


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.

LOREN STAYER, OWNER
(Name, Title)
LOREN STAYER, OWNER
(Printed Name and Title)
1290 FOX LANE, MOGANDRE, OH 44260
(Address)
330-608-5002
(Phone Number) / (Fax Number)
LOREN@IRONARMOUR.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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated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.

IRON ARMOUR, LLC
(Company)
 LOREN STAYER, OWNER
(Authorized Signature) (Representative Name, Title)
LOREN STAYER, OWNER
(Printed Name and Title of Authorized Representative)
7/24/2017
(Date)
330-608-5002
(Phone Number) (Fax Number)

07/24/17 13:50:27
Purchasing Division

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

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

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 person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify 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 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 14, 2017

Submit Questions to: Mark Atkins, Senior Buyer
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)
Email: Mark.A.Atkins@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: Traffic Signal Equipment
BUYER: Mark Atkins, File#33
SOLICITATION NO.: CRFQ 0803 DOT1700000094
BID OPENING DATE: July 25, 2017
BID OPENING TIME: 1:30pm EST
FAX NUMBER: 304-558-3970

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 of 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: July 25, 2017 @ 1:30pm EST

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. ALTERNATES: 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.

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 only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Vendor Preference Certificate form has been attached hereto to allow Vendor to apply for the preference. Vendor's failure to submit the Vendor Preference Certificate form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.

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.

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
upon 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 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. 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 thirty-six (36) months in total. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

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, the vendor agrees that maintenance, monitoring, or warranty services will be provided for one year thereafter with an additional _____ successive one year renewal periods or multiple renewal periods of less than one year provided that the multiple renewal periods do not exceed _____ months in total. Automatic renewal of this Contract is prohibited.

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 _____. The performance bond must be received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.

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 entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award 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 prior to Contract award. Subsequent to contract award, and prior to the insurance expiration date, 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 mandated herein, including but not limited to, policy cancelation, policy reduction, or change in insurers. The insurance coverages identified below must be maintained throughout the life of this contract. 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:

Automobile Liability Insurance in at least an amount of: _____

Professional/Malpractice/Errors and Omission Insurance in at least an amount of:

Commercial Crime and Third Party Fidelity Insurance in an amount of:

Cyber Liability Insurance in an amount of: _____

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

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. LITIGATION BOND: The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.

11. LIQUIDATED DAMAGES: Vendor shall pay liquidated damages in the amount of \$40.00 per day (per Specifications Section 6.2)

for each calendar day beyond the 32 working days ARO, until order is received in full.

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.

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.

14. PAYMENT: 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. PURCHASING CARD ACCEPTANCE: The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

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 § 148-1-6.1.e.

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: 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.

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.

Revised 04/07/2017

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. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.

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. BANKRUPTCY: In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.

31. 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>.

32. 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.

33. 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. 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.

34. 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.

35. 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.

36. 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.

37. 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.

38. PURCHASING AFFIDAVIT: In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.

39. 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"). 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. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

40. 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.

41. 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.

42. 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.

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

43. 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.

44. 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.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: 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.

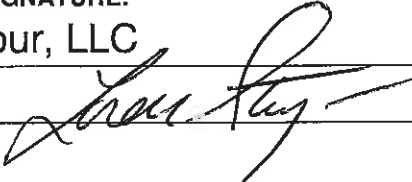
"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' 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 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: Iron Armour, LLC

Authorized Signature:  Date: July 24, 2017

State of OHIO

County of Delaware, to-wit:

Taken, subscribed, and sworn to before me this 24 day of July, 2017.

My Commission expires 9-27, 2017.

AFFIX SEAL HERE



VIRGINIA PAGE DOUGLASS
Notary Public, State of Ohio
My Comm. Expires 09-27-2021

NOTARY PUBLIC



Purchasing Affidavit (Revised 08/01/2015)

EXHIBIT A Pricing Pages

Item Number	Estimated Quantity	Unit of Measure	CRFQ 0803 DOT1700000094 Description	UNSPC CODE	Unit Price	Extended Cost
SECTION 1						
1	20	ea	Siemens Eagle Traffic Controller M50 Series or Equal	46161504	\$ -	\$ -
2	10	ea	Siemens Eagle Master Traffic Controller M50 Series or Equal	46161504	\$ -	\$ -
3	30	ea	Repairs of Siemens Eagle Traffic Controllers or Equal	46161504	\$ -	\$ -
4	1	ea	Eagle Traffic Signal TS2 Pole Mounted Signal Cabinet or Equal	46161504	\$ -	\$ -
5	1	ea	Eagle TS2 Ground Mounted Traffic Signal Cabinets or Equal	46161504	\$ -	\$ -
Section 1 Grand Total						\$ -
SECTION 2						
6	20	ea	Econolite Cobalt ATC Traffic Signal Controller or Equal	46161504	\$ -	\$ -
7	10	ea	Econolite Master Signal Controller or Equal	46161504	\$ -	\$ -
8	20	ea	Repair of Econolite Traffic Controller or Equal	46161504	\$ -	\$ -
9	1	ea	Econolite TS2 Pole Mounted Signal Cabinet or Equal	46161504	\$ -	\$ -
10	1	ea	Econolite TS Ground Mounted Signal Cabinet or Equal	46161504	\$ -	\$ -
Section 2 Grand Total						\$ -
SECTION 3						
11	10	ea	Iteris RZ4 Vehicle Detection Camera or Equal	46161504	\$ -	\$ -
12	5	ea	Repair of Iteris RZ4 Video Detection Camera or Equal	46161504	\$ -	\$ -
13	10	ea	Iteris Vehicle Detection Card or Equal	46161504	\$ -	\$ -
14	10	ea	Repair of Iteris Video Detection Card or Equal	46161504	\$ -	\$ -
Section 3 Grand Total						\$ -
SECTION 4						
15	10	ea	Autoscope Vehicle Detection Video Camera or Equal	46161504	\$ -	\$ -
16	10	ea	Repair of Autoscope Vehicle Detection Camera or Equal	46161504	\$ -	\$ -
17	10	ea	Autoscope Vehicle Detection Cards or Equal	46161504	\$ -	\$ -
18	10	ea	Repair of Autoscope Vehicle Detection Cards or Equal	46161504	\$ -	\$ -
Section 4 Grand Total						\$ -
SECTION 5						
19	1	ea	Wavetronix Smart Sensor Matrix Vehicle Detection Radar or Equal	46161504	#####	\$ 5,350.00
20	1	ea	Wavetronix Smart Sensor"Advance" Matrix Vehicle Detection Radar or Equal	46161504	#####	\$ 5,650.00
21	10	ea	Wavetronix Smart 2-Channel Detection Card or Equal	46161504	\$ 385.00	\$ 3,850.00
22	5	ea	Wavetronix 4-Channel Vehicle DetectionCard or Equal	46161504	\$ 425.00	\$ 2,125.00
Section 5 Grand Total						\$ 16,975.00
SECTION 6						
23	1	ea	Smart Micro Universal Medium Range Radar (UMRR) "Stop Bar"+Vehicle Detection Radar	46161504	\$ -	\$ -
24	1	ea	Smart Micro Universal Medium Range Radar (UMRR) "Stop Bar"+ Advance Vehicle Detection Rada	46161504	\$ -	\$ -
25	10	ea	Smart Micro Vehicle Detection Radar Controller Interface Card or Equal	46161504	\$ -	\$ -

			Section 6 Grand Total			\$ -
			SECTION 7			
26	30	ea	TOMAR Preemption Control Systems Detectors or Equal	46161504	\$ -	\$ -
27	20	ea	TOMAR Preemption Control Systems Detection Cards or Equal	46161504	\$ -	\$ -
28	15	ea	Repair of TOMAR Preemption Control Systems Detection Cards or Equal	46161504	\$ -	\$ -
			Section 7 Grand Total			\$ -
			SECTION 8			
29	30	ea	Traffic Signal Conflict Monitor	46161504	\$ -	\$ -
30	15	ea	Traffic Signal Malfunction Management Unit	46161504	\$ -	\$ -
31	30	ea	Traffic Signal Bus Interface Unit	46161504	\$ -	\$ -
32	150	ea	Green LED Signal Lamp	46161504	\$ -	\$ -
33	150	ea	Yellow LED Signal Lamp	46161504	\$ -	\$ -
34	150	ea	Red LED Signal Lamp	46161504	\$ -	\$ -
35	60	ea	Green Arrow LED Signal Lamp	46161504	\$ -	\$ -
36	60	ea	Yellow Arrow LED Signal Lamp	46161504	\$ -	\$ -
37	20	ea	Red Arrow LED Signal Lamp	46161504	\$ -	\$ -
38	30	ea	LED Pedestrian Signal Head with Housing	46161504	\$ -	\$ -
39	5	ea	Three -head LED Traffic Signal Enclosure	46161504	\$ -	\$ -
40	5	ea	Five - head LED Traffic Signal Enclosure	46161504	\$ -	\$ -
41	30	ea	Audible Pedestrian Push Button	46161504	\$ -	\$ -
42	50	ea	TS1 Cabinet Power Supply	46161504	\$ -	\$ -
43	15	ea	TS2 Cabinet Power Supply	46161504	\$ -	\$ -
44	5	ea	Time Clocks	46161504	\$ -	\$ -
45	50	ea	56K Wired Modems	46161504	\$ -	\$ -
46	20	ea	Flash Transfer Relays	46161504	\$ -	\$ -
47	5	ea	Solar Flasher Controller	46161504	\$ -	\$ -
48	5	ea	Solar Flasher Motor Unit	46161504	\$ -	\$ -
			Section 8 Grand Total			\$ -
			SECTION 9			
49	40	ea	4G/LTE Wireless Modems	46161504	\$ -	\$ -
			Section 9 Grand Total			\$ -
			SECTION 10			
50	20	ea	ENCOM Radio Transceivers or Equal	46161504	\$ -	\$ -
			Section 10 Grand Total			\$ -
			SECTION 11			
51	10	ea	Intuicom Radio Transceivers or Equal	46161504	\$ -	\$ -
			Section 11 Grand Total			\$ -

The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall Grand Total cost by section as shown on the Pricing Pages. Each section shall be evaluated independently and award shall be made to multiple vendors if needed.

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1. Application is made for 2.5% vendor preference for the reason checked:

- Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
- Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification;
- Bidder is a resident vendor partnership, association, or corporation with at least eighty percent of ownership interest of bidder held by another entity that meets the applicable four year residency requirement; **or**,
- Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,

2. Application is made for 2.5% vendor preference for the reason checked:

- Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

3. Application is made for 2.5% vendor preference for the reason checked:

- Bidder is a nonresident vendor that employs a minimum of one hundred state residents, or a nonresident vendor which has an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia and employs a minimum of one hundred state residents, and for purposes of producing or distributing the commodities or completing the project which is the subject of the bidder's bid and continuously over the entire term of the project, on average at least seventy-five percent of the bidder's employees or the bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years and the vendor's bid; **or**,

4. Application is made for 5% vendor preference for the reason checked:

- Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,

5. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

- Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,

6. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

- Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.

- Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) rescind the contract or purchase order; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Iron Armour, LLC - Loren Stayer

Signed: 

Date: July 24, 2017

Title: Owner

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

CRFQ 0803 DOT1700000094
REQUEST FOR QUOTATION
Traffic Signal Parts and Equipment

3.1.14.1 Contract Item #15 shall be an Autoscope AIS-IV series (Model # 703170) or Equal vehicle detection video camera with associated connectors, cable, installation hardware and accessories including surge protection or equivalent.

3.1.16 Contract Item # 16 – Non-Warranty Repair of Autoscope Vehicle Detection Video Camera or Equal

3.1.16.1 Contract Item #16 shall be for the repair of Autoscope vehicle detection video cards. The repaired items shall be repaired to new working condition and with a description of the repair and certificate of repair confirming it was repaired and verifying the date of repair. Repairs must be made by an Autoscope or Equal certified factory workshop and by a technician with a manufacturer's certification that they are certified to work on these items.

3.1.17 Contract Item #17 - Autoscope Vehicle Detection Video Cards

3.1.15.1 Contract Item #17 shall be an Autoscope Rackvision Pro 2 series (Model # PRO2-A700-1030) or Equal vehicle detection video card or equivalent.

3.1.18 Contract Item # 18 - Non-Warranty Repair of Autoscope Vehicle Detection Video Cards or Equal

3.1.18.1 Contract Item #18 shall be for the repair of Autoscope vehicle detection video cards. The repaired items shall be repaired to new working condition and with a description of the repair and certificate of repair confirming it was repaired and verifying the date of repair. Repairs must be made by an Autoscope or Equal certified factory workshop and by a technician with a manufacturer's certification that they are certified to work on these items.

3.1.19 Contract Item #19 - Wavetronix Smartsensor "Matrix" Vehicle Detection Radar or Equal

CRFQ 0803 DOT1700000094
REQUEST FOR QUOTATION
Traffic Signal Parts and Equipment

3.1.19.1 Contract Item #19 shall be a Wavetronix Smartsensor Matrix series (Model #SS225) or equivalent Radar Presence Detection (RPD) and shall provide accurate presence-detection of moving vehicles up to 140 feet from the stop bar. The RPD shall be provided with all required cabinet hardware, mounting brackets, cables, and connections.

3.1.20 Contract Item #20 - Wavetronix Smartsensor "Advance" Vehicle Detection Radar or Equal

3.1.20.1 Contract Item #20 shall be a Wavetronix Smartsensor Advance (Model #SS200E) or equivalent Radar Advance Digital Detection (RADD) and shall provide accurate advanced presence-detection of moving vehicles or clusters of vehicles up to 900 feet from the stop bar. The RADD shall be provided with all required cabinet hardware, mounting brackets, cables, and connections.

3.1.21 Contract Item #21 - Wavetronix 2-Channel Vehicle Detection Radar Card or Equal

3.1.21.1 Contract Item #21 shall be a Wavetronix (Model # Click! 112 series) or Equal 2-channel vehicle detection radar card or equivalent.

3.1.22 Contract Item #22 - Wavetronix 4-Channel Vehicle Detection Radar Card or Equal

3.1.22.1 Contract Item #22 shall be a Wavetronix (Model # Click! 114 series) or Equal 4-channel vehicle detection radar card or equivalent.

3.1.23 Contract Item #23 - Smartmicro Universal Medium Range Radar (UMRR) "Stop Bar +" Vehicle Detection Radar

3.1.23.1 Contract Item #23 shall be a Smartmicro UMRR "Stop Bar +" (Model #UMRR-0A or Equal, Type 30 with junction box #JBOX-0001) or equivalent Radar Presence Detection (RPD) and shall provide accurate presence-detection of moving vehicles up to 344 feet (105 meters) from the stop bar. The RPD shall be provided with all required cabinet hardware, mounting brackets, cables, and connections.

SOLICITATION NUMBER: CRFQ 0803 DOT1700000094

Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as CRFQ 0803 DOT1700000094 ("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 publish the Agency responses to the questions submitted by Vendors during the Technical Questioning period.

No other changes made.

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.

Addendum 1 Attachment A
CRFQ-0603-DOT1700000094

1. Will Dialight model 433-227C-001XL be approved as equivalent for Item # 32, green LED signal lamp. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.vir.gov/highways/mcs/ Documents/2016%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

2. Will Dialight model 433-323C-901XL be approved as equivalent for Item # 33, yellow LED signal lamp. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.vir.gov/highways/mcs/ Documents/2016%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

3. Will Dialight model 433-1210-003XL be approved as equivalent for Item # 34, red LED signal lamp. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.vir.gov/highways/mcs/ Documents/2016%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

4. Will Dialight model 432-2374-001XOD be approved as equivalent for Item # 35, green arrow LED signal lamp. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.vir.gov/highways/mcs/ Documents/2016%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

5. Will Dialight model 431-3334-901XOD be approved as equivalent for Item # 36, yellow arrow LED signal lamp. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.vir.gov/highways/mcs/ Documents/2016%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

6. Will Dialight model 432-1314-001XOD be approved as equivalent for Item # 37, red arrow LED signal lamp. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.vir.gov/highways/mcs/ Documents/2016%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

Addendum 1 Attachment A
CRFQ-0803-DOT1100000034

7. Will Dialight model 430-6479-001X be approved as equivalent for the LED used with Item # 38, LED Pedestrian Signal Head With Housing. It is an approved model listed on the WVDOTs approved product list at http://www.transportation.wv.gov/highways/most/Documents/2015%20Reorganized%20Approved%20Source%20List/Traffic%20Control/LED%20Traffic%20Signals10_16_15.pdf

Answer: Any model on the APL is approved.

8. Is the signal housing for Item 38 to be aluminum or polycarbonate?

Answer: Either will be accepted.

9. Does item 38 require mounting hardware to be provided with the pedestrian signal head, if so what type?

Answer: No.

10. Are signal visors to be provide with item 39, Three Head LED Traffic Signal Enclosure and item 40, Five Head Traffic Signal Enclosure? If so what type?

Answer: Yes, Plastic.

11. Will Econolite Brand Vehicular Signal Heads be acceptable as equivalent for item 39, Three Head LED Traffic Signal Enclosure and item 40, Five Head Traffic Signal Enclosure?

Answer: Yes, provided they are compatible and interchangeable with other brands in the field.

12. Is Mounting Hardware required to be provided with item 39, Three Head LED Traffic Signal Enclosure and item 40, Five Head Traffic Signal Enclosure? if so what type?

Answer: No.

13. Item 41, Audible Pedestrian Pushbutton lists a 4 wire Polara system which is not currently on the WVDOT approved product list at <http://www.transportation.wv.gov/highways/most/Pages/audiblepedestrian/s.aspx> as acceptable. Are items not on the approval list acceptable for this contract? Would a Campbell Company AGPS015 pushbutton be acceptable as equivalent for this item.

Answer: Yes, as long as it is compatible and interchangeable with the existing brands on the APL or in use currently in the field.

Addendum_1 Attachment_A
CRFQ-0803-DOT1700000094

14. Item 42 is listed as a TS1 cabinet power supply and lists a model which is a TS2 power supply. Is this actually intended to be a TS2 cabinet power supply? Will an Econolite power supply be accepted as equivalent to the CPS105?

Answer: Item 42 is a TS1 power supply and any brand is approved at this time, provided it is compatible and interchangeable with all systems and not a specific brand as there are more than 1 brand signal cabinet and signal systems in use in the field.

15. Will an Econolite brand TS2 cabinet power supply be accepted as equivalent for item 43 TS2 cabinet power supply?

Answer: Yes Item 43 is a TS2 power supply and any brand is approved at this time, provided it is compatible and interchangeable with all systems and not a specific brand as there are more than 1 brand signal cabinet and signal systems in use in the field.

16. Will an RTC AP21 time clock be accepted as equivalent for item 44 time clock?

Answer: Yes, as long as it is compatible or interchangeable with existing brands in the field.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFO 0303 DOT1700000094

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.

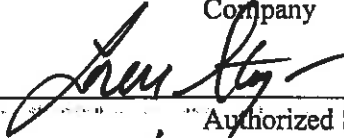
Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

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 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 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.

IRON ARMOR, LLC
Company

Authorized Signature
7/24/2017
Date

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

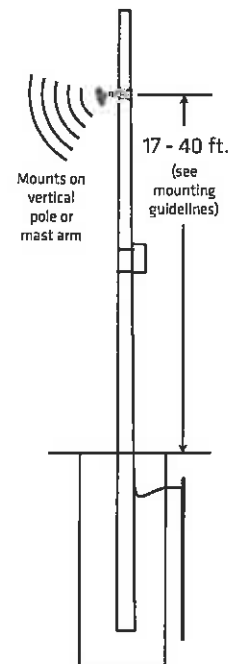
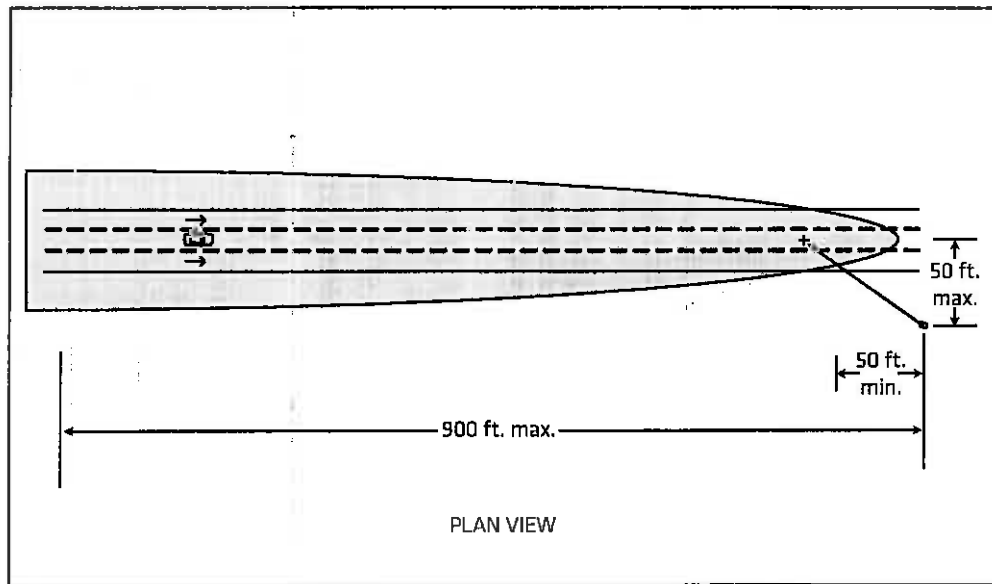
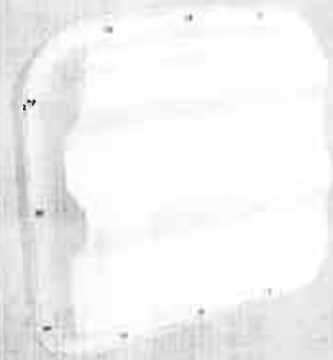


SmartSensor Advance Extended Range

SmartSensor™ Advance Extended Range is the first traffic device to use advance detection to provide enhanced dilemma zone protection for trucks and other high profile vehicles. The sensor boosts detection of these vehicles out to 900 feet, and protects both cars and trucks with innovative SafeArrival™ technology.

Features

- Dilemma zone protection for high profile vehicles based on vehicle discovery range
- Advanced techniques boost truck detections out to 900 feet, car detections are boosted out to 600 feet or more
- Patented SafeArrival technology provides protection to individual cars and trucks
- Dynamic ETA Tracking over the entire detection area
- Non-intrusive, above ground position makes the sensor easy to install
- The additional 300-foot range (compared to SmartSensor Advance) makes overhead/straightforward mast arm installation more effective on high-speed approaches
- Easily integrates with SmartSensor Matrix at intersections
- Benefits include reduced risk of hazardous load spills, reduced truck crash and fatalities rates, reduced emissions, fewer truck start-up delays, and improved corridor delivery times





Technical Specifications

Measured Quantities

- Per-vehicle range, speed
- Dynamic stop-bar ETA tracking, adjusted as vehicles change speeds
- Dynamic density (a measure of instantaneous roadway efficiency)
- Number of simultaneous vehicle detections: 25
- Logic filters for zone output
- ✖ Combinational logic applied to zone outputs for alert output
- Channel output from multiple alerts
- Latched channel output controlled by alerts and timer
- Delay and extend settings used for channel outputs
- Number of channels: 8
- Detection data available via serial communications
- Priority level (based upon discovery range for high-profile vehicles)
- Pulse channel outputs for intersection arrival-time information

Detectable Area

- Maximum mounting distance from center of lanes: 50 ft. (15.2 m)
- Maximum mounting height: 40 ft. (12.2 m)
- Detection area: 50 to 900 ft. (15.2 m to 274.3 m)
- Percentage of vehicles detected before 450 ft. (137.2 m): all motor vehicles 90%
- Percentage of vehicles detected before 700 ft. (213.4m): high-profile trucks, buses and other large vehicles 90%

Performance

- Detection accuracy: large vehicles 98%; all motor vehicles 95%
- Range accuracy: ±10 ft. (3 m) for 90% of measurements
- Speed accuracy: ±5 mph (8 kph) for 90% of measurements
- ETA accuracy: ±1 sec. for 85% of measurements

Performance Maintenance

- No cleaning or adjustment necessary
- No battery replacement necessary
- Mean time between failures: 10 years (estimated based on manufacturing techniques)

Physical Properties

- Weight: 3.8 lbs. (1.7 kg)
- Physical dimensions: 13.2 in. x 10.6 in. x 3.8 in. (33.5 cm x 26.9 cm x 9.7 cm)
- Resistant to corrosion, fungus, moisture deterioration and ultraviolet rays
- Enclosure: Lexan polycarbonate
- Outdoor weatherable: UL 746C
- Watertight by NEMA 250 standard
- NEMA 250 compliant for:
 - External icing (clause 5.6)

Ordering Information

SmartSensor Advance Extended Range
SS-200E

Retrofitted SmartSensor Advance Extended Range
SS-200E-001

ACCESSORIES

SS-KIT - Wavetronix install kit

CLK-112/114 - Click 112/114 rack cards

SS-704-xxx/705 - SmartSensor 6-conductor cable

SS-708-xxx/707 - SmartSensor 8-conductor cable (for retrofitted sensor)

SS-611 - SmartSensor mount

SS-B01-0003/0005/0008 - Intersection preassembled backplate - AC

SS-B01-0004/0006 - Intersection preassembled backplate - DC

SS-B02-0002/0003 - Intersection preassembled 19-inch rack

SS-710 - Sensor cable junction box

Wavetronix

78 East 1700 South

Provo, UT 84606

801.734.7200

sales@wavetronix.com

www.wavetronix.com

- Hose down (clause 5.7)
- 4X corrosion protection (clause 5.10)
- Gasket (clause 5.14)
- Withstands 5-ft. (1.5-m) drop
- Connector: MIL-C-26482
- Rotational backplate for 360° of roll



Electrical

- Power consumption: 3.2 W @ 12 VDC
- Supply voltage: 10-28 VDC
- Onboard surge protection

Communication Ports

- Two half-duplex RS-485 com ports support:
 - Dedicated detection comms
 - Configuration, verification or traffic display without disrupting detection comms
- Firmware upgradability over any com port
- User configurable:
 - Baud rate
 - Response delay
 - Contact closure data output frequency
- Supported baud rates: 9600, 19200, 38400, 57600 and 115200 bps
- Contact closure data output frequency:
 - Minimum: 50 ms
 - Default: 130 ms
- Contact closure data latency (varies with baud rate and output frequency):
 - Minimum: 55 ms (this is achieved using 57600 bps baud rate and 50 ms output frequency)
 - Default: 142 ms (this is achieved using 9600 bps baud rate and 130 ms output frequency)

Radar Design

- Operating frequency: 10.5-10.55 GHz (X-band)
- No manual tuning to circuitry
- Transmit modulated signals generated digitally
- No temperature-based compensation necessary
- Bandwidth stable within 1%
- Printed circuit board antennas
- Antenna vertical 6 dB beam width (two-way pattern): 65°
- Antenna horizontal 6 dB beam width (two-way pattern): 10.5°
- Antenna two-way sidelobes -40 dB
- Transmit bandwidth: 45 MHz
- Ur-windowed resolution: 11 ft. (3.4 m)
- RF channels: 8

Configuration

- Automatic and manual configuration of detection sensitivity in 7.5-ft. (2.29-m) increments
- Channel outputs: 8
 - Alerts per channel: 4 (32 total)
 - Zones per alert: 4 (128 total)
- Priority channels: 3
 - Two priority level alerts: level 1 = high priority, level 2 = normal priority

- Discovery range threshold from 100 ft. (30.5 m) to 900 ft. (274.3 m)
- Queue clearance alert
- Zone size increment: 5 ft. (1.5 m)
- Maximum detection zone size: 850 ft. (251.9 m)
- High speed and low speed detection filters
- Speed filter increment: 1 mph (1.6 kph)
- Upper and lower ETA filters
- ETA filter increment: 0.1 seconds
- Upper and lower count filters
- Count filter increment: 1
- Graphical user interface with traffic representation
- Display of configured alerts and their actuation
- Vehicle track file logging
- Supported operating systems:
 - Windows® Mobile (Socket Mobile 650-M)
 - Windows XP
 - Windows Vista
 - Windows 7
- Software supported functionality:
 - Auto-find baud rate
 - Auto-find serial port
 - TCP/IP connectivity
 - Virtual sensor connections
 - Sensor configuration backup and restore

Operating Conditions

- Accurate performance in:
 - Rain up to 2 in. (5.08z cm) per hour
 - Freezing rain
 - Snow
 - Wind
 - Dust
 - Fog
 - Changing temperature
 - Changing lighting (even direct light on sensor at dawn and dusk)
- Ambient operating temp: -40°F to 165°F (-40°C to 74°C)
- Humidity: up to 95% RH (non-condensing)

Testing

- Tested under FCC CFR 47, part 15, section 15.245
- FCC certification on product label
- FCC regulation-compliant for life of the sensor
- Tested under NEMA TS 2-1998
 - Shock pulses of 10 g, 11 ms half sine wave
 - Vibration of 0.5 g up to 30 Hz
 - 300 V positive/negative pulses
 - Stored at -49°F (-45°C) for 24 hours



SmartSensor Advance Extended Range

- Stored at 185°F (85°C) for 24 hours
- Operation at -29.2°F (-34°C) and 10.8 VDC
- Operation at -29.2°F (-34°C) and 26.5 VDC
- Operation at 165.2°F (74°C) and 26.5 VDC
- Operation at 165.2°F (74°C) and 10.8 VDC

Manufacturing

- Manufactured in the USA
- Surface mount and wave solder assembly
- IPC-A-610C Class 2-compliant
- Operational testing:
 - Sub-assembly test
 - 48-hour unit level burn-in
 - Final unit test
- Unit test results available

Support

- Training and tech support available from Wavetronix
- Wavetronix training includes:
 - Installation and configuration instruction to ensure accurate performance
 - Classroom and in-field instruction
 - Knowledgeable trainers
 - Use of presentation materials

- Virtual configuration using computer playback
- Instruction in use of computer and handheld devices and other necessary equipment
- Wavetronix tech support includes:
 - Technical representatives available for installation and configuration
 - Ongoing troubleshooting and maintenance support

Documentation

- Comprehensive user guide
- Installer quick-reference guide
- User quick-reference guide
- Documentation available upon request:
 - Detection accuracy
 - Range accuracy
 - Earliest range of detection
 - Speed accuracy
 - ETA accuracy
 - FCC CFR 47 certification
 - NEMA 250 standard for type 4X enclosure third-party test data
 - NEMA TS 2-1998 standard third-party test data

Warranty

- Two-year warranty against material and workmanship defect (see SmartSensor Warranty datasheet for complete details)

The advertised detection accuracy of the company's sensors is based on both external and internal testing, as outlined in each product's specification document. Although our sensors are very accurate by industry standards, like all other sensor manufacturers we cannot guarantee perfection or assure that no errors will ever occur in any particular applications of our technology. Therefore, beyond the express Limited Warranty that accompanies each sensor sold by the company, we offer no additional representations, warranties, guarantees or remedies to our customers. It is recommended that purchasers and integrators evaluate the accuracy of each sensor to determine the acceptable margin of error for each application within their particular system(s).

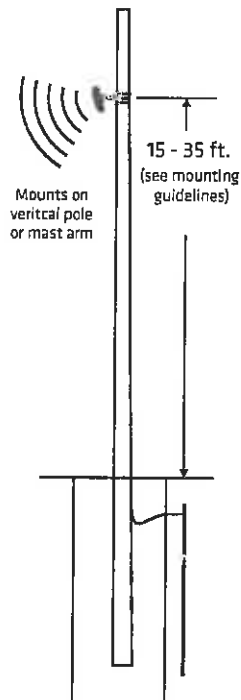
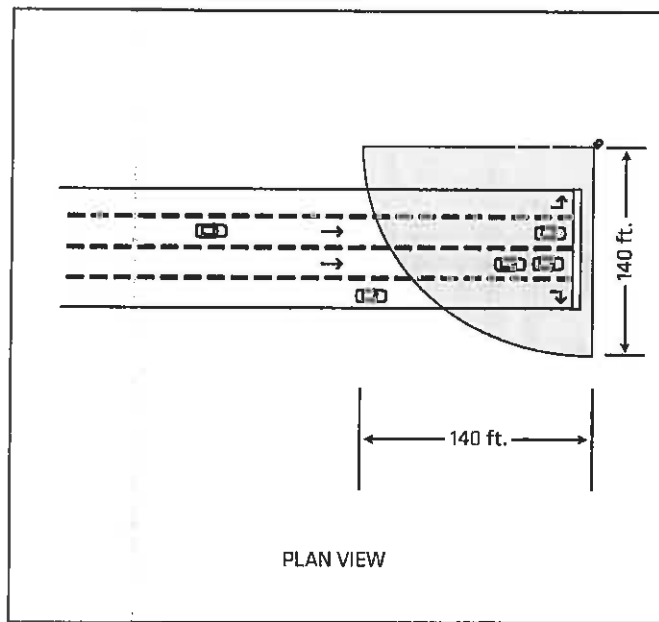
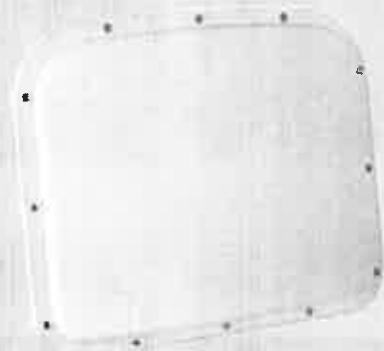


SmartSensor Matrix

The SmartSensor™ Matrix is a first-of-its-kind stop bar presence detector designed for use at signalized intersections to detect vehicles with the reliability of radar and with all the advantages of non-intrusive detection.

Features

- Matrix of 16 radars for two-dimensional coverage
- Tracks vehicles through a 90 degree field of view that extends out 140 ft. (42.7 m)
- Includes Radar Vision™ technology to detect and track in two dimensions
- Reports real-time presence of both moving and stopped vehicles
- Standard detector-rack contact-closure interface
- Easy to install and operate
- Supports curved and angled lanes
- Includes preassembled cabinet back-plate, reducing the need to field wire
- Automated manufacturing process
- Patented auto-configuration process
- Patented Digital Wave Radar II™ technology
- Remote accessible for traffic monitoring and sensor management
- Flash upgradable
- Robust to changing temperature, light and weather conditions





Technical Specifications

Sensor Outputs

- Real-time presence data in 10 lanes
- Maximum number of zones: 16
- Maximum number of channels: 16
- User-selectable zone to channel mapping
- AND logic triggers the channel when all the selected zones are active
- OR logic used to combine multiple zones to a channel output
- Channel output extend and delay functionality
- Algorithms mitigate detections from wrong way or cross traffic
- Fail-safe mode for contact closure outputs if communication is lost

Detectable Area

- Detection range: 6 to 140 ft. (1.8 to 42.7 m)
- Field of view: 90°
- Flexible lane configuration support including:
 - Up to 10 lanes
 - Curved lanes
 - Islands and medians

System Hardware

- A SmartSensor Matrix corner radar for each approach
- Either one of the following:
 - A traffic cabinet preassembled backplate with AC/DC power conversion, surge suppression, terminal blocks for cable landing, communication connection points; can be cabinet side mount or rack mount
 - A cabinet interface device (the Click 600 or 650) that performs the following functions: power conversion, surge protection, communication with a connected computer, communication with contact closure devices/traffic controller
- Contact closure input file cards (if necessary):
 - 2 or 4 channel
 - Compatible with industry standard detector racks

Maintenance

- No cleaning or adjustment necessary
- No battery replacement necessary
- Recalibration is not necessary
- Mean time between failures: 10 years (estimated based on manufacturing techniques)

Physical Properties

- Weight: 4.2 lbs. (1.9 kg)
- Physical dimensions: 13.2 in. x 10.6 in. x 3.3 in. (33.5 cm x 26.9 cm x 8.4 cm)

Ordering Information

SmartSensor Matrix
SS-225

ACCESSORIES

- SS-KIT - Wavetronix install kit
- SS-112/114 - Click 112/114 rack cards
- SS-704-xxx/705 - SmartSensor 6-conductor cable
- SS-611 - SmartSensor mount
- SS-B01-0003/0005/0008 - Intersection preassembled backplate - AC
- SS-B01-0004/0006 - Intersection preassembled backplate - DC
- SS-B02-0002/0003 - Intersection preassembled 19-inch rack
- SS-710 - Sensor cable junction box

Wavetronix

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Provo, UT 84606
801.734.7200
sales@wavetronix.com
www.wavetronix.com

- Resistant to corrosion, fungus, moisture deterioration, and ultraviolet rays
- Enclosure: Lexan EXL polycarbonate
- Outdoor weatherable: UL 746C
- Watertight by NEMA 250 standard
- NEMA 250 compliant for:
 - External icing (clause 5.6)
 - Hose down (clause 5.7)
 - 4X corrosion protection (clause 5.10)
 - Gasket (clause 5.14)
- Withstands 5-ft. (1.5-m) drop
- Connector: MIL-C-26482
- Rotational backplate for 360° of roll



Electrical

- Power consumption: 9 W
- Supply voltage: 10–28 VDC
- Onboard surge protection

Communication Ports

- Two half-duplex RS-485 com ports support:
 - Dedicated detection comms
 - Configuration, verification or traffic display without disrupting detection comms
- Firmware upgradability over any com port
- User configurable:
 - Response delay
 - Push port

Radar Design

- Operating frequency: 24.0–24.25 GHz (K-band)
- Matrix of 16 radars
- No manual tuning to circuitry
- Transmits modulated signals generated digitally
- No temperature-based compensation necessary
- Bandwidth stable within 1%
- Printed circuit board antennas
- Antenna vertical 6 dB beam width (two-way pattern): 65°
- Horizontal field of view: 90°
- Antenna two-way sidelobes: -40 dB
- Transmit bandwidth: 245 MHz
- Un-windowed resolution: 2 ft. (0.6 m)
- RF channels: 8
- Self-test for verifying hardware functionality
- Diagnostics mode for verifying system functionality

Configuration

- Automatic and manual configuration of lanes, stop bars and zones
- Lane positioning increment: 1 ft. (0.3 m)
- Four-sided zones of any shape and size
- Overlapping zones supported
- Sensor reconfiguration without detection disruption supported
- Graphical user interface with traffic pattern display
- Counting and Pulsed channels supported
- Windows Mobile®-compatible software
- Supported operating systems:
 - Windows Mobile v5.0 or greater (Socket Mobile 650-M)
 - Windows XP
 - Windows Vista
 - Windows 7
- Software-supported functionality:
 - TCP/IP connectivity

- Sensor configuration back-up and restore
- Backed-up sensor configurations can be viewed and edited
- Real-time traffic visualization for performance verification and traffic display
- Zone and channel actuation display
- Virtual sensor connections for demonstration and training
- Local or remote sensor firmware upgradability

Operating Conditions

- Accurate performance in:
 - Rain up to 1 in. (2.5 cm) per hour
 - Freezing rain
 - Snow
 - Wind
 - Dust
 - Fog
 - Changing temperature
 - Changing lighting (even direct light on sensor at dawn and dusk)
- Ambient operating temperature: -40°F to 165°F (-40°C to 74°C)
- Humidity: Up to 95% RH (non-condensing)

Testing

- Tested under FCC CFR 47, part 15, section 15.249
- FCC certification on product label
- FCC regulation-compliant for life of the sensor
- Tested under IEC 61000-4-5 class 4
- Tested under NEMA TS 2-2003
 - Shock pulses of 10 g, 11 ms half sine wave
 - Vibration of 0.5 g up to 30 Hz
 - 300 V positive/negative pulses
 - Stored at -49°F (-45°C) for 24 hours
 - Stored at 185°F (85°C) for 24 hours
 - Operation at -29.2°F (-34°C) and 10.8 VDC
 - Operation at -29.2°F (-34°C) and 26.5 VDC
 - Operation at 165.2°F (74°C) and 26.5 VDC
 - Operation at 165.2°F (74°C) and 10.8 VDC

Manufacturing

- Manufactured in the USA
- Surface mount assembly
- IPC-A-610C Class 2-compliant
- Operational testing:
 - Sub-assembly test
 - 48-hour unit level burn-in
 - Final unit test
- Unit test results available



Support

- Training and tech support available from Wavetronix
- Wavetronix training includes:
 - Installation and configuration instruction to ensure accurate performance
 - Classroom and in-field instruction
 - Knowledgeable trainers
 - Use of presentation materials
 - Virtual configuration using computer playback
 - Instruction in use of computer and handheld devices and other necessary equipment
- Wavetronix tech support includes:
 - Technical representatives available for installation and configuration
 - Ongoing troubleshooting and maintenance support

Documentation

- Instructional training guide
- Comprehensive user guide
- Installer quick-reference guide
- User quick-reference guide
- Documentation available upon request:
 - FCC certification
 - CE certification
 - IEC 61000-4-5 class 4 test report

Warranty

- Two-year warranty against material and workmanship defect Warranty (see SmartSensor Warranty datasheet for complete details)

The advertised detection accuracy of the company's sensors is based on both external and internal testing, as outlined in each product's specification document. Although our sensors are very accurate by industry standards, like all other sensor manufacturers we cannot guarantee perfection or assure that no errors will ever occur in any particular applications of our technology. Therefore, beyond the express Limited Warranty that accompanies each sensor sold by the company, we offer no additional representations, warranties, guarantees or remedies to our customers. It is recommended that purchasers and integrators evaluate the accuracy of each sensor to determine the acceptable margin of error for each application within their particular system(s).

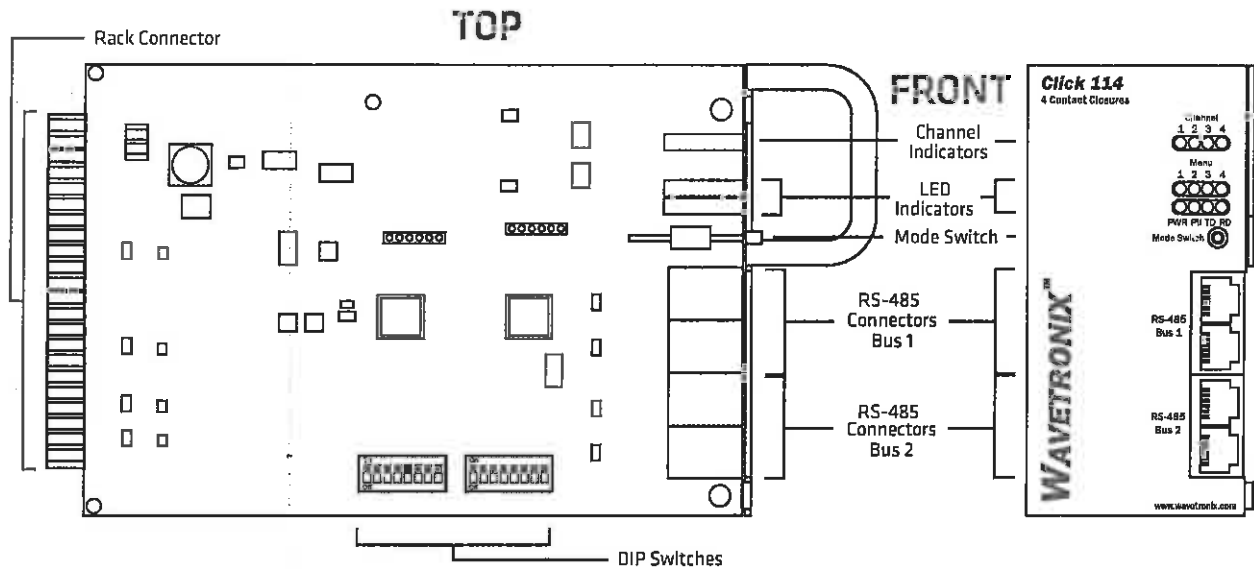
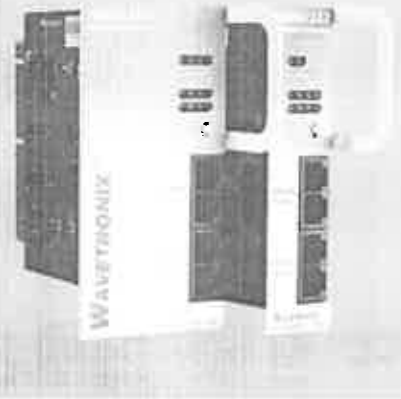


Detector Rack Cards

The Click 112/114 are 2-/4-channel contact output rack cards that plug into any standard detector rack card slot in any cabinet type. Each output is electrically isolated and is normally open. When the cards receive the appropriate serial message from SmartSensor™ sensors, they will close the contact outputs.

Features

- Compatible with NEMA TS1 and TS2, 170, and 2070 traffic controllers
- Plugs into any standard input file rack card slot
- Fail-safe mode in case of interruption of data flow
- Dual communications ports for separate data and configuration communication
- Uses industry-standard RS-485 communications
- Displays detection via LEDs on faceplate
- Automatically sets baud rate
- Solid state outputs
- Configurable via hardware (DIP switches) or software (front panel interface or Click Supervisor)
- Software configuration is read-only when in Hardware Configuration mode
- Conformal coated





Technical Specifications

Physical

- Weight: 0.25 lbs. (0.11 kg) / 0.29 lbs. (0.13 kg)
- Physical dimensions: 8.3 in. x 4.5 in. x 1.2 in. (21.1 cm x 11.4 cm x 3 cm) / 8.3 in. x 4.5 in. x 2.4 in. (21.1 cm x 11.4 cm x 6.1 cm)
- Ambient operating temp: -29°F to 165°F (-34°C to 74°C)
- Humidity: up to 95% RH

Mounting

- Inserts into an input file rack

Power

- Power supply voltage: 9-30 VDC
- Power consumption: 1 W

Connections

- Detection and power: 44 terminal card edge connector
- Four RJ-11 jacks: two for RS-485 bus 1 and two for RS-485 bus 2

Communication

- Has two independent RS-485 buses, so that the device can be configured without interrupting data flow
- Vehicle information to traffic controller via contact closures

Baud Rates

- Supports the following baud rates:
 - 9600 bps
 - 19200 bps
 - 38400 bps
 - 57600 bps

DIP Switch Configuration Features

- Separate DIP switches for baud rate and channel mapping selection
- DIP switch settings disable faceplate or software configurability

Faceplate Configuration Features

- Mode Switch controls menu operation
- Detection LEDs (red) display the current detection state
- Menu LEDs (Level 2) (red) lets you view and set menu options
- Menu LEDs (Level 1) displays menu item selected, as well as the following status indications:
 - Red LED (PWR) indicates the device has power
 - Blue LED (PU) is reserved for future use
 - Green LED (TD) indicates device is transmitting data
 - Yellow LED (RD) indicates device is receiving data
- Supports configuration of baud rate and channel mapping settings

Ordering Information

Click 112 2-channel detector rack card
CLK-112

Click 114 4-channel detector rack card
CLK-114

Wavetronix

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Software Configuration Features

- Comes with Click Supervisor, configuration software with the following features:
 - Runs on Pocket PC or Windows desktop or laptop PC (Windows XP and newer)
 - Configures serial communication settings including serial baud rates
 - Configures channel mapping settings
 - Can remotely and directly upgrade the device firmware to add new features to the device
 - Can save/open a configuration to/from a file, allowing a common configuration to be easily programmed into many devices
 - Has customizable drivers that are stored in an XML file that describes the settings for a device as well the graphical user interface for that driver in the configuration software

Data Conversion

- Outputs traffic data as contact closures specified by a Wavetronix SmartSensor

Fail-safe Mode

- Enters a fail-safe mode if it has lost communications with a sensor for more than 10 seconds
- In fail-safe mode, all channel outputs are asserted
- Fail-safe mode will be exited when communication with sensor is restored

Class 4 Compliance

- Complies with the EN 61000-4-5 Class 4 lightning surge protection on the DC input



Contact Closure Outputs

- Dissipates up to a 600 W power surge received on any contact closure output terminal
- Contact closure output terminals can withstand 50 V continuously
- Contact closure outputs are less than 8 ohms in conduction state
- Contact closure outputs in non-conducting state leak less than 1uA
- Contact closure outputs can switch up to 150 mA

Pocket PC & PC Configuration Software

- Comes with Click Supervisor, configuration software with the following features:
 - Runs on Pocket PC or Windows desktop or laptop PC (Windows 2000 and newer)
 - Configures serial communication settings including serial baud rates
 - Can remotely and directly upgrade the device firmware to add new features to the device
 - Can save/open a configuration to/from a file, allowing a common configuration to be easily programmed into many devices
 - Has customizable drivers that are stored in an XML file that describes the settings for a device as well the graphical user interface for that driver in the configuration software

Remote Upgradeability

- Flash memory can be remotely upgraded to add functionality to the firmware when new features have been developed to improve the performance of the installation

Testing

- Passes manufacturer's test before shipping
- Tested under NEMA TS2-2003

Extended Support

- Extended support options are available from Wavetronix; contact a Wavetronix representative for more information

Warranty

- One-year warranty against material and workmanship defect (see Click Warranty datasheet for complete details)