u>N/A</u>	<u></u>	ENGINE OIL WEIGHT	<u>N/A</u>
AIR INNER	<u>N/A</u>	<u></u>	TRANSMISSION FLUID TYPE	<u>N/A</u>
AIR OUTER	<u>N/A</u>	<u></u>	POWER STEERING FLUID TYPE	<u>N/A</u>
FUEL PRIMARY	<u>N/A</u>	<u></u>	HYDRAULIC OIL WEIGHT	<u>N/A</u>
FUEL SECONDARY	<u>N/A</u>	<u></u>	DIFFERENTIALS OIL WEIGHT	<u>N/A</u>
COOLANT	<u>N/A</u>	<u></u>	BRAKE FLUID TYPE	<u>N/A</u>
HYDRAULIC	<u>N/A</u>	<u></u>	COOLANT TYPE	<u>N/A</u>
OTHER	<u>N/A</u>	<u></u>	OTHER	<u>N/A</u>
OTHER	<u>N/A</u>	<u></u>	OTHER	<u>N/A</u>
OTHER	<u>N/A</u>	<u></u>	OTHER	<u>N/A</u>
OTHER	<u>N/A</u>	<u></u>	OTHER	<u>N/A</u>

## West Virginia Ethics Commission



### Disclosure of Interested Parties to Contracts

Pursuant to *W. Va. Code* § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of \$1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

*"Business entity"* means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

*"Interested party"* or *"Interested parties"* means:

- (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
- (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
- (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

*"State agency"* means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of *W. Va. Code* § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

*This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: [ethics@wv.gov](mailto:ethics@wv.gov); website: [www.ethics.wv.gov](http://www.ethics.wv.gov).*

**West Virginia Ethics Commission**  
**Disclosure of Interested Parties to Contracts**

(Required by W. Va. Code § 6D-1-2)

**Name of Contracting Business Entity:** Dimensional Products Inc **Address:** 2601 Emory Rd., Building #7

Finksburg, MD 21048

**Name of Authorized Agent:** Brian Sweeney **Address:** 2601 Emory Rd., Building #7, Finksburg MD 21048

**Contract Number:** DOT2100000005 **Contract Description:** Trailer Mtd. Solar Powered Arrow Board

**Governmental agency awarding contract:** West Virginia Division Of Highways

**Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (*attach additional pages if necessary*):

**1. Subcontractors or other entities performing work or service under the Contract**

Check here if none, otherwise list entity/individual names below.

**2. Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**

Check here if none, otherwise list entity/individual names below.

*Cathy Wolfson 51.5%*  
*Steven Noel 39%*

**3. Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**

Check here if none, otherwise list entity/individual names below.

**Signature:** *Cathy Wolfson* **Date Signed:** 8/11/2020

**Notary Verification**

State of MD, County of CARROLL:

I, *Cathy Wolfson*, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 12 day of August, 2020

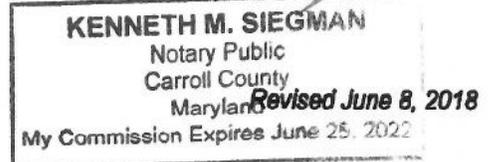
*[Signature]*  
Notary Public's Signature

**To be completed by State Agency:**

Date Received by State Agency: \_\_\_\_\_

Date submitted to Ethics Commission: \_\_\_\_\_

Governmental agency submitting Disclosure: \_\_\_\_\_



STATE OF WEST VIRGINIA  
Purchasing Division

# PURCHASING AFFIDAVIT

**CONSTRUCTION CONTRACTS:** Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

**ALL CONTRACTS:** Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

**DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: Dimensional Products, Inc  
Authorized Signature: Cathy Wilson Date: August 12 2020  
State of MD  
County of Carroll, to-wit:  
Taken, subscribed, and sworn to before me this 12 day of August, 2020.  
My Commission expires 6/25, 2022.

**AFFIX SEAL HERE**  
**KENNETH M. SIEGMAN**  
Notary Public  
Carroll County  
Maryland  
My Commission Expires June 25, 2022

**NOTARY PUBLIC**  
[Signature]  
Purchasing Affidavit (Revised 01/19/2018)



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Request for Quotation  
 31 – Public Safety

Proc Folder: 740703

Doc Description: ADDENDUM 1 TRAILER MTD. SOLAR POWERED ARROW BOARDS-7020EC13

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-24	2020-08-12 13:30.00	CRFQ 0803 DOT2100000005	2

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

Vendor Name, Address and Telephone Number:

Dimensional Products Inc.  
 2601 Emory Road, Building #7  
 Finksburg, MD 21048  
 410-861-8654

**FOR INFORMATION CONTACT THE BUYER**

Crystal G Husted  
 (304) 558-2402  
 crystal.g.husted@wv.gov

Signature X

FEIN # 37-1383283

DATE 8/11/2020

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION:**

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS TO ESTABLISH AN OPEN-END CONTRACT FOR TRAILER MOUNTED SOLAR POWERED ARROW BOARDS PER THE ATTACHED DOCUMENTS.

\*\*\*QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE CONTAINED IN THE INSTRUCTIONS TO VENDORS SUBMITTING BIDS\*\*\*

INVOICE TO		SHIP TO	
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV26201 US		DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Trailer mounted solar powered arrow boards	15.00000	EA	\$4427.00	\$66405.00

Comm Code	Manufacturer	Specification	Model #
46161520	Solar Technology Inc.	48"x96 15-LED Lamp Arrow Board Trailer	Silent Sentinel AB-0515

**Extended Description :**

Trailer Mounted Solar Powered Arrow Boards

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	MANDATORY PRE-BID MEETING	2020-07-28
2	VENDOR QUESTION DEADLINE	2020-07-31

SOLICITATION NUMBER: CRFQ DOT2100000005

Addendum Number: 1

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The purpose of this addendum is to modify the solicitation identified as (“Solicitation”) to reflect the change(s) identified and described below.

**Applicable Addendum Category:**

- ] Modify bid opening date and time
- ] Modify specifications of product or service being sought
- ] Attachment of vendor questions and responses
- ] Attachment of pre-bid sign-in sheet
- ] Correction of error
- ] Other

**Description of Modification to Solicitation:**

1. To provide WV DOT COVID-19 Guidelines for Pre-Construction & Pre-Bid Meetings

No other changes

**Additional Documentation:** Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

**Terms and Conditions:**

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

# ATTACHMENT A

# Department of Transportation

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## *COVID-19 Guidelines for Pre-Construction & Pre-Bid Meetings*

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The following guidelines are to be used when holding pre-construction and pre-bid meetings. Pre-construction and pre-bid meetings may require case-by-case analysis.

### **WV Purchasing Division Temporary Pre-bid Meeting Policy – COVID-19 Precautions**

1. Pre-bid meetings must be removed from solicitations as a requirement, wherever possible, and replaced with publication of written materials conveying the needed information (except when contrary to agency policy).
2. In instances where site inspections are necessary for bidders to have a full understanding of the project, the Purchasing Division recommends that pre-bid meetings (and the underlying solicitation) be delayed until this period of heightened concern has ended. If delaying the solicitation is not possible or would cause an undue hardship on the spending unit, the pre-bid meeting should be conducted in a manner that minimizes the risk of COVID-19 transmission to the greatest extent possible.
3. Under no circumstances is a spending to conduct a pre-bid meeting that violates a policy or declaration of the Governor's Office.

For existing central solicitations, the spending unit should work with its designated Purchasing Division buyer to issue addenda to modify pre-bid meeting requirements where necessary. On agency delegated solicitations, the spending unit can make the necessary adjustments under their delegated authority.

### **Department of Transportation Pre-Construction and Pre-bid Meetings Guidelines**

- When possible, limit the number of representatives of each vendor to a maximum of two (2).
- Require each vendor representative to wear a mask upon entering and while moving throughout a DOT facility for the duration of the pre-construction and pre-bid meeting.
  - Any representative who arrives at a DOT facility without a mask will not be permitted to enter.
- In areas where a minimum 6ft distancing is not feasible amongst vendors, groups must be staggered during inspections.
- For pre-construction or pre-bid meetings located at the Capitol Complex:
  - Pre-construction or Pre-bid meetings can be conducted by using the West Virginia State Training Center located in Building 7, 2<sup>nd</sup> Floor.
  - For room scheduling/availability please contact the Facility Scheduler, Jeremy Walker, at 304-414-0840 or by email at [dop.registrar@wv.gov](mailto:dop.registrar@wv.gov)
    - <https://personnel.wv.gov/ohrd/WVSTC/Pages/default.aspx>
- Vendor representatives must be met by a DOT employee conducting the meeting upon arrival to a DOT facility and escorted to the meeting location. After completion of the meeting, vendors must be escorted out of the facility.
- Upon completion of the meeting, all hard surfaces must be sanitized by the DOT employee(s) conducting the meeting.
- Pre-construction and Pre-bid meetings can be held outside of a DOT facility provided all safety guidelines can be met and no additional cost are incurred.
- Vendor representatives must provide their own refreshments.
- Delivery of bids to Building 5 must be scheduled. A DOT employee must meet the vendor representative at the Building 7 entrance and escort them to the bid box and back out of the facility. All facility COVID protocols apply.



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Request for Quotation  
 31 - Public Safety

Proc Folder: 740703

Doc Description: ADDENDUM 2 TRAILER MTD. SOLAR POWERED ARROW BOARDS-7020EC13

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-08-03	2020-08-12 13:30:00	CRFQ 0803 DOT2100000005	3

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

Vendor Name, Address and Telephone Number:

Dimensional Products Inc.  
 2601 Emory Road., Building #7  
 Finksburg, MD 21048  
 410-861-8654

**FOR INFORMATION CONTACT THE BUYER**

Crystal G Hustead  
 (304) 558-2402  
 crystal.g.hustead@wv.gov

Signature X

FEIN #

37-1383283

DATE

8/11/2020

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION:**

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS TO ESTABLISH AN OPEN-END CONTRACT FOR TRAILER MOUNTED SOLAR POWERED ARROW BOARDS PER THE ATTACHED DOCUMENTS.

\*\*\*QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE CONTAINED IN THE INSTRUCTIONS TO VENDORS SUBMITTING BIDS\*\*\*

INVOICE TO	SHIP TO
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV26201 US	DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Trailer mounted solar powered arrow boards	15.00000	EA	\$4427.00	\$66405.00

Comm Code	Manufacturer	Specification	Model #
46161520	Solar Technologies, Inc.	15-Lamp LED Solar Arrow Board Trailer	Silent Sentinel

Extended Description :  
Trailer Mounted Solar Powered Arrow Boards

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	MANDATORY PRE-BID MEETING	2020-07-28
2	VENDOR QUESTION DEADLINE	2020-07-31

DOT2100000005	<b>Document Phase</b> Final	<b>Document Description</b> ADDENDUM 2 TRAILER MTD. SOLAR POWERED ARROW BOARDS-7020EC13	<b>Page 3</b> of 3
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**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CRFQ DOT2100000005

Addendum Number: 2

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The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

**Applicable Addendum Category:**

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

**Description of Modification to Solicitation:**

1. To provide answers to vendor questions
2. To publish the pre-bid meeting sign-in sheets

No other changes

Bid opening remains 08/12/2020 at 1:30 PM

**Additional Documentation:** Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

**Terms and Conditions:**

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

# ATTACHMENT A

## ADDENDUM 2

CRFQ 0803 DOT2100000005

### TRAILER MOUNTED SOLAR POWERED ARROW BOARD

The original language in contract will be listed first with question and answer to follow below.

1. **3.2.1.1** The vendor is responsible to furnish a full matrix trailer mounted solar powered message board light that is properly engineered and that conforms to all and any laws governing such equipment.

The Equipment Division wishes to change **3.2.1.1** due to some incorrect information. **This will now read as: 3.2.1.1:** The vendor is responsible to furnish trailer mounted solar powered arrow board light that is properly engineered and that conforms to all and any laws governing such equipment.

2. **3.1.8.3 Heavy duty pintle eye hitch, 3" inner diameter.**

**Question:** It states in the requirements that a 3" pintle hitch is required for the arrow boards. But in the solicitation for the message boards, a 2" ball is required. Can the arrow boards also be a 2" ball or will the state require the 3" pintle?

**Answer:** Leave as written

3. **Question:** Will there be any bidding preference given to in state vendors as opposed to vendors from out of state?

**Answer:** Per Sections 15 and 15A of the Instructions to Vendors Submitting Bids, vendor preference is only applied in the purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects

**15. PREFERENCE:** Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:

<http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

**15A. RECIPROCAL PREFERENCE:** The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal

preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: <http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

4. **Question:** Want to verify that no bid bond or licensing is required to be submitted with the bid.

**Answer:** There are no bonding or licensing requirements for this solicitation. However, there are insurance requirements that are listed in Section 8 of the General Terms and Conditions that should be submitted with the bid and must be provided prior to award.

# Pre-Bid Sign-In Sheet

Solicitation Number: CRFQ 0803 DOT2100000005

Date of Pre-Bid Meeting: July 28, 2020 10:00 AM

Location of Prebid Meeting: Equipment Div. Buckhannon WV

**Please Note:**

Vendors must sign-in on this sheet to verify attendance at the Pre-Bid meeting.  
 Failure to legibly sign in may be grounds for declaring a vendor ineligible to bid.  
 For further verification, please also provide a business card if possible.

Firm Represented:*	Rep Name (Printed):	Firm Address:	Telephone #:	Fax #:	Email:
WV DOH	Pam Hall	Buckhannon			Pamela.J.Hall@wv.gov
WV DOH	Tina Lewis	Charleston, WV	304-414-6859		tina.l.lewis@wv.gov
SAFTEY ZONE	HEATHER ROYLANCE	2315 OLD COLUMBERD BUILDING 2 Unit 107 LITTLEWOOD, FL 33085	863-984-1353	863-984-0058	—
Dimensional Products Inc.	Brian Sweeney	2601 Emory Rd #7 Finksburg MD 21078	410-861-8654	410-861-8655	bsweeney@dpishighwaysystems.com

**\*One Vendor Per Representative** - No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

# Pre-Bid Sign-In Sheet

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Firm Represented:*	Rep Name (Printed):	Firm Address:	Telephone #:	Fax #:	Email:
VER-MAC	RICHARD TARKOW	4950 N. ILM HOUSTON PKWY HOUSTON, TX 77032	PP-4PP-7446	418-657-0517	RICHARD.TARKOW @VER-MAC.COM
American Signal Company	Seth Johnson	2755 Bankers Industrial DR Atlanta, Ga 30360	770-448-6650	770-448-8970	Sjohnson@AmSig.com
Mid Atlantic Maintenance	Cameron Morrison	3164 Southern Hwy Mineral Wells W	304-346- 5521	304-346- 5554	cmorrison@ midatlanticusa.com
D.O.H.	Todd Campbell		304-997-5536		A.Todd.Campbell@wv.gov
DOA	JOHN KILG		304-473-5335		

**\*One Vendor Per Representative** - No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.



2318 Old Combee Rd.  
 Bldg. 2 Unit 107  
 Lakeland, FL 33805

Roll Up Signs & Stands  
 Barricades & Lights  
 Strobe & LED Lights  
 Stop/Slow Paddles & Flags  
 Warning Paint & Flagging Ribbon  
 Flashlights & Batteries  
 Safety Cans & Cabinets  
 Safety Fence & Tape  
 Arrow & Message Boards

863.984.1385  
 FAX: 863.984.0058



Seth Johnson  
 Regional Sales Manager



AMERICAN SIGNAL COMPANY

Office: 770.448.6650 ext 112  
 Mobile: 404.978.5616  
 Fax: 770.448.8970  
 Email: [sjohnson@amsig.com](mailto:sjohnson@amsig.com)

2755 Bankers Industrial Dr. Atlanta GA 30360 | [amsig.com](http://amsig.com)

**RICHARD TATKOW**  
 NORTHEAST REGIONAL SALES MANAGER

VER MAC

21 BEDMINSTER ROAD, RANDOLPH, NJ 07869  
 P: 973.287.5302 TX: 863.485.7454  
 RICHARD.TATKOW@VER-MAC.COM  
 WWW.VER-MAC.COM

**Dimensional  Products Inc.**

safety beyond the lines

Roadside and Pedestrian Safety Hardware

**Brian Sweeney, Product Consultant**  
[bsweeney@dpihighwaysystems.com](mailto:bsweeney@dpihighwaysystems.com)

O: 410-861-8654  
 C: 443-220-9780

2601 Emory Rd., Building 7  
 Finksburg, MD 21048

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: DOT210000005**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

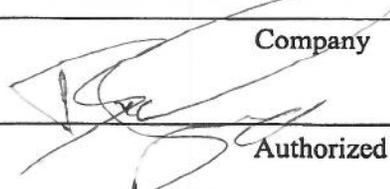
**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Dimensional Products Inc.  
\_\_\_\_\_  
Company  
  
\_\_\_\_\_  
Authorized Signature  
8/11/2020  
\_\_\_\_\_  
Date

**NOTE:** This addendum acknowledgement should be submitted with the bid to expedite document processing.  
Revised 6/8/2012

**EXHIBIT B**

**EQUIPMENT PREVENTATIVE MAINTENANCE QUESTIONNAIRE**

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY BY SUCCESSFUL BIDDER OR MANUFACTURER'S TECHNICAL REPRESENTATIVE PRIOR TO DELIVERY TO THE WVDOH.

DESCRIPTION: Solar Powered Flashing Arrow Board Trailer MAKE: Solar Technology

MODEL: AB-0515 / Silent Sentinel YEAR: 2020/or current PURCHASE AMOUNT: \$4427.00

ENGINE: MAKE: N/A MODEL: N/A FUEL TYPE: N/A GALLONS: N/A

HORSEPOWER: N/A CYLINDER: N/A ENGINE SERIAL: N/A

BELTS:	DESCRIPTION:	PART NUMBERS:
	<u>N/A</u>	<u>N/A</u>
	<u>N/A</u>	<u>N/A</u>

GVW: 1200 lbs. GVWR: 1200 lbs. AXLE CAPACITY: FRONT: N/A REAR: Single Axle Load Capacity 2200 lbs.

TIRES: FRONT MAKE & SIZE: B78-13 - Load Range C  
REAR MAKE & SIZE: N/A

DIMENSIONS OF UNIT: LENGTH: 100 in. WIDTH: 95 in. HEIGHT: 134 in. elevated

VENDOR CONTACT PERSON: Brian Sweeney PHONE: 410-861-8654

**PARTS:**

BATTERY MAKE: <u>Crown</u>	MODEL: <u>CR205</u>	CCA: <u>N/A</u>
SPARK PLUGS OR FUEL INJECTORS MAKE: <u>N/A</u>	PART #: <u>N/A</u>	
FUEL PUMP OR INJECTION PUMP MAKE: <u>N/A</u>	MODEL: <u>N/A</u>	
ALTERNATOR MAKE: <u>N/A</u>	PART #: <u>N/A</u>	
STARTER MAKE: <u>N/A</u>	PART #: <u>N/A</u>	
TURBO CHARGER MAKE: <u>N/A</u>	PART #: <u>N/A</u>	
TRANS. MAKE: <u>N/A</u>	MODEL: <u>N/A</u>	AUTO/MANUAL: <u>N/A</u>
HYDRAULIC PUMP MAKE: <u>N/A</u>	MODEL: <u>N/A</u>	

FILTERS	MAKE	PART NO.	LUBRICANT	MANUFACTURER TYPE
OIL	<u>N/A</u>		ENGINE OIL WEIGHT	<u>N/A</u>
AIR INNER	<u>N/A</u>		TRANSMISSION FLUID TYPE	<u>N/A</u>
AIR OUTER	<u>N/A</u>		POWER STEERING FLUID TYPE	<u>N/A</u>
FUEL PRIMARY	<u>N/A</u>		HYDRAULIC OIL WEIGHT	<u>N/A</u>
FUEL SECONDARY	<u>N/A</u>		DIFFERENTIALS OIL WEIGHT	<u>N/A</u>
COOLANT	<u>N/A</u>		BRAKE FLUID TYPE	<u>N/A</u>
HYDRAULIC	<u>N/A</u>		COOLANT TYPE	<u>N/A</u>
OTHER	<u>N/A</u>		OTHER	<u>N/A</u>
OTHER	<u>N/A</u>		OTHER	<u>N/A</u>
OTHER	<u>N/A</u>		OTHER	<u>N/A</u>
OTHER	<u>N/A</u>		OTHER	<u>N/A</u>



As Reliable as the Sun

# Silent Sentinel Arrow Board

## 15 or 25 Lamp Models

### USES AND ADVANTAGES

The "Silent Sentinel" Arrow Board is widely used for both construction and general traffic control. Sturdy and portable, this Arrow Board is available in 15 or 25 lamp configurations. The Arrow Board comes with a 96" w x 48" h display panel on a rugged steel trailer with a wide footprint for better stability, powered by a combination of solar panels and batteries. The torsion axle provides better ground clearance.

### FREE REMOTE COMMUNICATION

Remote Access and GPS Tracking are now standard, thanks to the built-in GPS receiver and cellular transceiver with **FREE lifetime service**. Now you can:

- LOCATE your board on a Command Center's maps
- SEE Battery Voltage from your desk
- SEE HISTORY of what was displayed and when

Free remote access plus our 5 Year Bumper-to-Bumper Warranty makes our Arrow Board **A Better Board**.



### EASY-TO-USE CONTROLLER

Control module displays:

- Battery level
- Solar charger status
- Lamp intensity
- Cellular status
- GPS status



Arrow and warning patterns can be set with the press of a button. Automatic fault protection is built in.



### OPTIONAL CONTROLLER: SIDE RAIL MOUNTED CONTROLLER

Installed on side rail at eye level. Access the controller without opening battery box. Keep battery box locked - reduce theft.

Vehicle-mounted Arrow Boards are also available. See website for a handy Configuration Guide

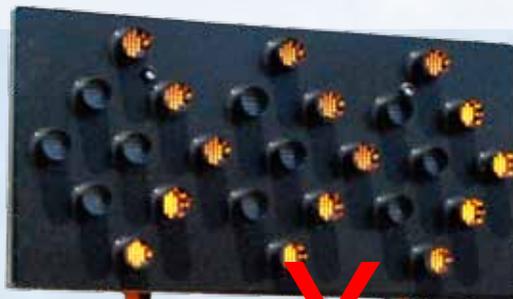


15 Lamp Models

Model	Solar Array
AB-0515	40 Watt
AB-0715	80 Watt

25 Lamp Models

Model	Solar Array
AB-0525	40 Watt
AB-0725	80 Watt



25 Lamp r



15 Lamp



# Silent Sentinel Arrow Board

## DISPLAY

Panel Size .....	96" x 48" (244 cm x 122 cm)
Panel Construction .....	All aluminum with welded frame
Panel Finish .....	Matte black baked enamel finish
Lamp Intensity .....	1,000 Candela (typical), 750 Candela (min.)
Lamp Beam Angle.....	30° horizontal x 6° vertical (minimum)
Lamp Construction.....	LED (21 per lamp) in unbreakable sealed polycarbonate housing
Lamp Shrouds .....	360° high-impact plastic
Rear Panel Indicators .....	Three (3) LED

## TRAILER

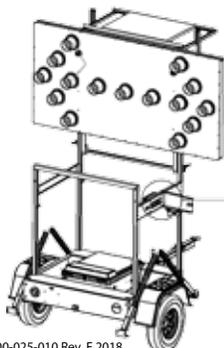
Length Overall .....	100" (254 cm)
Length.....	53" (135 cm) excluding tongue
Width Overall .....	96" (244 cm)
Width Across Fenders.....	75" (190 cm)
Height Traveling .....	92" (234 cm)
Height Operating .....	134" (340 cm)
Ground Clearance .....	13.5" (34 cm)
Weight (approx) .....	1,180 lbs. (535 kg)
Hitch.....	2" ball (50 mm) or 2.5" (64 mm) pintle ring
Lifting Mechanism .....	1,000 lb. (454 kg) capacity (minimum) automatic brake winch and cable

## CONTROLLER

Controller Circuitry .....	Ultra-low power solid state
Lamp Patterns.....	All standard 15 & 25 lamp flashing & sequential
Lamp Flash Rate.....	30 per minute
Lamp Dimming .....	Manual and automatic
Lamp Dimming Ratio.....	50%, fully dimmed at approx. 5 footcandles
Lamp Power Drivers.....	Current limited and thermal overload protected with "soft start" feature
Voltage Disconnect .....	Low disconnect at 10.70 volts, high at 15.10 volts

## ENERGY SOURCE

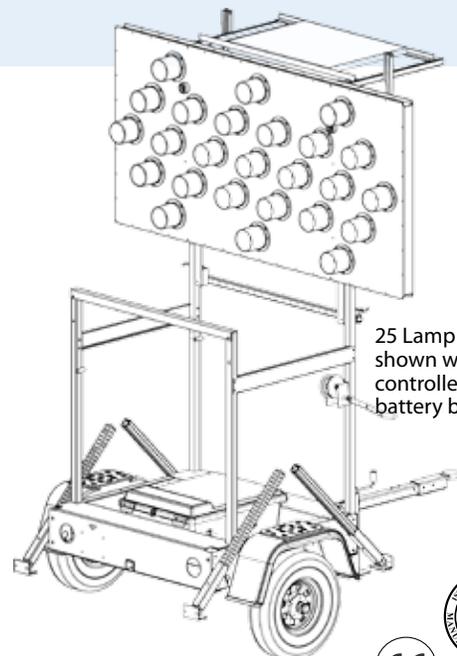
Operating Voltage.....	12 Volts DC (nominal)
Battery Type .....	6 Volt heavy duty, deep cycle (GC-2) protected by anti-theft steel security frame and hardware
Number of Batteries .....	Two (2) standard lead acid (flooded)
with Auxiliary Batteries .....	Four (4) standard lead acid (flooded)
Battery Capacity.....	260 amp hours
with Auxiliary Batteries .....	520 amp hours
Battery Status Indicator .....	Displays battery voltage, charging activity and low battery condition
Battery Security .....	Anti-theft steel battery frame bolted to trailer
Solar Array Construction .....	Top-mounted solar panels in aluminum frame
Solar Array Power Output .....	40 or 80 watts - field-upgradable
Solar Charge Controller.....	Fully automatic, temperature compensated



15-Lamp model shown with optional Side Rail Mounted Controller



Arrow panel folds for transport.



25 Lamp model shown with controller in battery box



## AVAILABLE OPTIONS

### BATTERY UPGRADES

- Four (4) standard Flooded
- Two (2) maintenance-free Gel Cell or AGM
- Two (2) maintenance-free Gel Cell or AGM

### AUXILIARY BATTERY CHARGERS

- 45 amp, 120 volt AC line-powered: recharges batteries in less than 9 hours

### OPTIONAL SIDE-MOUNT CONTROLLER

Side-Mount Controller brings controls to eye-level and away from battery box

### OTHER OPTIONS

**Security:** Vandal-Proof Battery Box reinforced steel cage  
**Brakes:** Electric Brakes  
 Custom Colors and Canadian versions available

All models meet or exceed the standards for Flashing Arrow Panels as listed in the U.S. Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD).

P/N 500-025-010 Rev. F 2018



**SOLAR TECHNOLOGY, INC.**  
 7620 Cetronia Rd. Allentown, PA 18106  
 Phone: 800-475-5442 or 610-391-8600

[www.solartechnology.com](http://www.solartechnology.com)





*Harness the Power of the Sun*

## **SOLAR TECHNOLOGY, INC** **Comprehensive 5-Year Limited Warranty**

Welcome to the SOLAR TECHNOLOGY family! Your purchase represents the very finest in traffic control devices. To insure the quality that goes into the design and manufacturing of every new SOLAR TECHNOLOGY product, we offer a Comprehensive Protection Program (CPP) which provides for a five-year limited warranty covering all Silent Messenger changeable message signs (message boards), Silent Sentinel advanced warning arrow panels (arrow boards) and Silent Advisor radar speed trailers (radar speed displays) purchased for U.S. Domestic and Canadian use. Additionally, Solar Technology, Inc. provides a ten-year limited warranty on all LED lamps used in its Silent Sentinel line of advanced warning arrow panels.

### **LIMITED WARRANTY**

SOLAR TECHNOLOGY, INC. (STI) warrants that this product will conform to the manufacturer's standard specifications without defects in materials or workmanship for a period of five years. This is a "bumper to bumper" warranty that covers repair or replacement of all components, on an exchange basis, with the exception of vendor supplied items and consumables, including, but not limited to, modems, radar guns, tires, batteries and battery chargers. Other components may be warranted for an extended period of time. Components, sub-assemblies, and devices produced by other manufacturers not covered under this warranty are covered separately and individually under warranties provided by the specified manufacturer.

This warranty is granted to the original end-user of the product and is not assignable to any subsequent purchaser or user. Any leasing or borrowing of these goods or other use beyond normal demonstration of the same shall be deemed to be a use by the original end-user. The period of this warranty shall commence on the date of delivery to the first original end user. Proof of purchase and delivery date may be required when warranty service is requested. The sole remedy under this warranty shall be the repair or replacement of parts which have been determined to be defective after inspection by an approved representative of STI. STI reserves the right to demand the return of parts replaced under this warranty or in disputable fitness and must be consulted for authorization before any such return. All defective parts replaced under this warranty shall become the property of STI. If a claimed defect cannot be identified or reproduced in service, the end-user will be held responsible for the costs incurred.

The cost of shipping of parts to be repaired to STI shall be the responsibility of the user, while the cost of shipping replacement or re-manufactured parts to the user shall be the responsibility of STI. Under no circumstances shall STI be responsible for duties, customs, or import fees associated with repair or replacement of warranted products or parts. Under no circumstances shall STI be responsible for transportation or mileage costs associated with repair or replacement of warranted products or parts. Tampering with the serial number, STI logo and graphics, or posted safety and operating instructions may constitute a breach of and voids this warranty.

This warranty shall not extend to any goods or parts which have been altered, repaired, operated, or maintained outside of approved STI procedures or directives. This warranty does not cover damage resulting from causes beyond the control of STI, including without limitation: misuse, abuse, neglect, or accident; external electrical faults, power surges, or power failure; damage occurring in shipment or from improper transportation, installation, operation or application; or damage resulting from improper usage or use of the product with components, accessories or expansion items not supplied by STI. The end-user is responsible for the selection, use and results obtained from the product. This warranty does not apply to any product which has not been paid for according to the terms under which the product has been invoiced.

This warranty is exclusive and in lieu of all other warranties, express or implied including warranties of merchantability or of fitness for purpose, and there are no other warranties which extend beyond the descriptions on the face hereof. The remedies set forth herein are exclusive and manufacturer shall not be liable for special, indirect or consequential damages. The obligations of STI hereunder shall in no way exceed the cost of the equipment or part upon which such liability is based.

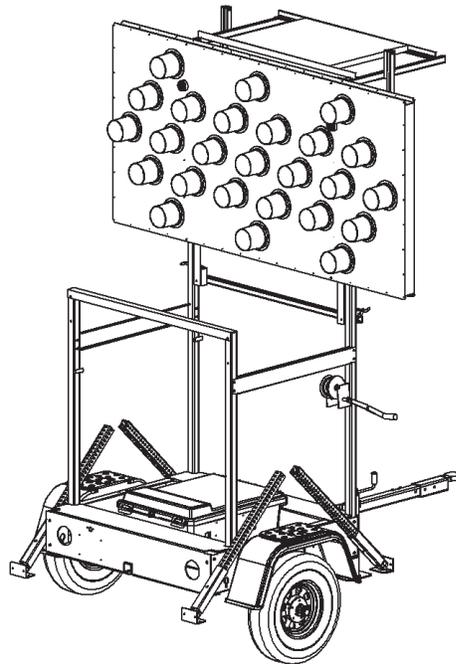
**“On the leading edge of quality design and manufacturing - now and always”**

Solar Technology, Inc.  
7620 Cetronia Road  
Allentown, PA  
Phone (610) 391-8600  
Toll Free (800) 475-5442  
[www.solartechnology.com](http://www.solartechnology.com)

**Silent Sentinel**  
Solar Powered Advanced Warning

# Arrow Panels

## Procurement Specifications



7620 Cetronia Road, Allentown, PA 18106 ■ Phone 610-391-8600  
[www.solartechology.com](http://www.solartechology.com)

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SolarTech, SILENT SENTINEL, and SOL-R-SIGN are trademarks of Solar Technology, Inc.

All other brands and product names mentioned herein are used for identification purposes only, and are trademarks or registered trademarks of their respective holders.

This document presents a detailed specification for a type-C advance warning (flashing) arrow panel. This specification typically requires additions and/or modifications to meet a user's specific requirements.

This specification is subject to periodic revisions as required without notice.

P/N 500-525-120

Twelfth Edition: 25 August 2016

General email: [info@solartechnology.com](mailto:info@solartechnology.com)  
Technical Support email: [techsupport@solartechnology.com](mailto:techsupport@solartechnology.com)

Web site: [www.solartechnology.com](http://www.solartechnology.com)

## 1. General

### 1.1 Product Description

The **SILENT SENTINEL** is a solar powered advance warning (flashing) arrow panel (FAP). The **SILENT SENTINEL** consists of an arrow display panel, a supporting structure for the display panel, a photovoltaic array, a battery power supply and an electronic control console, all mounted on a heavy duty trailer frame.

### 1.2 Design Objectives

1.2.1 Maximize reliability by using generally accepted design techniques for outdoor-use electrical and electronic equipment.

1.2.2 Minimize operating cost by using a renewable energy source, requiring minimal maintenance.

1.2.3 Maximize safety and effectiveness by using a high contrast arrow display panel with long-life expectancy, high-reliability LED lamp technology.

1.2.4 Meet or exceed the standards for Arrow Boards as listed in the U.S. Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD).

### 1.3 Performance Objectives

1.3.1 Visibility greater than 1 mile.

1.3.2 Legibility at 1 mile.

1.3.3 Minimal glare from sunlight and headlights.

1.3.4 Continuous, uninterrupted operation on solar power.

1.3.5 One month minimum, three month typical maintenance interval.

### 1.4 Quality Assurance Objectives

1.4.1 All manufacturing shall be carried out in a facility with a completely implemented and properly maintained ISO 9001:2015 certified quality management system.

1.4.2 All units shall bear the CE Mark indicating acceptable EMC (Electromagnetic Compatibility) to insure that the units are neither susceptible to nor produce any electromagnetic interference.

1.4.3 Manufacturer shall have a factory authorized service center located within 150 miles of point of delivery. Authorized service center shall receive all units from factory in order to inspect for any shipping damage and verify proper operation prior to final delivery. Delivery directly from manufacturer's facility without inspection by an authorized service center shall not be permitted. Additionally, authorized service center shall be capable of performing warranty service and repairs, and shall provide on-site training on the proper use and maintenance of all equipment delivered.

## 2. Physical

### 2.1 Dimensions

#### 2.1.1 Length

2.1.1.1 Overall - 100 in. (254 cm)

2.1.1.2 Without tongue - 53 in. (135 cm)

#### 2.1.2 Width

2.1.2.1 Overall - 96 in. (244 cm)

2.1.2.2 Across fenders - 74 in. (188 cm)

#### 2.1.3 Height

2.1.3.1 Sign in transport position - 92 in. (234 cm)

2.1.3.2 Sign in operating position - 134 in. (340 cm)

2.1.4 Ground Clearance, minimum - 13 1/2 in. (34 cm)

2.1.5 Weight - 1,180 lbs. (535 kg)

### 2.2 Environmental

2.2.1 Temperature, operating and storage - -40 to +185 °F (-40 to +85 °C)

2.2.2 Relative Humidity - 20% to 98%, non-condensing

#### 2.2.3 Wind

2.2.3.1 Transport position, maximum towing speed - 70 MPH (112 KPH)

2.2.3.2 Operating position, max. height, outriggers in place - 80 MPH (128 KPH) sustained

2.2.4 Electrical Interference - Unaffected by RFI (Radio Frequency Interference) and EMI (Electromagnetic Interference).

### 3. Trailer Chassis and Sign Support

#### 3.1 Trailer Chassis

##### 3.1.1 Frame Construction

3.1.1.1 Trailer frame shall be constructed of welded 7 Gauge (3/16-inch) CNC formed steel plate and structural steel tubing with 3 x 3 x 3/16 inch structural steel tubing receiver for the tongue, reinforced and welded to the front crossmember.

3.1.1.2 Trailer shall be equipped with a 2 1/2 x 2 1/2 x 3/16 inch structural steel tubing receiver capable of accepting a standard Class 2 drawbar and hitch pin to accommodate tandem towing. The rear hitch receiver shall be reinforced and welded to a 7 Gauge (3/16-inch) CNC formed steel plate rear cross member. Tandem trailer towing using rear hitch receiver is intended for off road use only and is subject to local laws and regulations!

3.1.1.3 The trailer tongue shall consist of 2 1/2 x 2 1/2 x 3/16 inch structural steel tubing. The tongue shall bolt into the tongue receiver to facilitate easy removal of the tongue for repair, transportation, or security purposes. The trailer tongue shall be equipped with a 2,000-pound minimum capacity swivel-type top-wind screw jack with a formed steel footpad.

3.1.1.4 Trailer frame shall be equipped with tie down points to facilitate securing unit to utility trailer or truck deck for transport.

##### 3.1.2 Suspension

3.1.2.1 Trailer shall be equipped with an independent suspension, torsion-type axle with a 2,200 pound overall capacity. Axle load capacity shall be set at 1,400 pounds.

3.1.2.2 Axle wheel spindles shall be equipped with grease fittings to accommodate wheel bearing lubrication.

##### 3.1.3 Coupler

3.1.3.1 Trailer tongue shall be capable of accepting a 2-inch ball coupler, a 2 1/2-inch pintle ring, an optional removable combination coupler (2-inch ball coupler & 2 1/2-inch pintle ring), or an optional adjustable height coupler (2-inch ball coupler and/or 2 1/2-inch pintle ring).

3.1.3.2 Trailer shall be equipped with 1/4-inch safety chains with snap-type hooks for secure attachment to tow vehicle hitch.

3.1.3.3 All coupler and safety chain configurations shall comply with SAE J684 standards for Class II (2) trailers.

##### 3.1.4 Surface Preparation and Finishing

3.1.4.1 Trailer chassis and superstructure shall be completely cleaned and deburred prior to finishing. All metal surfaces shall be prepared for finishing using an iron phosphate wash-down process.

3.1.4.2 A polyamide epoxy primer shall be applied to a dry film thickness of 1.5 mils.

3.1.4.3 A high gloss federal safety orange aliphatic acrylic urethane finish shall be applied to a dry film thickness of 1.25 mils.

### 3.1.5 Lighting

3.1.5.1 Trailer shall be equipped with sealed flush-mounted combination stop, tail and turn lights.

3.1.5.2 Trailer shall be equipped with a lighted license plate holder.

3.1.5.3 Trailer wiring harness shall be completely sealed and water resistant.

### 3.1.6 Fenders

3.1.6.1 Trailer shall be equipped with unbreakable, molded, solid color, UV-stabilized HDPE (High Density Polyethylene) fenders, completely closed on the inside.

3.1.6.2 Fenders shall be secured to trailer frame with zinc-plated steel thread forming screws and fender washers so as to facilitate easy repair or replacement.

### 3.1.7 Leveling Jacks

3.1.7.1 Trailer shall be equipped with four telescoping jacks consisting of 2 x 2 inch x 12 gauge perforated galvanized steel tubing equipped with a 3 x 3 x 3/16 inch x 6 inch wide steel foot plate.

3.1.7.2 Jack stands shall be inserted into 2 1/4 x 2 1/4 inch x 12 gauge galvanized steel tubing, welded to the trailer frame at a 45 degree angle.

3.1.7.3 Jack stands shall be locked into position by 3/8-inch zinc-plated steel tab lock pins secured to trailer frame by nylon-coated stainless steel lanyards.

3.1.7.4 Jack stands and tongue jack shall be configured such that unit can be set up on jack stands, level, in operating position, with the trailer wheels raised completely off the ground, permitting removal of wheels and tires for additional security.

3.1.7.5 Jack stands shall be configured such that, when in the operating position, they create a footprint of at least 93 inches, front to rear, and 56 inches, side to side, to provide adequate stability of unit in high winds.

### 3.1.8 Tires and Wheels

3.1.8.1 Tires shall be B78-13 Load Range C.

3.1.8.2 Wheels shall be 13-inch x 4 1/2-inch, 5-lug pattern (4 1/2-inch bolt circle), white spoke dress wheel.

3.1.8.3 Wheels and tires shall be sized according to load requirements of trailer and axle.

## 3.2 Arrow Panel Support

3.2.1 Trailer superstructure shall provide complete support of the arrow panel in the transport (down) position. Cantilevered support of arrow panel is not acceptable!

3.2.2 Trailer superstructure shall be completely assembled with removable fasteners to accommodate quick, easy maintenance and repair.

3.2.3 All fasteners shall be rust resistant and equipped with either all metal (stover) or nylon lock stop-nuts to prevent loosening of fasteners during normal transportation and operation.

3.2.4 All aluminum to steel attachments shall be made with stainless steel hardware and stainless steel or nylon spacers so as to minimize galvanic corrosion.

#### 3.2.5 Arrow Panel Lifting Mechanism

3.2.5.1 Arrow panel lifting mechanism shall consist of a minimum 1,000-pound capacity, automatic brake type winch with 1/4-inch wire rope capable of holding the arrow panel in any position from full upright to the travel (down) position.

3.2.5.2 Winch shall be zinc-plated to minimize rust and corrosion.

3.2.5.3 Winch shall be designed such that the handle can be removed, for added security, without interfering with the operation of the automatic brake.

3.2.5.4 Arrow panel shall be secured in the operating (up) position by two stainless steel, spring-loaded, locking pins. Locking of the arrow panel in the down position shall not be required; however, available as an field installable option.

3.2.6 Trailer superstructure shall provide for support and operation of solar array, with solar array positioned to accommodate charging in both the operating and the traveling positions.

3.2.7 Solar array shall fold flat and flush onto back of arrow panel when arrow panel is in the transport (down) position so as to minimize wind resistance without the need for an air deflector or spoiler.

3.2.8 Trailer superstructure shall be equipped with a formed steel upper rear crossmember and formed steel upper side members to reinforce the arrow panel and solar array support frame.

3.2.9 Trailer superstructure shall be equipped with an integral sighting device, welded in place, to accommodate proper alignment of the arrow panel with oncoming traffic, during setup.

## 4. Arrow Panel

### 4.1 Dimensions

4.1.1 Width Overall - 96 in. (244 cm)

4.1.2 Height Overall - 48 in. (122 cm)

4.1.3 Depth Overall - 3 in. (7.6 cm)

### 4.2 Construction

4.2.1 Arrow panel frame, including internal braces, shall consist of 3 x 1 x 1/8 inch extruded aluminum alloy channel, pulse MIG welded at corners and at internal braces.

4.2.2 Front and rear surfaces shall consist of .063 inch aluminum alloy sheet with a baked matte black enamel finish.

4.2.3 Front and rear panels shall be attached to welded aluminum frame with 8-32 x 3/8-inch, black-

finish, stainless steel, torx-head, thread-rolling screws located on 6-inch centers. In order to facilitate simple repair, rivets or any other form of non-removable fastener shall not be permitted.

4.2.4 Arrow panel shall be equipped with 2 1/2-inch diameter by 1-inch thick rubber bumpers to support panel when in the transport (down) position.

4.2.5 Arrow panel shall be equipped with a light sensing device to monitor ambient light and provide information to the control module to regulate the intensity of the arrow panel lamps.

### **4.3 Lamps**

4.3.1 Arrow panel shall be equipped with 15 or 25 lamps, approximately five (5) inches in diameter.

4.3.2 Arrow panel lamps shall consist of an array of at least 21 LEDs mounted in a weather resistant high impact polycarbonate housing.

4.3.3 The arrow panel lamp housing shall be completely sealed to protect the internal components from corrosion caused by harsh environmental conditions.

4.3.4 The outer surface of the lamp shall be convex (diverging) to minimize reflection of incident light and to maximize the contrast of the arrow panel display.

4.3.5 The lamps shall provide an Approximate Initial Maximum Beam Candlepower of 1000 candela typical, 750 candela minimum, over an operating voltage range of 10.7 to 16.0 VDC. The lamp intensity shall remain constant over the entire operating voltage range.

4.3.6 The lamps shall produce a field spread (angularity) of 30 degrees horizontal by 6 degrees vertical.

4.3.7 The color of the light produced by the lamps shall be amber (approximate wavelength of 592 nanometers).

4.3.8 The lamps shall have a minimum life expectancy of 100,000 hours (200,000 hours typical).

4.3.9 The lamps shall be equipped with quick disconnect terminals to accommodate quick, easy replacement of lamps without regard to polarity. The lamps shall not be polarity sensitive (i.e. capable of connection and operation without concern for polarity).

4.3.10 Arrow panel lamps shall be equipped with a automatic polarity detection circuit to enable operators to connect quick disconnect terminals to lamp without regard to polarity (i.e. either orientation) and ensure proper operation.

4.3.11 Arrow panel lamps shall be secured to the arrow panel by a black, molded, impact-resistant shroud, approximately five (5) inches in diameter and approximately four (4) inches high. Lamp shroud shall mount to panel with stainless steel screws through keyholes such that the shroud and lamp can be removed from the panel without the need to remove the screws from the panel.

4.3.12 Arrow panel lamps shall be keyed to the shroud and the shroud shall be keyed to the front panel so the lamps are secured to the front panel with proper lamp beam orientation.

4.3.13 The rear of the arrow panel shall be equipped with three (3) ultra-bright LEDs, in watertight housings, to indicate the arrow panel pattern currently being displayed. This provides a visual indication to individuals in the work zone that the arrow panel is functioning properly.

### **4.4 Connectors and Wiring**

4.4.1 Arrow panel shall be equipped with a watertight connector, AMP CPC Series 2 Receptacle P/N 205843-1 with Peripheral Seal P/N 206403-3, or equivalent, to permit arrow panel to be removed quickly and easily for repair. Arrow panel control cable connector shall be suitable for outdoor use and completely sealed against moisture. Arrow panel control cable connector shall be equipped with gold flashed pins to provide maximum electrical contact reliability.

4.4.2 All internal wiring pass throughs shall be fitted with plastic grommets to prevent wire damage and/or failure.

4.4.3 All internal wiring shall be secured to inside of front panel to prevent wire damage and/or failure.

## **5. Main Control Module**

### **5.1 Physical**

5.1.1 Control module shall consist of a totally solid state fully integrated device which provides for control of the arrow sign panel, lamp pattern generation, battery status monitoring and indication, solar electric charge control, low battery voltage disconnect, high battery voltage disconnect, reverse battery polarity, surge protection and remote control and tracking via an integrated cellular/GPS transceiver module.

5.1.2 Control module shall be enclosed in a weather resistant, lockable, molded HDPE (High Density Polyethylene) enclosure secured to the trailer chassis *or* enclosed in a weather resistant enclosure mounted inside the arrow panel with a lockable aluminum cover to prevent tampering while in service (*specify desired controller location*).

5.1.3 Control module front panel shall be completely sealed to accommodate operation in all types of weather.

5.1.4 Control module shall be constructed of all industrial temperature range components to insure reliable operation under all outdoor environmental conditions.

5.1.5 Control module power and control cables shall be equipped with locking type connectors to provide secure reliable operation while permitting quick, easy removal of the control module for maintenance and repair.

### **5.2 General Operation**

5.2.1 Control module shall be equipped with an array of membrane push buttons to enable an operator to locally select the desired arrow panel pattern with the push of a single button.

5.2.2 Control module shall be equipped with multicolored LED indicators for local monitoring of battery voltage (charge) level, solar charger activity, and lamp intensity control settings.

5.2.3 Control module shall provide for full local and remote (via integrated cellular transceiver and antenna) control of the arrow panel including geographic location monitoring (via integrated GPS module and antenna) without the need for additional hardware, software, external computers or hand-held control devices.

5.2.4 Control module shall include all necessary hardware and software to operate the arrow panel locally (via an array of membrane push buttons) and remotely (via integrated cellular transceiver and

antenna), including geographic location monitoring (via integrated GPS module and antenna). Full remote control (including GPS mapping) via internet accessible server based remote control software shall be included free of charge from date of purchase (i.e. cellular service shall be included free from date of original purchase for life of the unit).

5.2.5 Control module embedded CPU shall incorporate an ARM based microprocessor design to insure future hardware and software compatibility through upgrades provided by manufacturer free for life of the machine. Operating system shall be Linux based and include multiple watchdog timers to ensure automatic system restarts in the event that any critical function stops working properly or communication with remote control servers is interrupted.

5.2.6 Control module operating processor, firmware and software shall be remotely upgradeable over an IP addressable network connection via the integrated cellular transceiver. Additionally, upgrades shall be provided by manufacturer free of charge for life of machine and automatically applied via integrated cellular transceiver and included remote control service from date of original purchase.

5.2.7 Control module shall employ lamp power drivers that provide completely automatic short circuit and over temperature protection. If lamp wire leads are shorted together or to the chassis or if the wrong type of lamp is connected to the lamp wire leads no damage should occur to the lamp power drivers.

5.2.8 Control module shall be completely protected against reverse battery and solar array connections.

5.2.9 Integrated charge control circuit shall provide for dual slope, temperature compensated control so as to maximize transfer of energy into the battery while protecting batteries from overcharging, minimizing outgassing and minimizing loss of electrolyte.

5.2.10 Control module shall be equipped with a lamp intensity control circuit to automatically adjust arrow panel lamp intensity to suit changing ambient lighting conditions and to maintain consistent lamp intensity over a wide operating voltage range. A manual override shall be provided for the automatic intensity control circuit so that minimum or maximum lamp intensity can be manually selected. In the event that the lamp intensity control function is inadvertently left in the High or Low setting, the lamp intensity control circuit shall return to the Auto setting upon the occurrence of the first day/night cycle sensed by the light sensing device in the arrow panel. This feature prevents the use of potentially hazardous lamp intensities, i.e. low intensity during daylight hours and high intensity at night, and unexpected excess energy consumption.

5.2.11 Control module shall provide for the following display patterns:

1. Right Arrow - 10 lamps flashing in unison, forming an arrow.
2. Left Arrow - 10 lamps flashing in unison, forming an arrow.
3. Double Arrow - 5 lamps in each arrow head, 3 in center of shaft, flashing in unison.
4. Caution Bar - 7 lamps in center horizontal bar, flashing in unison.
5. Four-Corner Caution - 4 lamps in outer most corners, flashing in unison.
6. Sequential Right Arrow - 2 lamps in left side of center bar in first phase, plus 3 lamps in middle of center bar in second phase, plus 5 lamps in arrow head in third phase flashing in sequence.
7. Sequential Left Arrow - 2 lamps in right side of center bar in first phase, plus 3 lamps in middle of center bar in second phase, plus 5 lamps in arrow head in third phase flashing in sequence.

25 Lamp Panels only:

8. Right Sequential Chevron - 5 lamps on left side of the panel forming a right-hand arrow head in the first phase, plus 5 lamps in the center forming a second right-hand arrow head in the second phase, plus 5 lamps forming a third right-hand arrow head on the right side of the panel in the third and final phase.

9. Left Sequential Chevron - 5 lamps on the right side of the panel forming a left-hand arrow head in the first phase, plus 5 lamps in the center forming a second left-hand arrowhead in the second phase, plus 5 lamps forming a third left-hand arrow head on the left side of the panel in the third and final phase.

10. Sequential Double Arrow - 1 lamp in the center of the panel in the first phase, plus the two lamps adjacent to the center lamp forming a bar in the center of the panel in the second phase, plus 5 lamps in each arrow head (total 10 lamps) in the third phase.

11. Alternating Double Diamonds - 8 lamps in the center of the panel forming a diamond shape in the first phase, dark in the second phase, 16 lamps forming diamond shapes at each end of the panel in the third phase, and dark in the fourth phase.

5.2.12 Control module power consumption, not including lamps, shall be less than 0.5 Watts so as to optimize overall energy consumption.

5.2.13 Control module operating firmware shall be field upgradeable.

5.2.14 Control module shall be equipped with positive locking connectors to provide for reliable operation and easy removal for maintenance and repair. Battery bank and solar array power connector shall be AMP CPC, or equivalent, with a 20-Amp per contact minimum current rating to insure minimum voltage drop and maximum energy transfer. Arrow panel control connector shall be AMP D-subminiature 37-pin right angle female header AMP P/N 747847-5, or equivalent, with gold flashed pins for optimum reliability.

## **6. Power System**

### **6.1 General**

6.1.1 Operating Voltage - 12 Volts DC nominal

6.1.2 Operating Energy Requirement - Single Flashing Arrow, <6 Amp Hours per day nominal at Spring or Fall Equinox (i.e. 12 hours of daylight, 12 hours of darkness)

6.1.3 Main Power Switch - Main power switch shall be unnecessary. When arrow panel pattern selection switch is in the OFF position, control module shall automatically shut down all unnecessary operations to reduce energy consumption to less than 0.05 Watts. Solar generator charge controller shall operate automatically, as required, during daylight hours and shut down completely at night.

### **6.2 Battery Bank**

6.2.1 Number of batteries - 2 std. - upgradeable to 4

6.2.2 Battery type - 6-Volt, heavy duty, deep cycle (Flooded Lead Acid, Gel-Cell or AGM - Specify)

6.2.3 Energy capacity - 260 Amp-Hours nominal - upgradeable to 520 Amp-Hours. Sufficient energy capacity to operate the arrow panel, displaying a single flashing arrow for more than 30 days, without any energy input from the solar array.

6.2.4 Battery / Equipment Compartments

6.2.4.1 Battery / Equipment Compartments shall be constructed of molded HMWPE (High Molecular Weight Polyethylene), color impregnated with Federal Safety Orange with 0.5% UV stabilizer added to prevent fading.

6.2.4.2 Compartments shall be designed to completely contain spills from a failed or damaged battery case.

6.2.4.3 Compartments shall be capable of supporting an operator standing on top of the battery / equipment compartment to service unit.

6.2.4.4 Compartments shall be designed such that the lid automatically latches in the closed position and holds the batteries in place. Lid shall be equipped with a locking hasp capable of being locked in the closed position with a standard padlock.

6.2.4.5 Lid shall be secured to compartment by an integral hinge that permits the lid to be completely removed from the compartment for service.

6.2.4.6 Compartments shall be designed to provide adequate ventilation for the batteries during charging yet prevent the ingress of water during use or transport.

6.2.4.7 Compartments shall be capable of housing four (4) BCI Group GC-2 batteries.

### **6.3 Solar Array**

6.3.1 Solar array shall remain horizontal in both the travel (down) and the operating (up) positions. Solar array shall erect automatically when arrow panel is raised to operating position.

6.3.2 Photovoltaic module type - Single crystal (monocrystalline) silicon

6.3.3 Number of solar cells per module - 36

6.3.4 Solar array power output - 40 Watts std. - upgradeable to 80 Watts (peak)

6.3.5 Entire unit shall tilt back and rest on jack stands for fast, easy cleaning and maintenance.

6.3.6 Solar array energy output shall be sufficient to operate the arrow sign, under normal operating conditions, with the solar array in a flat, horizontal position. It shall not be necessary to tilt or rotate the solar array to provide sufficient energy output from the solar array to operate the arrow panel continuously.

6.3.7 Photovoltaic module junction boxes shall be equipped with watertight strain reliefs at all cable entry points.

### **6.4 Wiring and Cabling**

6.4.1 All external wire and cable shall be covered with a weatherproof jacket, rated for outdoor use, and secured to trailer frame or superstructure with UV resistant cable ties and anchors.

6.4.2 All wire and cable fittings shall be sealed at bulkheads or enclosure entry points.

6.4.3 All wiring shall be marine grade, multi-strand, tin-plated copper with PVC insulation rated for outdoor use.

6.4.4 All power system wire terminals shall be tin-plated copper to minimize the effects of galvanic corrosion.

6.4.5 Main power wiring shall be 16 AWG minimum.

6.4.6 Battery power and solar array power cables shall be equipped with AMP CPC connectors to mate with the connectors specified in Section 5, Main Control Module.

## **6.5 Charge Controller**

6.5.1 Solar power system shall include a solid state charge controller.

6.5.2 Charge controller shall monitor battery voltage and ambient temperature.

6.5.3 Charge controller shall regulate energy flow from the solar array into the battery bank so as to avoid over charging of the batteries and minimize the consumption of electrolyte.

## **7. Documentation**

### **7.1 Operation and Maintenance Manual (Available on CD-ROM and Website)**

7.1.1 Installation and Operation

7.1.2 Maintenance

7.1.3 Service, Repair & Troubleshooting

7.1.4 Wiring Diagrams

7.1.5 Parts Lists & Assembly Drawings

7.1.6 Specifications

### **7.3 User Guide**

7.3.1 Pre-transport checklist.

7.3.2 Job site setup checklist.

7.3.3 Basic programming instructions.

7.3.4 Basic system status evaluation.

7.3.5 Weatherproof card attached to unit with nylon-coated stainless steel lanyard.

## **8. Maintenance**

## **8.1 Scheduled Maintenance**

8.1.1 Solar Array - Clean with water and mild detergent as needed.

8.1.2 Battery Bank - Check electrolyte level once each month and add distilled water as needed.

## **8.2 Preventive Maintenance**

8.2.1 Battery Bank - Clean and tighten battery electrical terminals.

## **9. Warranty**

### **9.1 Standard Warranty**

9.1.1 Bumper to Bumper - Five (5) full years

9.1.3 LED Lamps - Ten (10) years

9.1.4 Solar Panels - Ten (10) years

**9.2 Extended Warranty** - Consult factory

## **10. Options**

### **10.1 Battery Charger**

10.1.1 Charger type - Switching regulator, constant voltage with automatic switch to maintenance or trickle charge.

10.1.2 Input Voltage - 110 VAC 50/60 Hz

10.1.3 Available models with typical recharge times.

10.1.3.1 45-Amp - 13 hours

10.1.4 Battery charger unit shall install in the field with minimum effort.

### **10.2 Combination Coupler**

10.2.1 Combination coupler shall provide for quick easy selection of a 2-inch ball coupler or a 2 1/2-inch pintle ring.

10.2.2 Combination coupler shall provide for the quick, easy removal of coupler and safety chains for additional security.

10.2.3 Combination coupler shall install on front of tongue, secured with 1/2-inch diameter hitch pins locked into place with locking-type (rue ring) pins for maximum safety and reliability.

10.2.4 Combination coupler shall comply with SAE J684 standards for Class II (2) trailers.

**10.3 Adjustable Height Coupler**

10.3.1 Adjustable height coupler shall accommodate hitch heights ranging from 18 to 28 inches.

10.3.2 Adjustable height coupler shall accept a 2-inch ball coupler or a 3-inch pintle ring.

10.3.3 Adjustable height coupler shall install on front of trailer tongue, secured with 1/2-inch diameter hitch pins locked into place with locking-type (rue ring) pins or with 1/2-inch diameter, grade 8 bolts and all metal (stover) lock nuts.

10.3.4 Combination coupler shall comply with SAE J684 standards for Class II (2) trailers.