



INVITATION TO BID

SOLICITATION TITLE: WATERFIRE DISPLAY SYSTEMS (LED DYNAMIC MESSAGE SIGNS)
SOLICITATION NUMBER: 7550954
BID PROPOSAL SUBMISSION DEADLINE: September 29, 2016 at 1:00 PM

PREBID CONFERENCE

NONMANDATORY

MANDATORY → Bidder must attend the mandatory prebid conference. The bidder's representative must register with the Division of Purchases at the mandatory prebid conference and identify the bidder he or she represents.

Location: N/A

Date: N/A

Time: N/A

QUESTIONS about this solicitation must be emailed and received by the Division of Purchases at lisa.hill@purchasing.ri.gov no later than Wednesday, September 21, 2016, 5:00 PM, in a Microsoft Word attachment with the corresponding solicitation number. Questions, if any, and responses will be posted on the Division of Purchases website at www.purchasing.ri.gov as an addendum to this solicitation

BID BOND REQUIRED: NO
 YES

PAYMENT AND PERFORMANCE BOND REQUIRED: NO
 YES

SPECIFICATIONS AND PLANS: NO
 YES → See Electronic Solicitation Bidding Information.
Click on the online active "D" link in the "info" column.

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SOLICITATION NUMBER: 7550954
BID PROPOSAL SUBMISSION DEADLINE: September 29, 2016 at 01:00 PM

RIVIP REGISTRATION: Bidders must be registered vendors through the online Division of Purchases Rhode Island Vendor Information Program at www.purchasing.ri.gov. To register or update information, click on "Vendor Center," then "Vendor Information" from the dropdown menu on the left.

BIDDER CERTIFICATION COVER FORM: Bidders must download (obtainable at www.purchasing.ri.gov), complete, and submit a Bidder Certification Cover Form with each bid proposal.

The State of Rhode Island through its, Department of Administration, Division of Purchases, is soliciting bid proposals to perform the work described in the plans and specifications dated August 16, 2016 For the Project in accordance with this solicitation.

Bidders are invited to submit bid proposals to the Division of Purchases by the bid proposal submission deadline.

This solicitation contains, and is subject to the terms and conditions of, the Invitation to Bid, Instructions to Bidders, Bid Preparation Checklist (with applicable forms), Agreement, General Conditions, any Supplemental Conditions, Specifications and Plans, Bidder Certification Cover Form, and Bid Form. The solicitation is available at www.purchasing.ri.gov.

The award of the contract pursuant to this solicitation will be made to the responsive and responsible bidder with the lowest bid price. *The Division of Purchases reserves the right to waive any technicalities in the bid proposals, accept or reject any bid proposal, award a contract in the best interest of the State, or revoke any solicitation.*

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INVITATION TO BID

Electronic Solicitation Bidding Information

Downloading and Accessing Additional Electronic Solicitation Files

Accessing electronic files on the purchasing website will require Adobe viewer. All bid solicitations that include a "D" in the "Info" column will require WinZip 8.1 software. The WinZip file may contain one or more files. These files may require additional software such as Microsoft Office.

Specifications that have a file for download are marked with a "D" in the "Info" field of the bid search results page located on the Purchasing website. The "D" will indicate an active link to the WinZip file until the bid reaches its opening date. Clicking on the active "D" link will allow you to open or save the WinZip file associated with the bid. Opening the WinZip file will offer you the option of saving to your local computer.

Once saved, you can open the WinZip file and view the files. The individual files can be saved to your computer in a location such as "Desktop" or "My Documents".

Buyer Name: Lisa Hill , **Title: Chief Buyer**



State of Rhode Island Department of Administration
Division of Purchases

REVISED
November 20, 2013

NOTICE TO VENDORS

Each bid proposal for a *public works project* must include a "public copy" to be available for public inspection upon the opening of bids. **Bid proposals that do not include a copy for public inspection will be deemed nonresponsive.**

The public copy must be submitted in .pdf (portable document file) format on a *read-only* CD-R media disc. The disc must include *all of the documents* submitted in response to the solicitation concatenated or merged into one file. The file must be named in the following manner:

BidNumber_DateofBid_VendorName_VendorID.pdf

The Bidder Certification Cover Form contains all of the information for the file name. The date of bid must appear as mm-dd-yyyy. The vendor name must appear as one word, with no spaces or punctuation. Underscores must separate the fields.

Example: 7543210_11-08-2013_OceanStateCompanyInc_9867.pdf

The public copy disc must be separately enclosed in a protective cover clearly marked "Public Copy" and include the following information (all available from the Bidder Certification Cover Form): (1) title of solicitation; (2) name of bidder and RIVIP vendor ID number; (3) bid number; and (4) date of bid.

The public copy may redact any trade secrets or commercial or financial information which is of a privileged or confidential nature pursuant to the "Access to Public Records Act," R. I. Gen. Laws §§ 38-2-1 *et seq.*

For further information on how to comply with this statutory requirement, see R. I. Gen. Laws §§ 37-2-18(b) and (j). Also see Procurement Regulation 5.11 accessible at www.purchasing.ri.gov



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Labor and Training

Center General Complex

1511 Pontiac Avenue
Cranston, RI 02920-4407

TTY: Via RI Relay 711

Lincoln D. Chafee
Governor

Charles J. Fogarty
Director

STATE CONTRACT ADDENDUM

RHODE ISLAND DEPARTMENT OF LABOR AND TRAINING

PREVAILING WAGE REQUIREMENTS (37-13-1 ET SEQ.)

The prevailing wage requirements are generally set forth in RIGL 37-13-1 et seq. These requirements refer to the prevailing rate of pay for regular, holiday, and overtime wages to be paid to each craftsmen, mechanic, teamster, laborer, or other type of worker performing work on public works projects when state or municipal funds exceed one thousand dollars (\$1,000).

All Prevailing Wage Contractors and Subcontractors are required to:

1. Submit to the Awarding Authority a list of the contractor's subcontractors for any part or all of the prevailing wage work in accordance with RIGL § 37-13-4;
2. Pay all prevailing wage employees at least once per week and in accordance with RIGL §37-13-7 (see Appendix B attached);
3. Post the prevailing wage rate scale and the Department of Labor and Training's prevailing wage poster in a prominent and easily accessible place on the work site in accordance with RIGL §37-13-11; posters may be downloaded at www.dlt.ri.gov/pw/Posters.htm .poster/htm or obtained from the Department of Labor and Training, Center General Complex, 1511 Pontiac Avenue, Cranston, Rhode Island;
4. Access the Department of Labor and Training website, at www.dlt.ri.gov on or before July 1st of each year, until such time as the contract is completed, to ascertain the current prevailing wage rates and the amount of payment or contributions for each covered prevailing wage employee and make any necessary adjustments to the covered employee's prevailing wage rates effective July 1st of each year in compliance with RIGL §37-13-8;
5. Attach a copy of this CONTRACT ADDENDUM and its attachments as a binding obligation to any and all contracts between the contractor and any

An Equal Opportunity Employer/Program./Auxiliary aids and services are available upon request to individuals with disabilities.

TTY via RI Relay 711



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subcontractors and their assignees for prevailing wage work performed pursuant to this contract;

6. Provide for the payment of overtime for prevailing wage employees who work in excess of eight (8) hours in any one day or forty (40) hours in any one week as provided by RIGL §37-13-10;
7. Maintain accurate prevailing wage employee payroll records on a Rhode Island Certified Weekly Payroll form available for download at www.dlt.ri.gov/pw.forms/htm, as required by RIGL §37-13-13, and make those records available to the Department of Labor and Training upon request;
8. Furnish the fully executed RI Certified Weekly Payroll Form to the awarding authority on a monthly basis for all work completed in the preceding month.
9. For general or primary contracts one million dollars (\$1,000,000) or more, shall maintain on the work site a fully executed RI Certified Prevailing Wage Daily Log listing the contractor's employees employed each day on the public works site; the RI Certified Prevailing Wage Daily Log shall be available for inspection on the public works site at all times; this rule shall not apply to road, highway, or bridge public works projects. Where applicable, furnish both the Rhode Island Certified Prevailing Wage Daily Log together with the Rhode Island Weekly Certified Payroll to the awarding authority.
10. Assure that all covered prevailing wage employees on construction projects with a total project cost of one hundred thousand dollars (\$100,000) or more has a OSHA ten (10) hour construction safety certification in compliance with RIGL § 37-23-1;
11. Employ apprentices for the performance of the awarded contract when the contract is valued at one million dollars (\$1,000,000) or more, and comply with the apprentice to journeyman ratio for each trade approved by the apprenticeship council of the Department of Labor and Training in compliance with RIGL §37-13-3.1;
12. Assure that all prevailing wage employees who perform work which requires a Rhode Island trade license possess the appropriate Rhode Island trade license in compliance with Rhode Island law; and

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13. Comply with all applicable provisions of RIGL §37-13-1, et. seq;

Any questions or concerns regarding this CONTRACT ADDENDUM should be addressed to the contractor or subcontractor's attorney. Additional Prevailing Wage information may be obtained from the Department of Labor and Training at www.dlt.ri.gov/pw.

CERTIFICATION

I hereby certify that I have reviewed this CONTRACT ADDENDUM and understand my obligations as stated above.

By: _____

Title: _____

Subscribed and sworn before me this ___ day of _____, 20__.

Notary Public
My commission expires: _____

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TTY via RI Relay 711



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1511 Pontiac Avenue

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Telephone: (401) 462-8000

APPENDIX A

TITLE 37

Public Property and Works

CHAPTER 37-13

Labor and Payment of Debts by Contractors

SECTION 37-13-5

§37-13-5 Payment for trucking or materials furnished - Withholding of sums due. -A contractor or subcontractor on public works authorized by a proper authority shall pay any obligation or charge for trucking and material which have been furnished for the use of the contractor or subcontractor, in connection with the public works being performed by him or her, within ninety (90) days after the obligation or charge is incurred or the trucking service has been performed or the material has been delivered to the site of the work, whichever is later. When it is brought to the notice of the proper authority in a city or town, or the proper authority in the state having supervision of the contract, that the obligation or charge has not been paid by the contractor or subcontractor, the proper authority may deduct and hold for a period not exceeding sixty (60) days, from sums of money due to the contractor or subcontractor, the equivalent amount of such sums certified by a trucker or materialman creditor as due him or her, as provided in this section, and which the proper authority determines is reasonable for trucking performed or materials furnished for the public works.

APPENDIX B

TITLE 37

Public Property and Works

CHAPTER 37-13

Labor and Payment of Debts by Contractors

SECTION 37-13-7

§ 37-13-7 Specification in contract of amount and frequency of payment of wages.

-(a) Every call for bids for every contract in excess of one thousand dollars (\$1,000), to which the state of Rhode Island or any political subdivision thereof or any public agency or quasi-public agency is a party, for construction, alteration, and/or repair, including painting and decorating, of public buildings or public works of the state of Rhode Island or any political subdivision thereof, or any public agency or quasi-public agency and which requires or involves the employment of employees, shall contain a provision stating the minimum wages to be paid various types of employees which shall be based upon the wages that will be determined by the director of labor and training to be prevailing for the corresponding types of employees employed on projects of a character similar to the contract work in the city, town, village, or other appropriate political subdivision of the state of Rhode Island in which the work is to be performed. Every contract shall contain a stipulation that the contractor or his or her subcontractor shall pay all the employees employed directly upon the site of the work, unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment computed at wage rates not less than those stated in the call for bids, regardless of any contractual relationships which may be alleged to exist between the contractor or subcontractor and the employees, and that the scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work; and the further stipulation that there may be withheld from the contractor so much of the accrued payments as may be considered necessary to pay to the employees employed by the contractor, or any subcontractor on the work, the difference between the rates of wages required by the contract to be paid the employees on the work and the rates of wages received by the employees and not refunded to the contractor, subcontractors, or their agents.

(b) The terms "wages", "scale of wages", "wage rates", "minimum wages", and "prevailing wages" shall include:

- (1) The basic hourly rate of pay; and
- (2) The amount of:

(A) The rate of contribution made by a contractor or subcontractor to a trustee or to a third person pursuant to a fund, plan, or program; and

(B) The rate of costs to the contractor or subcontractor which may be reasonably anticipated in providing benefits to employees pursuant to an enforceable commitment to carry out a financially responsible plan or program which was communicated in writing to the employees affected, for medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing, for unemployment benefits, life insurance, disability and sickness insurance, or accident insurance, for vacation and holiday pay, for defraying costs of apprenticeship or other similar programs, or for other bona fide fringe benefits, but only where the contractor or subcontractor is not required by other federal, state, or local law to provide any of the benefits; provided, that the obligation of a contractor or subcontractor to make payment in accordance with the prevailing wage determinations of the director of labor and training insofar as this chapter of this title and other acts incorporating this chapter of this title by reference are concerned may be discharged by the making of payments in cash, by the making of contributions of a type referred to in subsection (b)(2), or by the assumption of an enforceable commitment to bear the costs of a plan or program of a type referred to in this subdivision, or any combination thereof, where the aggregate of any payments, contributions, and costs is not less than the rate of pay described in subsection (b)(1) plus the amount referred to in subsection (b)(2).

(c) The term "employees", as used in this section, shall include employees of contractors or subcontractors performing jobs on various types of public works including mechanics, apprentices, teamsters, chauffeurs, and laborers engaged in the transportation of gravel or fill to the site of public works, the removal and/or delivery of gravel or fill or ready-mix concrete, sand, bituminous stone, or asphalt flowable fill from the site of public works, or the transportation or removal of gravel or fill from one location to another on the site of public works, and the employment of the employees shall be subject to the provisions of subsections (a) and (b).

(d) The terms "public agency" and "quasi-public agency" shall include, but not be limited to, the Rhode Island industrial recreational building authority, the Rhode Island economic development corporation, the Rhode Island airport corporation, the Rhode Island industrial facilities corporation, the Rhode Island refunding bond authority, the Rhode Island housing and mortgage finance corporation, the Rhode Island resource recovery corporation, the Rhode Island public transit authority, the Rhode Island student loan authority, the water resources board corporate, the Rhode Island health and education building corporation, the Rhode Island higher education assistance authority, the Rhode Island turnpike and bridge authority, the Narragansett Bay water quality management district commission, Rhode Island telecommunications authority, the convention center authority, the board of governors for higher education, the board of regents for elementary and secondary education, the capital center commission, the housing resources commission, the Quonset Point-Davisville management corporation, the Rhode Island children's crusade for higher education, the Rhode Island depositors economic protection corporation, the Rhode Island lottery commission, the Rhode Island

partnership for science and technology, the Rhode Island public building authority, and the Rhode Island underground storage tank board.



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration
DIVISION OF PURCHASES
One Capitol Hill
Providence, RI 02908-5855

Tel: (401) 574-8100
Fax: (401) 574-8387
Website: www.purchasing.ri.gov

**DIVISION OF PURCHASES
INSTRUCTIONS TO BIDDERS
PUBLIC WORKS CONSTRUCTION (PWC)**

Compliance with Instructions to Bidders

These Instructions to Bidders contain terms and conditions that will govern the preparation and submission of a bid proposal and any contract awarded pursuant to this solicitation.

Bidders must comply with each and every requirement of these Instructions to Bidders. Any failure to comply with any requirement may result in the determination of a nonresponsive bid proposal and/or the rejection of the bid proposal.

Priority of Terms and Conditions

The terms and conditions in these Instructions to Bidders *supersede* any and all inconsistent or conflicting terms and conditions in any other provision of any other document in this solicitation or in the bid proposal and govern this solicitation, the bid proposal, and any contract awarded pursuant to this solicitation.

Offer to Contract

Bid proposals constitute an offer to contract with the State of Rhode Island through the Department of Administration Division of Purchases on the terms and conditions contained in the solicitation, the laws of the State of Rhode Island, including all procurement statutes and regulations (available at www.purchasing.ri.gov), and applicable federal and local law, all of which are incorporated into this solicitation and any contract awarded pursuant to this solicitation by this reference.

Comprehensive Review and Inspection

The bidder is responsible for carefully reviewing all of the requirements of this solicitation, inspecting the project location, including checking and/or verifying measurements, site conditions, any limitations, and other details, prior to preparing and submitting its bid proposal. Failure to submit a complete bid proposal may result in rejection of the bid proposal. Claims for additional costs or time resulting from the bidder's failure to inspect and/or verify will not be considered.

Addenda

Responses to questions from bidders, interpretations of plans and specifications, changes prior to the bid proposal submission deadline, approvals of any substitutions, and supplemental instructions and terms will be posted as addenda on the Division of Purchases website at www.purchasing.ri.gov, and all addenda become incorporated into this solicitation upon posting. Bidders are responsible for checking the website to determine the issuance of any addenda. No addenda will be posted within the 5-day period preceding the bid proposal submission deadline except for an addendum withdrawing the solicitation or extending the bid proposal submission deadline.

Prebid Conference

At the discretion of the State Purchasing Agent, a prebid conference - mandatory or nonmandatory - may be held. Bidders must attend a mandatory prebid conference and are encouraged to attend a nonmandatory prebid conference. The bidder's representative must register with the Division of Purchases at a mandatory prebid conference and identify the bidder he or she represents.

Costs

The bidder is responsible for all costs and expenses to develop and submit a bid proposal in response to this solicitation.

Preparation of Bid Proposal

Bid proposals must be made on the Bid Form included in the solicitation and in accordance with the instructions in this solicitation. All applicable blanks must be completed in a legible manner, printed electronically, typed, or handwritten in ink, and amounts must be expressed in both words and figures. In the event of any contradictory terms, handwritten terms prevail over printed or typed terms, and words prevail over figures. Signatures must be in ink. No additional provisions, conditions, or limitations may be made by the bidder, and any erasures and/or corrections must be initialed in ink by the person signing on behalf of the bidder.

This solicitation contains a Bid Preparation Checklist to assist the bidder in preparing a bid proposal for submission.

Submission of Bid Proposal

Each bid proposal (a complete package, with the signed Bidder Certification Cover Form, signed Bid Form, Bid Surety, IRS Form W-9, signed General Contractor Apprenticeship Certification, if applicable, and public copy CD-R media disk) must be submitted in a *separate sealed envelope* with the bidder's name and address and the specific "Solicitation Number," "Solicitation Title," and the "Bid Proposal Submission Deadline" marked in the upper left-hand corner of the envelope.

The bid proposal must be delivered (via mail, messenger service, or personal delivery) to the Division of Purchases and date-stamped receipted by the date and time specified for the bid proposal submission deadline. Bidders should mail bid proposals sufficiently in advance of the bid proposal submission deadline to ensure timely delivery to the Division of Purchases or, when delivering a bid proposal in person or by messenger, should allow additional time for parking and clearance through security checkpoints. Bid proposals must be addressed to:

Rhode Island Department of Administration
Division of Purchases
One Capitol Hill, Second Floor
Providence, RI 02908-5855

Bid proposals that are not received by the Division of Purchases by the bid proposal submission deadline for whatever reason will be deemed late and will not be considered. The submission time will be determined by the time clock in the Division of Purchases. Postmarks will not be considered proof of timely submission.

At the bid proposal submission deadline, bid proposals will be opened and read aloud in public.

Bid Price

The bidder must submit a Base Bid Price on the Bid Form to perform all of the work specified in the solicitation, including the cost of the bonds and any allowances and addenda. The costs of alternates shall not be included in the calculation of the Base Bid Price. The bidder shall separately provide the cost for each alternate listed in the Bid Form. The cost for each alternate must be designated as an addition to, or subtraction from, the Base Bid Price. Alternates will be selected, if any, by the Division of Purchases in the order of priority listed in the Bid Form.

Bidder Certification Cover Form

The bidder must download, complete, sign, and submit the Bidder Certification Cover Form for this solicitation as the first document with each bid proposal. The Bidder Certification Cover Form is downloadable with the solicitation from the Division of Purchases website by logging in as a RIVIP vendor and clicking on the applicable "Bid Number."

Public Copy

Bid proposals submitted in response to this solicitation are public records pursuant to the Rhode Island "Access to Public Records Act," R. I. Gen. Laws §§ 38-2-1 et seq. Each bid proposal must include a "public copy" to be available for public inspection upon the opening of bids. Bidders may redact in the public copy any trade secrets or commercial or financial information which is of a privileged or confidential nature pursuant to the Access to Public Records Act.

The public copy must be submitted in .pdf (portable document file) format on a **read-only** CD-R media disk. The disk must include **all of the documents** submitted in response to the solicitation concatenated or merged into one file.

The public copy disk must be separately enclosed in a protective cover clearly marked "Public Copy" and include the following information: (1) Solicitation Title; (2) name of bidder and RIVIP vendor ID number; (3) Solicitation Number; and (4) bid proposal submission deadline.

The .pdf file must be named in the following manner:

SolicitationNumber_Bid Proposal Submission Deadline_BidderName_VendorID.pdf

The bid proposal submission deadline must appear as mm-dd-yyyy. The bidder name must appear as one word, with no spaces or punctuation. Underscores must separate the fields.

Example: 7543210_11-08-2013_OceanStateCompanyInc_9867.pdf

The public copy of each bid proposal will be posted on the Division of Purchases website.

*For Rhode Island Department of Transportation highway and bridge projects, in addition to the Quest Lite compatible electronic copy and one hard copy, the bidder must also include a duplicate original of the Quest Lite compatible electronic copy on a **read-only** CD-R media disk as the "public copy."*

Contractors Registration

The bidder must have and maintain a valid certificate of registration issued by the Contractors' Registration Board throughout the term of the contract awarded pursuant to this solicitation and ensure that its subcontractors, unless exempt from registration, also obtain and maintain valid certificates of registration.

Subcontractors

The bidder must demonstrate that it is able to perform a substantial portion of the work using its own workforce. Any bidder that does not maintain a permanent workforce and/or proposes to perform a disproportionate amount of the work through one or more subcontractors will be considered unqualified. The successful bidder must establish to the satisfaction of the State Purchasing Agent the reliability and responsibility of any subcontractors proposed to perform any work pursuant to this solicitation.

Taxes

The State of Rhode Island is exempt from federal excise taxes and state and municipal sales and use taxes. The bidder shall not include such taxes in any prices in the bid proposal.

Bid Surety

Bidders must furnish, with their bid proposals, either a bid bond from a surety licensed to conduct business in the State of Rhode Island or a certified check payable to the State of Rhode Island in the amount of five (5%) percent of the bid proposal. (*Bidders for Rhode Island Department of Transportation highway and bridge projects must furnish, with their bid proposals, a bid bond from a surety licensed to conduct business in the State of Rhode Island. Certified checks are not permitted for these projects.*) An attorney-in-fact who executes a bond on behalf of the surety must provide a certified current copy of the power of attorney. A successful bidder who fails to submit the additional documentation required by the tentative letter of award and/or fails to commence and pursue the work in accordance with the contract awarded pursuant to this solicitation may forfeit, at the discretion of the State Purchasing Agent, the full amount of the bid surety as liquidated damages. The State will retain the bid surety of all bidders until the earliest of: (i) the issuance of the Purchase Order; (ii) the 61st day following the bid proposal submission deadline; or (iii) the rejection of all bid proposals.

Divestiture of Investments in Iran Requirement

No bidder engaged in investment activities in Iran as described in R.I. Gen. Laws § 37-2.5-2(b) may submit a bid proposal to, or renew a contract with, the Division of Purchases. Each bidder submitting a bid proposal or entering into a renewal of a contract is required to certify that the bidder does not appear on the list maintained by the General Treasurer pursuant to R.I. Gen. Laws § 37-2.5-3.

Domestic Steel

Any steel products required by the plans and specifications in this solicitation must be formed, extruded, forged, cast, fabricated, or otherwise processed from steel made in the United States.

Withdrawal

A bidder may withdraw its bid proposal at any time prior to the bid proposal submission deadline. Bid proposals are irrevocable for a period of 60 days following the bid proposal submission deadline.

Reservation of Rights

The Division of Purchases reserves the right, at any time, for any reason, in its sole discretion, to: (i) revoke, suspend, or terminate this solicitation; (ii) accept or reject any and all bid proposals, in whole or in part; (iii) waive any technical defects, irregularities, or omissions in any bid proposals; and/or (iv) terminate any contract awarded pursuant to this solicitation, with or without cause.

Award

The State Purchasing Agent, in his or her sole discretion, will award the contract pursuant to this solicitation to the responsive and responsible bidder who submits the lowest responsive and responsible bid proposal. The State Purchasing Agent may determine, in his or her sole discretion, the low bid proposal on the basis of the amount of the Base Bid Price plus the alternates selected in accordance with the Bid Form. The successful bidder will receive a tentative letter of award from the Division of Purchases with instructions for the bidder to submit further documentation. The successful bidder shall be authorized to commence work only upon the issuance of the Purchase Order by the Division of Purchases and, in addition, an authorization from the user agency. The issuance of the Purchase Order and the continuation of any contract awarded pursuant to this solicitation is contingent upon the availability of funds.

Payment and Performance Bonds

The successful bidder must furnish a 100% payment and performance bond from a surety licensed to conduct business in the State of Rhode Island upon the tentative award of the contract pursuant to this solicitation.

Prevailing Wages

For contracts priced under \$1 Million

The successful bidder and its subcontractors must pay their workers at the applicable prevailing wage rates (adjusted every July 1) for the various trades on a weekly basis, pay their workers one and one-half times the applicable prevailing wage rates for each hour worked in excess of 8 hours in any one day or 40 hours in any one week, and submit certified weekly payroll forms on a monthly basis to the user agency. Prevailing wage posters and rate schedules, available at the Rhode Island Department of Labor and Training website at www.dlt.ri.gov, must be posted at the project site.

For contracts priced \$1 Million or More

The successful bidder and its subcontractors must pay their workers at the applicable prevailing wage rates (adjusted every July 1) for the various trades on a weekly basis, pay their workers one and one-half times the applicable prevailing wage rates for each hour worked in excess of 8 hours in any one day or 40 hours in any one week, submit certified weekly payroll forms on a monthly basis to the user agency, and maintain a certified prevailing wage daily log at the project site. Prevailing wage posters and rate schedules, available at the Rhode Island Department of Labor and Training website at www.dlt.ri.gov, must be posted at the project site.

Apprenticeship

if the value of the project pursuant to this solicitation is at least \$1 Million (including all alternates), the successful bidder must employ apprentices on this project (in accordance with the apprentice to journey person ratio for each trade approved by the State Apprenticeship Council. The bidder must complete, sign, and submit the General Contractor Apprenticeship Certification Form, included in the solicitation, with the bid proposal.

The successful bidder will also be required to complete, sign, and submit the General Contractor Apprenticeship Re-Certification and Certification Form following receipt of the tentative letter of award, and, in addition, each subcontractor must complete, sign, and submit to the successful bidder the Subcontractor Apprenticeship Certification Form prior to the commencement of any work on the project pursuant to this solicitation.

Specific information about apprentice occupations and apprenticeship requirements is available on the Rhode Island Department of Labor and Training website at www.dlt.ri.gov/apprenticeship.

Occupational Safety

The successful bidder must ensure (if the total contract price is at least \$100,000) that all employees at the project site possess a card issued by the United States Department of Labor certifying successful completion of an OSHA ten (10) hour construction safety program.

Hazardous Substances

The successful bidder must submit a chemical identification list to the Rhode Island Department of Labor and Training upon receipt of a Purchase Order from the Division of Purchases prior to performance of the contract awarded pursuant to this solicitation and make available to all employees a list of any hazardous substances that may present a risk of exposure.

Substitutions

Any proposal in response to a request for substitutions in this solicitation must include the detailed information necessary for a comprehensive evaluation, including (without limitation) the name of the material or equipment of the proposed substitution and a complete description of the proposed substitution, with drawings and performance and test data. Products specified in this solicitation establish a standard of quality, performance, dimension, function, and appearance. Proposed substitutions must meet the standard and will not be considered without the prior written approval of the Division of Purchases. All substitution approvals will be posted, as addenda to the solicitation on the Division of Purchases website.

Licenses

The successful bidder and anyone performing any work on the contract awarded pursuant to this solicitation must possess all of the licenses required by any federal, state, or local law to perform such work.

Insurance

The successful bidder must submit a copy of an endorsement and a certificate of insurance that references the solicitation number and names the State of Rhode Island as "certificate holder" and as "additional insured" upon the issuance of the tentative letter of award, on an annual basis during the term of the contract awarded pursuant to this solicitation, and from time to time upon request. The certificate of insurance must state that 30 days' advance notice of cancellation, nonrenewal, or material change in coverage (referencing the solicitation number) will be sent to: Rhode Island Department of Administration, Division of Purchases, One Capitol Hill, Providence, Rhode Island 02908-5855, fax # 401-574-8387, and provide evidence of the following specific types and amounts of insurance:

<u>Type of Insurance</u>	<u>Amount of Coverage</u>
Comprehensive General Liability	\$1 Million each occurrence (inclusive of both bodily injury and property damage)_ \$1 Million products and completed operations aggregate \$1 Million general aggregate

Comprehensive General Liability coverage shall include:

- Independent contractors
- Contractual (including construction "hold harmless" and other types of contracts or agreements in effect for insured operations)
- Completed operations
- Personal injury (with employee exclusion deleted)

Automobile Liability

Combined Single Limit	\$1 Million each occurrence
Bodily injury, property damage, including nonowned and/or hired vehicles and equipment	

Workers Compensation

Coverage B	\$100,000
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Environmental Impairment ("pollution control")	\$1 Million or 5% of contract amount, whichever is greater
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Builder's Risk	Contract amount
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All insurance required by this solicitation, whether through a policy or an endorsement, shall include: (i) a waiver of subrogation, waiving any right the insurance company may have to recover against the State of Rhode Island; and (ii) a provision that the bidder's insurance coverage shall be primary in relation to any insurance, self-insurance, or self-retention maintained by the State of Rhode Island, and any insurance, self-insurance, or self-retention maintained by the State of Rhode Island shall be in excess of the bidder's insurance.

The State Purchasing Agent reserves the right to accept alternate forms and plans of insurance and/or to require additional or more extensive coverage.

Minority Business Enterprises

The Division of Purchases reserves the right to give additional consideration to bid proposals submitted by minority/women business enterprises certified by the Division of Purchases, Minority Business Office ("MBEs") provided that any such bid proposal is fully responsive to the terms and conditions of this solicitation, and the bid price is determined, in the discretion of the Division of Purchases, to be within a competitive range.

Any bidder who does not intend to perform all of the work with its own forces shall recruit and engage MBEs to perform at least 10% of the dollar value of the contract awarded pursuant to this solicitation. To reach that goal, the bidder may allocate up to 60% of its costs for materials and supplies obtained from MBE dealers or 100% of its costs for materials and supplies obtained from MBE manufacturers.

The successful bidder must submit a plan to meet this requirement for approval by the Division of Purchases, Minority Business Enterprise Compliance Office within the 21-day period following the tentative letter of award, identifying all MBEs, and must also demonstrate its good faith best efforts to meet these MBE goals. Information about this requirement and a directory of MBEs certified in Rhode Island is available at www.mbe.ri.gov or (401) 574-8670.

Equal Opportunity

The successful bidder must demonstrate a commitment to equal opportunity and submit an affirmative action plan for review by the Rhode Island Department of Administration State Equal Opportunity Office within the 21-day period following the tentative letter of award. Information about this requirement is available at www.diversity.ri.gov/eoo/eoopagehome.htm or (401) 222-3090.

Drug-Free Workplace

The successful bidder shall comply, and require that its employees comply, with the State of Rhode Island Drug Free Workplace policy and provide a certificate of compliance within the 21-day period following the tentative letter of award.

Sprinkler Impairment

The successful bidder must comply with the requirements of the State of Rhode Island's insurance carrier for sprinkler impairment and hot work, accessible at the Division of Purchases website at www.purchasing.ri.gov.

Foreign Corporations

No foreign corporation or limited liability company may transact business in the State of Rhode Island until it shall have obtained a Certificate of Authority from the Rhode Island Secretary of State, and no foreign limited partnership may transact business in the State of Rhode Island until it shall have obtained a Certificate of Registration from the Rhode Island Secretary of State. The successful bidder, if a corporation or limited liability company, will be required to provide a Good Standing Certificate, and if a limited partnership, will be required to provide a Letter of Legal Existence, issued by the Rhode Island Secretary of State within the 21-day period following the tentative letter of award.

Campaign Finance

The successful bidder who has contributed, within the 24 months preceding the contract award, an aggregate amount of more than \$250.00 within a calendar year to any Rhode Island general officer, candidate for general office, any member of the general assembly, or any Rhode Island political party, must file a "Vendor Affidavit" with the State of Rhode Island Board of Elections. Information about "Vendor Affidavits" and electronic filing is available at www.elections.ri.gov or Board of Elections, Campaign Finance, (401) 222-2056.

Binding Contract

The form of agreement the successful bidder will be required to execute is included in the solicitation. A binding contract between the State of Rhode Island and the successful bidder will be formed by the issuance of a Purchase Order from the Division of Purchases, *and only by the issuance of a Purchase Order, and only to the extent of available funds*. The binding contract will incorporate and be subject to the terms and conditions of the solicitation, including the Invitation to Bid, the Instructions to Bidders, the General Conditions, any Supplemental Conditions, the Plans and Specifications, the Bid Preparation Checklist, the Bid Form, the Bidder Certification Cover Form, the Agreement, and also the Purchase Order. The successful bidder shall be authorized to commence work only upon the issuance of the Purchase Order and, in addition, an authorization from the user agency.

Compliance with Terms of Contract

Failure of the successful bidder to comply with the terms and conditions of any contract awarded pursuant to this solicitation may result in nonpayment, suspension or termination of the contract, suspension or debarment of the bidder, or any other necessary or appropriate remedy.

GENERAL PROVISIONS/CONTRACT SPECIFIC

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1. BRIEF SCOPE OF WORK

This project shall consist of furnishing, installing, and performing validation testing for two (2) WaterFire Display Systems, along with providing warranty from defects of system components for three years from date of acceptance by the Department.

A WaterFire Display System (WFDS) is defined as an integrated system composed of a full matrix LED type Dynamic Message Sign (hereinafter referred to as the LED Display) affixed to a static aluminum recreational destination message board, as well as the sign controller, sign communications equipment, Ethernet switch and all solar power equipment needed to provide a working display system for the Department's purpose. The WFDS also includes the Equipment cabinet, Battery Cabinet and all associated power and communications interconnections required to form a working system.

The WFDS shall be solar powered utilizing a solar power panel array, associated battery bank, solar controllers, and other ancillary solar power components required to energize all components of the WFDS. The Contractor shall furnish and install all power services to each component including to the LED Display, the cellular modem, the sign controller the solar controller, and the network switch.

The WFDS includes all structures, cabinets, conduit, cabling, and mounting hardware required to house and support the WFDS components. The Contractor shall mount the WFDS using wooden posts, supports and cross braces as required at locations identified by the RIDOT. Work by the Contractor shall include the installation and commissioning of all components, as well as providing the traffic management set ups required to install the equipment.

Please note there is a delivery time requirement for this work. The DOT wishes to have these signs operational for the remainder of the WaterFire season in 2016. For this reason, **the bidder is required to deliver, install and verify through accepted testing of all deliverables for this work within 5 weeks of notice of award.**

2. WFDS SIGN LOCATIONS

There shall be WFDS(s) installed at the following two locations.

WFDS 1 "I-95 NB @ Point Street"

Sign is to be located in the grass shoulder between I-95 NB and the E. Franklin Street on ramp to I-95 NB, just north of the Point Street overpass at approximately latitude 41.815642, longitude -71.412728.

WFDS 1 shall be located at a minimum of 15 feet (15') from the closest edge of I-95 pavement.

WFDS 2 "I-95 SB @ Charles Street"

Sign is to be located in the grass shoulder of I-95 SB approximately 330 feet north of the Barbara Leonard Way overpass at approximately latitude 41.841962, longitude -71.411365.

WFDS 2 shall be located at a minimum of 4 feet (4') from the guardrail.

3. SEQUENCE OF CONSTRUCTION

- A. One week prior to the Pre-Construction Conference, the contractor must submit to the Department for approval, a detailed construction work sequence and time schedule for the completion of all work associated with this contract and the requirements it contains. Approval of work sequence and time schedule is required before the start of any construction or other work associated with this contract.
- B. The proposed construction sequence and time schedule must consider and address safe vehicle passage through the project areas.
- C. All disturbed grass areas shall be restored with plantable soil and type 1 seeding.
- D. The contractor shall be responsible for maintaining appropriate construction related signing at all times. Any signs not appropriate for construction activity taking place at any given time shall be removed or covered to the satisfaction of the Engineer.
- E. Any deviations from the requirements stated here as well as any deviations from the approved construction work sequence and time schedule must be submitted to the Engineer in writing for approval.
- F. Completion date must be within 5 weeks of notice of award.

4. COORDINATION WITH RIDOT

The Contractor will coordinate all submittals and construction activities with the RIDOT Traffic Engineering Section:

Steven W. Pristawa P.E.
Chief Civil Engineer
Traffic Engineering
RI Department of Transportation
2 Capitol Hill
Providence, RI 02903
phone: (401) 222-2694, ext. 4207
fax: (401)222-3006

5. DIG SAFE

The Contractor shall check and verify the exact location of all existing utilities, both underground and overhead with Dig Safe (1-800-225-4977). Any damage to utilities shall be the Contractor's responsibility. Costs of such damage shall be borne by the Contractor. No excavation shall be done until all involved utility companies and Dig Safe are notified 48 hours in advance.

6. GENERAL NOTES – UTILITIES

- A. The Contractor shall install a polyethylene rope pull wire in all conduits installed under this contract. Cost of the pull wire shall be considered incidental to the price of the conduit.
- B. The Contractor is to run #6 bare ground wire through all PVC conduits. Cost of the wire shall be considered incidental to the price of the conduit.

- C. All hand holes, if required, shall have ground rods and bare ground wire connected to bare ground wire running through the conduit system.

7. ELECTRICAL CODE AND STANDARDS

- A. Unless otherwise specified, all work and materials shall conform to the requirements of the NEC, herein referred to as the electrical code.
- B. All electrical equipment shall be designed, manufactured and tested in accordance with the applicable standards of the ANSI, EIA, FSS, IMSA, ITE, NEMA, UL.
- C. Wherever reference is made to codes or standards mentioned above, the reference shall be construed to mean the code or standard that is in effect on the date of advertising of the project.

8. COMMUNICATIONS PROTOCOL STANDARD

The sign controller hardware, firmware and control software communications shall comply with the most recent revision (at time of advertisement) of the following AASHTO-ITE-NEMA Joint Committee standards for NTCIP:
1203:v3 – NTCIP Object Definitions for Dynamic Message Signs.

9. MATERIAL, MANUFACTURING, AND DESIGN STANDARDS

The WFDS provided for this contract shall comply with the most recent revision of the following standards, even if no revision date is given:

- A. Electrical Components – Components and circuits (120 VAC and greater) shall be wired and color-coded per the National Electric Code.
- B. NEMA Standards Publication TS 4-2005, “Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements.”
- C. Environmental Resistance – The assembly shall comply with NEMA Type 3R criteria at a minimum, as described in NEMA Standards Publication 250-1997, Enclosures for Electrical Equipment (1000 Volts Maximum)
- D. Maintenance Access – The LED Display shall be accessible; and other internal equipment and components shall be readily accessible within the equipment cabinets.
- E. Structural Integrity – The LED Display and support structure shall be designed and constructed to withstand the minimum loads per AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition.
- F. The Contractor shall submit design calculations prepared by a Professional Engineer registered in the State of Rhode Island and Shop Drawings for approval by the Engineer.
- G. Solar Power Panels – Shall be rated compliant with UL 1703 Standard for Flat-plate Photovoltaic Modules and Panels.
- H. Photometric – The LED Display shall be designed to meet the photometric recommendations of the Texas Transportation Institute for Portable Changeable Message Sign (PCMS) Report 4940-2 photometric properties.
- I. All mounting hardware shall be stainless steel.

- J. All wooden posts within contact of the aluminum components such as static sign and boxes shall be Chromated copper arsenate (CCA) treated.
- K. Installation must comply with RIDOT Standard Details for signs and sign supports.

10. LED DISPLAY MANUFACTURER QUALIFICATIONS

The WFDS LED Display manufacturer and installation contractor for this procurement shall:

- A. Have been in the business of manufacturing Light Emitting Diode (LED) Display signs, which are used to manage vehicular roadway traffic and safety zones for a minimum period of five (5) years prior to the contract bid date.
- B. Have in operation as of the contract bid date a minimum of two (2) independently controlled portable or permanent LED Display systems that communicate with a remote computer using NTCIP over wireless technology. Each of the two systems shall contain a minimum of two (2) LED Displays.
- C. Have been in business under the same corporate name for a period of no less than two (2) years prior to the contract bid date.
- D. Utilize a documented in-house quality management procedure that has been in place for no less than two (2) years prior to the contract bid date.

11. SHOP DRAWINGS AND SUBMITTALS

- A. This Section specifies the general requirements and procedures for preparing and transmitting equipment submittals and technical data to the Engineer for his information, acceptance or approval.
- B. All submittals required by the Contract are to be submitted to the Engineer within 14 calendar days of the receipt of the Notice to Proceed. The submittals shall be broken down into individual subsections. The subsections
- C. All submittals will be reviewed and a response given within 7 calendar days of receipt of submittal by the Engineer.
- D. Equipment Submittals shall be complete and shall include: technical data sheets, material cut sheets, user manuals, operations manuals, working drawings, compliance matrix, test procedures, training courses and any other documentation required to verify that the proposed equipment and material meets the requirements of the Contract Documents. Poorly reproduced and incomplete documents may be rejected.
- E. All submitted product data cut sheets shall clearly indicate with an arrow or circle the specific make and model of the product being proposed. Also, clearly indicate with an arrow or circle all included options to be provided with the product.
- F. Upon approval of submittals the identified equipment may be used. Once submittals are approved, no changes in materials or equipment will be permitted.

Until submittals are approved, material or equipment delivery will not be accepted nor will any payment be made. Approval of the submittal does relieve the Contractor of the responsibility with complying with the plans and specifications.

- G. The following list items of work for which shop drawings and/or other submittals are required is provided for the convenience of the Contractor. This list includes only the major items of work; it does not itemize all submittals required by the Contract Documents. All submittals shall be in accordance with Section 105.02 of Standard Specifications for Road and Bridge Construction, Amended May 2016. The Contractor is responsible for the timely submission of all shop drawings and other documents required by the Contract. No extra payment will be made, nor will any extension be made to the Contract completion date for making required submittals.
- a) DMS Structural Support (must be stamped by a Rhode Island Registered Professional Engineer)
 - b) Equipment Cabinet and foundation, or mounting method
 - c) Dynamic Message Sign and Controller
 - d) Ethernet Switch
 - e) Solar Panels on wood pole
 - f) Proposed method of installation and attachment of the solar power panels to the Solar Array Structure
 - g) Solar Batteries
 - h) Battery Enclosure and foundation, or mounting method
 - i) Solar Controller
 - j) 4G/LTE gateway cellular modem and antenna
 - k) System Validation Test Plan
 - l) One-line diagram of all electrical components
 - m) One-line diagram of all communication components
- H. In addition to equipment submittals, the Contractor shall submit sufficient documentation of component performance specifications and calculations that adequately **demonstrates to the Engineer that the solar equipment is adequately sized to meet the requirements of this specification** prior to acceptance of proposal.
- I. Submit all work related submittals as required by Contract Documents on a Transmittal Form. A draft of the required transmittal form shall be submitted to the Engineer for acceptance before any submittals are accepted. At a minimum transmittal forms shall contain the following information:
- a) Special Provision Item (example: Item T16.9901)
 - b) Pay Item Description (example: WFDS)
 - c) Description of the Item to be submitted (example: Battery Enclosure)
 - Included in this description shall be the Manufacturer, Make and Model of the Item.
 - d) Submittal Number
 - Every submittal sent to the Engineer for approval shall have a unique

identifier.

- Any revisions that are necessary to a certain item shall include a letter suffix. (For example: Initial submittal is sent to Engineer for approval, Submittal #1. Engineer requires the item to be resubmitted. The resubmittal should read: Submittal #1A. Additional resubmittals shall continue to B, C, etc...)
- e) Date sent to Engineer
 - f) Contract Number
 - g) Project Name
 - h) Comments
 - The comments section shall include enough room for the Engineer to stamp and, if necessary, comment on the submittal.
 - i) Signature of Transmitter
 - Stamp and sign each submission with following statement: "Having checked this submission, we certify that it conforms to the requirements of the Contract in all respects, except as otherwise noted."
 - By reviewing and approving each submittal, the Contractor represents that he has determined and verified materials, field measurements and field construction criteria related thereto, and has checked and coordinated information contained within such submittals with requirements of the Summary of Work and Contract.
- J. Certify shop drawings, working drawings and calculations as submitted by a Professional Engineer registered in the State of Rhode Island when required by individual Specification Sections. Convey information sufficient to completely explain the structures, machines, and systems described and their intended manner of use. When professional certification is required by Contract requirements, the Contractor shall verify and attest to the accuracy and completeness of such calculations and certifications.

12. DAMAGE TO EXISTING UTILITIES AND UTILITY STRUCTURES

The Contractor shall use care when working in or within the vicinity of existing drainage structures and underground utilities. The Contractor shall check the location of all existing utilities and service connections both underground and overhead in accordance with the "Dig Safe Program Law" enacted by Rhode Island Legislation Bill No. 79S-291, which became effective July 1, 1979 and was amended effective November 1, 2009. The Contractor should be aware that not all utility companies subscribe to the Dig Safe Program. It is the Contractor's responsibility to ensure that all utility companies have been notified and all utilities have been marked prior to commencing their work. Any damages to the utilities which are shown on the plans or detailed by Dig Safe shall be the Contractor's responsibility. Damages to utilities and their associated service connections which are not located by Dig Safe, will be paid for by the Department.

The Contractor will be responsible for:

- any damage to any existing structures or equipment in or adjacent to the roadway, and

- any damage to existing walls, fences, etc.

The Contractor shall make every effort to prevent debris from falling into catch basins. Should any debris fall inside a structure, it shall be removed immediately.

13. CONTRACTOR'S RESPONSIBILITY FOR DAMAGED STORM DRAINS

The Contractor shall use care when working within or in the vicinity of existing drainage structures. Any drainage structures, pipe or culverts damaged during the disposing of, cleaning of, and installation of or while making repairs to drainage structures, pipes or culverts or while carrying out any other work on this contract shall be the Contractor's responsibility. Any pipe/culvert damaged by the Contractor while carrying out this contract shall be replaced or repaired by the Contractor to the satisfaction of the Engineer at no additional charge to the State.

14. INCIDENT MANAGEMENT

In the event of an accident or other unforeseen incident within the work zone, which closes the roadway, the Contractor shall positively cooperate with local authorities by providing traffic control devices, personnel, equipment and material as required, both on and off site. The Contractor shall assist in whatever way possible to clear debris from the roadway and maintain traffic flow. Payment for this work shall be on a force account basis. If the personnel are not available on site, they shall be "on call" and able to respond to the site within one hour of notification by the Department of Transportation (by phone or in person) to the Contractor's appointed representative.

15. SPECIAL REQUIREMENT FOR TRAFFIC PROTECTION

The Contractor shall be advised that the requirements of the *Standard Specifications for Road and Bridge Construction*, the *Manual on Uniform Traffic Control Devices, 2009* and the special requirements of other sections of this contract document are minimum requirements. It is the Contractor's responsibility to supplement the specifications as necessary to ensure the public's safety. All Maintenance and Protection of Traffic Devices shall be in place and approved by the Engineer prior to starting construction at a particular location. This work shall be included under Item Code T16.9901 "Furnishing, Installing, Warranty, and Validation Testing of WaterFire Display System." There will be no separate payment.

16. TRANSPORTATION MANAGEMENT PLAN

Included as Appendix A to these Contract Specific General Provisions is the Transportation Management Plan (TMP) for this project. The TMP lays out the set of coordinated transportation management strategies that will be used to manage the work zone safety and mobility impacts of this project. In the event of a discrepancy between information in the TMP and information elsewhere in the Contract Documents, the former shall govern.

The Contractor's attention is called to the applicable portions of Section 100 – Award and Execution of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions, which describes the requirements for the Contractor's designation of a TMP Implementation Manager for

the Contract and the requirements for the training of all Contractor and Subcontractor personnel involved in work zone design, implementation, operation, inspection, management, and/or enforcement.

The Department's latest Training Guidelines for Personnel Responsible for Work Zone Safety & Mobility are available under the "Training" section at <http://www.dot.ri.gov/humanresources/index.asp>.

17. STORAGE OF CONSTRUCTION MATERIAL AND/OR EQUIPMENT

Roads without Curbing and Sidewalks:

Storage of construction material and/or equipment within the road "clear zone", as described below, will require prior written approval of the Engineer. Material stored in the "clear zone" must be used or moved within 14 days. Furthermore, no overnight storage of construction equipment within the "clear zone" will be allowed.

Posted Speed	Distance from Edge of Travel Lane
39 MPH or Less	12 Feet
40 – 45 MPH	16 Feet
50 MPH	20 Feet
55 MPH or Greater	30 Feet

Area of the "clear zone" that is used for storage of construction materials must be clearly delineated with appropriate traffic control devices.

18. TRAFFIC FINES IN WORK ZONES

"Traffic Fines in Work Zone Regulatory Signs", RI Standard 27.1.1, shall be utilized whenever construction activities are in progress and construction personnel are present. The signs shall either be removed from the site or covered at all other times.

19. RIGHT-OF-WAY AND DAMAGE TO PROPERTY

- A. If the Contractor desires to use additional areas outside of the Right-of-Way, he shall arrange for such areas at his own expense.
- B. The Contractor shall take adequate precautions to avoid unnecessary damage to pavements, utilities, or private properties. The Contractor shall promptly repair (in kind), at his own expense, any damage attributed to his work to such pavements, utilities, or private property to the satisfaction of the Engineer.
- C. The Contractor shall assume all risk and liability for his equipment left on site during both working and non-working hours.

20. DIGSAFE

The Contractor shall use care when working in or within the vicinity of existing drainage structures and underground utilities. The Contractor shall check and verify the location of all existing utilities and service connections both underground and overhead in accordance with the "Dig Safe Program Law" enacted by Rhode Island Legislation Bill

No. 79S-291, which became effective July 1, 1979 and was amended effective November 1, 2009. No excavation shall be done until all involved utility companies and Dig Safe are notified 48 hours in advance. The Contractor should be aware that not all utility companies subscribe to the Dig Safe Program. It is the Contractor's responsibility to ensure that all utility companies have been notified and all utilities have been marked prior to commencing their work. Any damage to existing utilities marked in the field, or as a result of failing to contact the appropriate utility company, shall be repaired or replaced at no additional cost to the State. The Contractor shall contact DigSafe (1-888-344-7233) prior to commencing with construction.

SPECIFICATIONS – JOB SPECIFIC

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SPECIFICATIONS - JOB SPECIFIC

Replace **Subsection 108.01; Subletting of Contract**, page 1-56 of the Rhode Island Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions in its entirety with the following.

SECTION 108

PROSECUTION AND PROGRESS

108.01 SUBLETTING OF CONTRACT

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of its right, title, or interest therein, without written consent of the Engineer. If the Engineer gives such consent, the Contractor will only be permitted to sublet a portion thereof. The Contractor shall perform with its own organization work amounting to not less than 40 percent of the adjusted contract cost. The adjusted contract cost is the total contract cost less the total cost of subcontract specialty items listed in the Proposal. Specialty Items are defined in **Subsection 101.63**.

No subcontracts or transfers of Contract shall relieve the Contractor of liability under the Contract and Bonds. A copy of written agreements with subcontractors must be submitted when making application to sublet any work under the Contract. The Contractor shall not require or withhold retainage from subcontractors. Furthermore, no agreements between the Contractor and its subcontractors or vendors shall create any "third party" relationships between said subcontractors or vendors and the State.

The Contractor shall provide written notice to, and obtain prior written consent from the Engineer, before allowing any subcontractor to sublet any portion of its work to a lower-tier contractor.

JOB SPECIFIC

108.03 PROSECUTION AND PROGRESS

In accordance with **Section 108.03, PROSECUTION AND PROGRESS, Para. a., General Requirements, 1 Project Schedule Program**

The Schedule Level for this contract is **Schedule Level B.**

Replace **Subsection 108.03, PROSECUTION AND PROGRESS, Para. a., General Requirements, 2 Software** with the following:

108.03. a. 2 Software

The software used to generate the CPM Schedule shall be Primavera Contractor, Version 6.1; or P6 Version 7 or 8. The contractor shall purchase and maintain a valid software maintenance agreement for each license of software necessary to produce and maintain the Project Schedules. Unless specified elsewhere in the Contract Documents, the Contractor shall comply with the terminology defined by the Primavera Project Management Manual.

JOB SPECIFIC

108.08 PROSECUTION AND PROGRESS

108.08 Failure to Complete On Time

In accordance with Section 108.08 of the RIDOT Rhode Island Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions, Failure to Complete on Time, Para. a., Phased Completion, Interim Completion, and Substantial Completion, the following defines the Substantial Completion Date and associated Liquidated Damages:

Substantial Completion: October 28, 2016

All Contract work shall be completed, as defined by Section 101.71.

Liquidated Damages: \$550.00 per calendar day

JOB SPECIFIC

109.04

DIFFERING SITE CONDITIONS, CHANGES, EXTRA WORK AND FORCE ACCOUNT WORK.

Remove Subsection 109.04; Differing Site Conditions, Changes, Extra Work and Force Account Work, pages 1-80 to 1-82 of the *Rhode Island Standard Specifications for Road and Bridge Construction, Amended May 2016* in its entirety and replace with the following.

109.04 DIFFERING SITE CONDITIONS, CHANGES, EXTRA WORK AND FORCE ACCOUNT WORK.

- a. **Methods of Payment.** Differing site conditions, changes, extra work, and significant changes in the character of the work, all performed in accordance with **SECTION 104; SCOPE OF WORK**, will be paid for in accordance with the following methods as appropriate:
1. Contract unit prices.
 2. Unit prices agreed upon in the order authorizing the work.
 3. An agreed upon Lump Sum amount.
 4. If directed by the Department, on a Force Account Basis to be compensated in the following manner:
 - a. **Labor.** For all labor and foremen in direct charge of the specific operations, the Contractor shall receive the rate of wage actually paid as shown by its certified payroll, which rate shall be at least the prevailing rate of wage (or scale), for each and every hour that said labor and foremen are actually engaged in the work.

No part of the salary or expenses of anyone connected with the Contractor's forces above the grade of foreman, and having general supervision of the work, will be included in the labor item as specified above.

The Engineer reserves the right to determine the number and type of labor employed.

The Contractor shall receive the actual costs paid to, or in behalf of, workers by reason of subsistence and travel allowances, health and welfare benefits, pension fund benefits or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work.

An amount equal to 20 percent of the sum of the above items will also be paid the Contractor.

Date: 5/03/2016

- b. **Bond, Insurance and Tax.** For property damage and liability insurance premiums, unemployment insurance contributions, and social security taxes incurred on force account work, the Contractor shall receive the actual cost, to which cost a surcharge of 6-percent will be added. For Worker's Compensation Insurance Premiums, the Contractor shall receive the actual cost of the worker's compensation costs incurred, which shall be calculated net of all applicable credits, rebates, refunds and allowances. An additional surcharge will be added to the actual costs incurred. The surcharge amount is calculated from the Experience Modification Factor (MOD Factor) as follows:
1. For MOD factors greater than 1.0 the surcharge shall be 6%
 2. For MOD factors greater than .80 and less than or equal to 1.0 the surcharge shall be 8%.
 3. For MOD factors less than or equal to .80 the surcharge shall be 10%.

The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bonds, insurances and taxes. In addition, the Contractor shall submit a copy of their Worker's Compensation policy showing the current MOD factors.

- c. **Materials.** For materials accepted by the Engineer and used in the work, the Contractor shall receive the actual cost of such materials delivered to the site, including transportation charges paid (exclusive of machinery rentals as hereinafter set forth), to which cost a surcharge of 15 percent will be added. The Contractor will not be reimbursed for any penalty or carrying charge incurred due to late or delayed payment for materials used in the work.
- d. **Equipment.** For any machinery or special equipment (other than small tools) including transportation cost, the use of which has been authorized by the Engineer, the Contractor shall receive either the "hourly rental rates" as prescribed herein by the Department, or the actual documented cost plus an amount equal to 10 percent of said actual documented cost, whichever is less. Under no circumstance shall the payment exceed the replacement cost of the equipment.

All rental rates shall include the estimated operating cost as indicated for that equipment in either the Rental Rate Blue Book or the Rental Rate Blue Book for Older Equipment, including the Rate Adjustment Tables approved for projects wholly or partially funded by the Federal Highway Administration (FHWA). Operators' wages are not included in the estimated operating cost and are paid separately, except for certain specified equipment in which the operator's wages are included.

The "hourly rental rate" for an individual piece of equipment shall be determined by dividing the associated monthly rate, modified by the Rate Adjustment Tables, as contained in the Rental Rate Blue Book by one

hundred seventy-six (176). There will be no adjustment to the hourly rate for the period of use.

For rented equipment, the cost shall be based on the actual documented cost plus an amount equal to 10-percent of said actual documented cost, subject to the conditions set forth below. The actual documented cost shall consist of the paid invoice for rented equipment plus other documented operating costs (i.e. fuel, maintenance, repairs, etc.).

Actual documented costs plus 10 percent of said costs shall not exceed the cost as calculated from the RENTAL RATE BLUE BOOK or the RENTAL RATE BLUE BOOK FOR OLDER CONSTRUCTION EQUIPMENT. The Contractor shall submit documentation for both the hourly rental rates and actual documented costs to determine that the actual documented costs plus 10 percent of said costs does not exceed the calculated rental rate costs. No percentage surcharges will be added to the "Blue Book" rates as prescribed herein for rented equipment.

For equipment which is already on the project, the rental period shall start when such equipment is ordered to work by the Engineer, and shall continue until ordered to stop work.

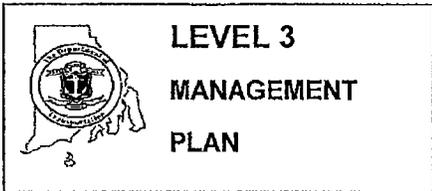
For equipment which has to be brought to the project specifically for use on force account work, the State will pay all loading and unloading costs, and all transportation costs to and from the project, including assembling and dismantling, provided, however, that the cost of return transportation shall not exceed that of moving the equipment to the project. Loading, unloading and transportation costs will not be paid if the equipment is used for work other than force account work while on the project. The rental period shall start at the time the equipment is ready for operation, and shall extend during the period of time the equipment is actually utilized on force account work. The rental period shall end when the equipment is released by the Engineer.

All equipment, including trucks, shall, in the judgment of the Engineer, be in good working condition and suitable for the purpose intended. The Engineer reserves the right to determine the number of units of the various types of equipment to be employed on force account work. The manufacturer's model identification shall be the basis for identifying the type of equipment for payment purposes. Certification for the model year of the equipment will be required.

- e. **Subcontracting.** For work performed by a subcontractor, the Contractor shall accept as full payment therefore, an amount equal to the actual cost to the Contractor of such work performed by the subcontractor as determined by the Engineer, plus 10 percent of said cost.
- f. **Miscellaneous.** No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

- g. **Compensation.** The Contractor's representative and the Engineer shall daily compare records of work completed on a force account basis. The Engineer will then prepare the daily work sheets and said sheets will be signed by the Contractor's representative no later than noon of the next working day.
- h. **Statements.** No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with six copies of itemized statements of the cost of such work, incurred on a daily basis, and detailed as follows:
1. Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman.
 2. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
 3. Quantities of materials, prices, and extensions.
 4. Transportation of materials.
 5. Cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions, and social security taxes.

Statements shall be accompanied and supported by certified payrolls, and receipted invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from its stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.



Project Name: **WaterFire Sign Installation**

RI Design Contract No(s): _____

RI Construction Contract No(s): _____

Submission: **ADV**

Date: **9/2/2016**

PROJECT INFORMATION

Brief Project Description:

This project shall consist of furnishing, installing, and performing validation testing for two (2) WaterFire Display Systems, including solar power system and ground mounted cabinet.

General Work Limits:

I-95 NB at Point Street and I-95 SB at Charles Street.

WORK ZONE LOCATIONS

ROADWAY NAME or INTERSECTION	FROM	TO	APPROX. LENGTH
I-95 Northbound	Point Street		50'
I-95 Southbound	Charles Street		50'

General Project Schedule*:

Construction for this project is expected to begin Fall 2016 and is expected to be completed in Fall 2016.

*The information in this section is not intended to and shall not supersede the approved schedule and milestone/completion dates for the project.

TRAFFIC-RELATED WORK RESTRICTIONS

General Restrictions:

See attached General Restrictions chart (Attachment A).

Holiday Restrictions:

See attached Holiday Restrictions chart (Attachment B).

TEMPORARY TRAFFIC CONTROL PLANS

These RIDOT- and/or Designer-Developed TTC Plans will be used during the work on this project

RIDOT TYPICAL TTC PLANS		Included in:		DESIGNER DEVELOPED TTC PLANS		Included in:	
		TMP	Plan Set			TMP	Plan Set
<input type="checkbox"/>	Mobile Operation	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Work Beyond the Shoulder	<input checked="" type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Shoulder Closure - Two Lane Road	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Shoulder Closure - Limited Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	1-Side Lane Shift - Two Lane Road	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	2-Side Lane Shift - Two Lane Road	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Lane Shift - Limited Access	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Lane Closure - Two Lane Road	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Lane Closure - Four Lane Road	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Lane Closure - Limited Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Double Lane Closure - Limited Access	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>

PUBLIC INFORMATION PLAN

These strategies will be used to provide information concerning the project to road users and the community

SELECTED STRATEGIES	RESPONSIBILITIES / REQUIREMENTS / SPECIAL CONSIDERATIONS
RIDOT travel advisories news releases	RIDOT TMP Imp. Mngr. to send RIDOT notification form to Communications min. 48 hrs. in advance of restrictions.
RIDOT travel advisories web site	RIDOT TMP Imp. Mngr. to send RIDOT notification form to Communications min. 48 hrs. in advance of restrictions.
RIDOT 511 traveler information system	RIDOT TMP Imp. Mngr. to send RIDOT notification form to RIDOT TMC min. 48 hrs. in advance of restrictions.
Changeable message signs (CMS)	Installed at project limits to notify drivers of upcoming road closures and construction operations.

TRANSPORTATION OPERATIONS PLAN

These strategies will be used to provide improved transportation operations/safety within project work zones

SELECTED STRATEGIES	RESPONSIBILITIES / REQUIREMENTS / SPECIAL CONSIDERATIONS
Dedicated (paid) police enforcement	The Contractor shall request the use of police details operations to the Resident Engineer as needed.

PERFORMANCE MONITORING, CHANGES TO TMP, & CONTINGENCIES

The Contractor's TMP Implementation Manager (if identified below) is responsible for keeping the portion of the project being used by public traffic in a condition that (1) safely and adequately accommodates such traffic and (2) is in accordance with the Traffic-Related Work Restrictions, the Temporary Traffic Control Plans, and where appropriate, the other transportation management strategies identified above. The RIDOT TMP Implementation Manager or his/her responsible designee should (1) inspect the project work zones at initial setup, at the start of each subsequent work day, and just prior to extended breaks in the work (e.g., weekends) for conformance with the Temporary Traffic Control Plans, the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features, and where applicable, the other transportation management strategies identified above and (2) document all work zone-related feedback and complaints that are received from the public.

If at any time (1) a significant deviation from any of the strategies included in the TMP (e.g., the use of an alternate construction sequence) is desired by one or more members of the project implementation team, (2) field observations and/or data suggest that impacts to road users are or will be unacceptable, or (3) one or more performance requirements established in the TMP are not being met in the field, the RIDOT TMP Implementation Manager shall report the situation to his/her supervisor or Division/Section/Unit manager. The supervisor / manager will coordinate with the State Traffic Engineer, the Deputy Chief Engineer, the TMP Implementation Manager(s), the Chief Engineer, and/or other interested parties as appropriate and/or necessary to consider and determine whether revised and/or alternate strategies should be implemented in an effort to lessen the adverse safety and/or mobility impacts of the project. If the supervisor / manager deems that strategy changes should be implemented, the changes shall be documented in a revised version of the TMP and the Deputy Chief Engineer, the State Traffic Engineer, and the Chief Engineer must approve of the revised TMP prior to their implementation.

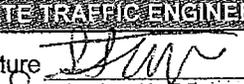
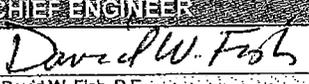
If a significant deviation from any of the strategies included in the TMP is requested by the Contractor, unless directed otherwise by the RIDOT the Contractor is responsible for preparing and submitting to the RIDOT TMP Implementation Manager appropriate documentation (e.g., design calculations, analysis reports, Temporary Traffic Control Plans, etc.) showing that the requested change(s) are (1) feasible and (2) expected to result in safety and mobility impacts that are no more adverse than the impacts resulting from the strategies already included in the latest approved TMP. The RIDOT will review and consider the submittal(s) as described in the preceding paragraph and will determine whether the changes should be implemented. If the requested changes are approved by the RIDOT, unless otherwise directed by the RIDOT the Contractor shall prepare and submit to the RIDOT TMP Implementation Manager a revised version of the latest approved TMP in both printed and electronic (Microsoft® Excel) format that documents all of the approved changes. Work to implement the changes shall not begin until the Deputy Chief Engineer, the State Traffic Engineer, and the Chief Engineer have approved of the revised TMP.

When unexpected events (e.g., crashes, inclement weather, unforeseen traffic demands, etc.) occur in a project work zone where one or more lanes are closed, the RIDOT TMP Implementation Manager or his/her responsible designee should (1) determine whether or not the lane closure(s) can/should be removed in order to improve traffic operations and/or minimize delays and (2) if deemed appropriate, take action to remove the lane closure(s).

Other Requirements: 

TMP APPROVALS

All approvals must be obtained prior to start of work

DEPUTY CHIEF ENGINEER			STATE TRAFFIC ENGINEER			CHIEF ENGINEER		
Signature: 			Signature: 			Signature: 		
Date: <u>9/2/16</u>			Date: <u>9-2-16</u>			Date: <u>9-2-16</u>		
Revision #	Initials	Date	Revision #	Initials	Date	Revision #	Initials	Date

TMP IMPLEMENTATION MANAGERS

Project managers with the primary responsibility & authority for implementation of this TMP

RIDOT	CONTRACTOR (if contract work)
Name: _____	Name: _____
Title: _____	Title: _____
Unit: _____	Company/Unit: _____
Office Phone: _____	Office Phone: _____
Mobile Phone: _____	Mobile Phone: _____
E-Mail: _____	E-Mail: _____

**TRANSPORTATION MANAGEMENT PLAN
ATTACHMENT A:
GENERAL RESTRICTION CHART**

MINIMUM NUMBER OF LANES & SHOULDERS TO REMAIN OPEN TO TRAFFIC ^{1,2}											
Location	Time of Day		Day of Week							Saturday	Sunday
	From	To	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday			
I-95 NB	0:00	5:00	4L	4L	4L	4L	4L	4L	4L	ALL	
	5:00	9:00	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	
	9:00	15:00	5L	5L	5L	5L	5L	5L	5L	ALL	
	15:00	19:00	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	
	19:00	24:00	4L	4L	4L	4L	4L	4L	4L	ALL	
I-95 SB	0:00	5:00	3L	3L	3L	3L	3L	3L	3L	ALL	
	5:00	19:00	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	
	19:00	24:00	3L	3L	3L	3L	3L	3L	3L	ALL	

LEGEND

- ALL** All travel lanes and shoulders shall remain open to traffic.
- 3L** Three (3) travel lanes shall remain open to traffic.
- 4L** Four (4) travel lanes shall remain open to traffic.
- 5L** Five (5) travel lanes shall remain open to traffic. Shoulder may be closed.

NOTES

- 1 The set-up and break-down of temporary traffic control devices within a traveled way shall be construed as a closure of that traveled way.
- 2 The provisions noted herein shall not free the Contractor from his responsibility to conduct all work in such a manner that assures the least possible obstruction to traffic.

JOB SPECIFIC

Replace **Subsection 109.06(a); Partial Payments - Amount**, page 1-83 of the Rhode Island Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions in its entirety with the following.

SECTION 109.06

MEASUREMENT AND PAYMENT

109.06 PARTIAL PAYMENTS

a. Amount. Partial payments will be made bi-weekly as the work progresses. The amount of the partial payments shall be 100 percent of the Contract price for the work performed during the previous payment period, all as measured and/or estimated and accepted by the Engineer.

No partial payments shall be made when, in the judgment of the Engineer, the work has not proceeded according to provisions of the Contract. Partial payments shall not be construed as an acceptance by the Department of any materials furnished or work performed.

No partial payments shall be made on perishable plant materials until such plant materials are planted as specified in the Contract.

Upon written request from the Contractor, supported by delivery invoices, and for those conditions outlined below, the Engineer may allow partial payment on such approved materials, supplies and equipment as are delivered to an approved site in acceptable condition. Such materials, supplies and equipment, as yet not incorporated into the work, shall be identified, set aside and suitably stored at or near the site of the work.

JOB SPECIFIC

Replace **Subsection 109.09; Acceptance and Final Payment - Amount**, pages 1-84 and 1-85 of the Rhode Island Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions in its entirety with the following.

**SECTION 109
MEASUREMENT AND PAYMENT**

109.09 ACCEPTANCE AND FINAL PAYMENT

When the project has been accepted as provided in **Subsection 105.17**, the Engineer will prepare the final estimate of work performed. If the Contractor approves the final estimate or files no claim or objection to the quantities therein within 30 days of receiving the final estimate, the Department will process the estimate for final payment. With approval of the final estimate by the Contractor, payment will be made for the entire sum found to be due after deducting all previous payments and all amounts deducted under the provisions of the Contract.

If the Contractor files a claim in accordance with Contract requirements, it shall be submitted in writing in sufficient detail to enable the Engineer to ascertain the basis and amount of such claim. Upon final adjudication of the claim, any additional payment determined to be due the Contractor will be placed on a supplemental estimate and processed for payment.

All prior partial estimates and payments will be subject to correction in the final estimate and payment.

JOB SPECIFIC

**937.1000 MAINTENANCE AND MOVEMENT OF TRAFFIC PROTECTIVE
DEVICES**

DESCRIPTION:

Subsection 937.05.2; Failure to Comply, part a. Maintenance, of the Rhode Island Rhode Island Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions requires that a daily charge be deducted from monies due the Contractor for failure to adequately and safely maintain traffic control devices along any portion of the project.

The charge for this Contract will be:

\$ 1000.00 per day

Subsection 937.05.2; Failure to Comply, part b. Movement, of the Rhode Island Rhode Island Standard Specifications for Road and Bridge Construction, amended May 2016, with all revisions requires that a charge be deducted from monies due the Contractor for failure to remove and/or relocate traffic control devices for compliance with the traffic-related work restrictions included in the Transportation Management Plan or to otherwise meet changes in traffic conditions, construction operations, or other conditions affecting the safety and/or mobility of the traveling public.

The charge for this Contract will be:

\$ 1000.00 per half hour per travel lane that is closed to traffic

T16.9901 Furnishing, Installing, Warranty, and Validation Testing of WaterFire Display System

DESCRIPTION:

Work under this item includes furnishing, installing, and performing validation testing for two (2) WaterFire Display Systems, along with warranty from defects of system components for three years from date of acceptance by the Department.

Installation shall include LED Displays affixed to static aluminum recreational destination message boards, as well as sign controllers, sign communications equipment, Ethernet switches and all solar power equipment, equipment cabinet, battery cabinet and all associated power and communications interconnections needed to provide working display systems for the Department's purpose.

MATERIALS:

Materials under this section include the WFDS Message Sign (2), Solar Power System (2), 4G/LTE Gateway Cellular Modem (2) and Antenna (2), Ethernet Switch (2), Battery Enclosure (2), Equipment Cabinet (2), grounding, surge protection, cabling and all other materials needed to complete the WFDS.

All Materials shall conform to RIDOT Standard Specifications for Road and Bridge Construction and MUTCD. Additional criteria are included in this section.

1. WFDS MESSAGE SIGN

The WFDS Message Sign is defined as a full matrix LED Display manufactured for 24/7 operational use on roadways, affixed to a static aluminum recreational destination message board.

Refer to RIDOT design standard 24.3.0 Construction and Temporary Sign Mountings.

- A. The LED Display shall be capable of displaying twelve characters, twelve inches (12") high.
- B. The LED Display shall have a maximum width dimension of nine (9) feet to be mounted to a static sign no wider than ten (10) feet.
- C. The LED Display shall be mounted to the static sign using the mounting brackets and/or instructions developed by the manufacturer designed for the purpose for attachment to the aluminum sign panels and wood support posts. Follow the manufacturers' installation recommendations regarding affixing the LED Display assembly to the static sign panel structure.

- D. The Contractor shall submit structural drawings and calculations to demonstrate to the RIDOT that the static sign shall support the LED Display.
- E. Each WFDS Sign site shall have remote communication capabilities to provide for complete sign operation. Each site shall be furnished with a 4G/LTE wireless modem for communications between the WFDS Sign and the DMS control software.
- F. Contractor shall furnish and install a WFDS sign controller that is minimally NTCIP V3 compliant and that allows the RIDOT to send and display ASCII characters at will via a Verizon cellular connection.
- G. The LED Display shall consist of Amber LEDs. Other Display options such as fiber-optic, flip disk, fiber optic/flip disc or LED/flip disc "combination", liquid crystal, or incandescent lamp are not acceptable alternatives.
- H. The WFDS sign controller and communications equipment shall be physically hardened to operate in an outdoor, unconditioned environment and within the temperature extremes to be found in New England.
- I. All metal components shall be protected against rust, corrosion and degradation due to the use in a roadway environment. Paint must be lead free, powder coat guaranteed to withstand 5 years of UV Florida exposures as set forth in AAMA 2604-98.
- J. Internal component hardware (nuts, bolts, screws, standoffs, rivets, fasteners, etc.) shall be manufactured from stainless steel, aluminum, nylon, or other durable corrosion-resistant materials suitable for the roadway sign application.
- K. The WFDS and sign controller components shall be 100% solid-state. There shall be no fans required in the LED assembly or equipment cabinet.
- L. The WFDS assembly shall be constructed to have a neat, professional appearance. The LED Display shall be installed as flush with the static sign face as possible. No sign will be accepted protruding greater than 5.5 inches from the sign face. The construction of the assembly shall protect the internal components from falling dirt, rain, snow, sleet and shall be undamaged by the external formation of ice on the Display, in accordance with NEMA Type 3R standards at a minimum, as described in NEMA Standards Publication 250-1997, Enclosures for Electrical Equipment (1000 Volts Maximum).
- M. The WFDS Sign assembly and construction shall provide safe and convenient access to the LED Display and all associated communications and power cabling at each sign for maintainability.
- N. Structural Integrity – The LED Display and support structure shall be designed and constructed to withstand the minimum loads per AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition.
- O. The Contractor shall submit design calculations prepared by a Professional Engineer registered in the State of Rhode Island and Shop Drawings for approval by the Engineer.

2. LED DISPLAY CONTROLLER

- A. The LED Display Controller shall have a Photocell that will be used to automatically dim the LED Display based on sunlight. The Photocell shall be placed on the sign post in an orientation that will detect the most sunlight. The Contractor shall submit any other mounting locations to the Engineer for approval.
- B. The LED Display Controller shall meet, or exceed, the following performance requirements:
- a. Shall include an Ethernet 10/100 port for remote communications
 - b. Shall include automatic control of WFDS Sign LED brightness based on ambient light conditions.
 - c. Shall include power loss and communications loss messages.
 - d. Shall include the following communications ports:
 - Local laptop or hand held controller input (EIA/TIA-232 or EIA/TIA-485)
 - LED Display communications (EIA/TIA-232 or EIA/TIA-485)
 - e. Shall include: watchdog supervision, a real-time clock, a temperature sensor and battery backup.
 - f. Operating Temperature: -34°C to +74°C
 - g. Operating Power: 10VDC to 16VDC

3. 4G/LTE GATEWAY CELLULAR MODEM AND ANTENNA

The Contractor shall furnish and install a wireless mobile device capable of communicating between the WFDS sign controller and the RIDOT's Transportation Management Center (TMC) by being compatible with the DOT's wireless service provider, Verizon Wireless.

The Cellular 4G/LTE Gateway Modem shall provide full duplex data communications between the WFDS Sign installation site and TMC hosted DMS control software over a Verizon Wireless service. Known compatible wireless modems are Sierra Wireless AirLink GX450 and the Raven RV50.

The contractor shall fully setup, configure and test the 4G/LTE gateway modem to work with the TMC hosted DMS control software and Network. All IP addressing and configuration shall be coordinated, with RIDOT TMC in advance of any equipment being installed in the field. The Contractor shall configure the 4G/LTE gateway modem using IP Sec VPN encryption technology to RIDOT IT department (DoIT) standards.

The 4G/LTE Gateway Cellular Modem shall meet, or exceed, the following technical requirements:

- A. The 4G/LTE Gateway Cellular Modem shall utilize 4G/LTE service with fallback to EV-DO Rev A service and shall be provided by Verizon Wireless

- B. The transmission speeds, signaling protocols and frequencies utilized shall match those of the cellular telephone utilities providing the 4G/LTE service.
- C. The 4G/LTE Gateway Cellular Modem shall be compatible with the data communications interface on the LED Display Controller installed at the WFDS Sign installation sites.
- D. The 4G/LTE Gateway Cellular Modem shall include the following data communications security features:
 - a. IPsec, GRE, and VPN encryption tunneling technology
 - b. IP and MAC address filtering
- E. The 4G/LTE Gateway Cellular Modem shall support various network routing configurations including DHCP, VLAN, NAT, port forwarding, static IP routing and dynamic DNS.
- F. The 4G/LTE Gateway Cellular Modem shall include an antenna input for reception of GPS positioning and timing information.
- G. The 4G/LTE Gateway Cellular Modem shall have a secure cloud-based device management application for managing gateway configuration, software and firmware updates, monitoring and alerts. The data will be used to measure the performance and system status of the Modem.
- H. The 4G/LTE Gateway Cellular Modem shall have a local web user interface as well as support AT Command Line Interface (Telnet).
- I. The 4G/LTE Gateway Cellular Modem shall be capable of automatically restarting on the event of power or signal loss. The Modem shall restart and continue normal operation autonomously.
- J. The 4G/LTE Gateway Cellular Modem shall meet, or exceed, the following power and environmental requirements:
 - a. The modem shall be powered using the power available in the WFDS Equipment Cabinet. The Contractor shall provide and install a high performance power transformer as required.
 - b. The modem shall have an operating temperature range of -13°F to 140°F and a humidity range of 5% to 95% non-condensing.
- K. Antenna and Antenna Cabling Requirements for the 4G/LTE Gateway Cellular Modem:
 - a. The Contractor shall provide and install an external directional or omni-directional 4G/LTE antenna and an external GPS antenna for the 4G/LTE Gateway Cellular Modem.
 - b. The antennas shall be mounted per manufacturers' instructions in a location suitable to ensure a minimum 95% communication success rate. Each antenna lead-in cable shall enter the WFDS Equipment Cabinet via bulkhead antenna fittings compatible

with the antenna cable and connectors required for the 4G/LTE Gateway Cellular Modem.

- c. The Contractor shall install the bulkhead fittings using a grommet, sealing material or other sealing system in order to maintain the environmental rating of the of the WFDS Equipment Cabinet.
- d. The Contractor shall provide and install antenna lead-in cable and connectors of the type recommended by the 4G/LTE Gateway Cellular Modem manufacturer and shall keep those connections as short as possible to minimize attenuation.

4. ETHERNET SWITCH

The Contractor shall furnish and install all Ethernet connections including from the cellular modem, the sign controller and the solar controller to the network switch.

- A. The Ethernet Switch shall accept four (4) or more 10/100TX Ethernet signals.
- B. The Ethernet Switch shall include Dual 10/100/1000TX RJ45 uplink ports.
- C. The Ethernet Switch shall be managed and include Layer 2 and Layer 3 networking features.
- D. The Ethernet Switch shall comply with the following IEEE Standards:
 - a. 802.3-10BaseT
 - b. 802.3u-100BaseTX
 - c. 802.3x-Flow Control
 - d. 802.3D-MAC Bridges
 - e. 802.1D-Spanning Tree Protocol
 - f. 802.1p-Class of Service
 - g. 802.1q-VLAN Tagging
 - h. 802.1w-Rapid Spanning Tree Protocol
 - i. 802.1x-Port Based Network Access Control
- E. The Ethernet Switch shall include the following features and functions:
 - a. Enhanced Spanning Tree Protocol
 - b. IGMP Snooping
 - c. SNMP (Simple Network Management Protocol)
 - d. NTP (Simple Network Time Protocol)
 - e. Port Rate Limiting
 - f. Broadcast Storm Filtering
 - g. Loss of Link Management
 - h. Port Mirroring
 - i. Individual Port Configuration and Status of speed, auto-negotiation and flow control
 - j. Port Statistics and Remote Monitoring
 - k. Event Logging and Alarms
 - l. HTML Web Browser interface

m. Command Line Interface (CLI)

F. The Ethernet Switch shall include the following switch properties:

a. Switch Method	Store and Forward
b. Switch Latency	5 μ s (100 Mbps)
c. Switching Bandwidth	1.6 Gbps
d. MAC Addresses	812
e. Priority Queues	2
f. Frame Buffer	160 Packet Buffers (1536 bytes each)
g. VLANs	1000
h. IGMP Multicast Groups	256

G. The Ethernet Switch shall include a Form C Critical Alarm Contact Relay.

H. Ethernet Switch Power, Environmental and Mounting Requirements:

- a. The Ethernet Switch shall be powered directly from 12 VDC or 24 VDC available within the Sign Controller Cabinet.
- b. Operating Temperature -40°C to 85°C
- c. Operating Humidity 95% or less (non-condensing)
- d. The Ethernet Switch shall meet the requirements of NEMA TS-2
- e. The Ethernet Switch shall be securely mounted in the Equipment Cabinet. DIN rail or panel mounted are acceptable options.

5. WFDS EQUIPMENT CABINET

- A. The WFDS Equipment Cabinet shall be sized to accommodate all required equipment and cabling and shall include 25% spare capacity.
- B. The method of mounting and installing the WBS Equipment Cabinet shall be submitted to the RIDOT Engineer through contract drawings for approval. Included in the drawings shall be a demonstration of the means to establish all electrical interconnections between the WBS Equipment Cabinet and other components.
- C. The WFDS Equipment Cabinet enclosure shall be aluminum alloy Type 5052 and shall be 0.125" inches thick with continuously welded external seams that have been ground smooth.
- D. The WFDS Sign communications and control equipment shall be panel mounted within the cabinet. Access to all equipment shall be via the front door.
- E. The WFDS Equipment Cabinet shall include a seamless foam door gasket to assure a dirt-tight and watertight seal and the door shall include a three point latching mechanism with nylon rollers on the top and bottom.
- F. The WFDS Equipment Cabinet door shall include an integral strut to secure the door in the open position to provide access for maintenance personnel to service the equipment.

- G. The hinges, latches and hasps of the cabinet shall be made of stainless steel.
- H. Each cabinet shall be lockable using a RIDOT #2 key. Contractor to provide four keys.
- I. All vents shall be provided with air filters and screens to prevent insects and rodents from entering the cabinet.
- J. All exposed high current electrical terminals shall be insulated with non-conducting material such as rubber boots or silicon/rubber caulking. In addition a Plexiglas or similar non-conductive safety shield shall be securely installed over all high current terminals, wiring posts and power cabling connections from the Solar Panel Array, Battery Bank and Solar Controller.
- K. Each cabinet shall include a document pocket affixed within the interior of the enclosure.
- L. The WFDS Equipment Cabinet shall be rated NEMA 3R at a minimum.
- M. Locking provisions shall be provided with all cabinets and enclosures to enable using RIDOT traffic cabinet #2 key.

6. SOLAR POWER SYSTEM

- A. The WFDS shall run completely on a Solar Power System consisting of solar panel arrays, batteries and charging system.
- B. The Solar Power System shall provide sufficient power to the LED Display to meet the minimum luminance intensity for light emitting diodes under Full Connected Power (not Reserve Power) as defined in Table 5-8 of NEMA Standards Publication TS 4-2005, "*Hardware Standards for Dynamic Message Signs (DMS) With NTCIP Requirements.*"
- C. The Solar Power System shall supply enough energy to supply the total daily power requirements of the WFDS LED Display and all electrical equipment within the WFDS Equipment Cabinet; and to recharge the battery bank; given the environmental conditions present year round at the deployment locations. **Solar power panel array and battery bank recharging calculations shall be supplied by the Contractor and approved by RIDOT in advance of approval of bid.**
- D. The solar panel array structure shall be ground-mounted wood pole conforming to RIDOT Standard Specifications.
- E. The method of mounting and installing the solar panel array and the wood pole shall be submitted to the RIDOT Engineer through contract drawings for approval.
- F. The bottom edge of the lower most solar power panels shall be a minimum of 8 feet above the surface of the ground.

- G. The solar power panel array shall be inclinable in two axes to optimize the charging capabilities of the solar panels. The solar panels shall rotate a full 360° and shall tilt up to 65° from horizontal (in a maximum of 20° increments).
- H. The solar power panels shall be attached to the solar power panel array support assembly using vandal and theft resistant attachment screws, clips and hardware. The solar power panel array support assembly shall be securely attached to the top of the Solar Array Structure using manufacturer recommended procedures and specified torque settings such that the array shall not rotate or become dislodged due to winds or other environmental factors. **The Contractor shall provide an Equipment Submittal clearly showing their proposed method of installation and attachment of the solar power panels to the Solar Array Structure to RIDOT for approval in advance of installation.**
- I. A Solar Power Controller shall be provided to monitor batteries and maintain the maximum power level without over-charging the batteries and shall include and conform to the following:
- a. The Solar Power Controller shall monitor the batteries and provide an automatic shut off the LED Display on the WFDS Sign if it is operating below manufacturer recommended operating voltage in order to prevent the batteries from being over-drained and to preserve their operational life.
 - b. The Solar Power Controller shall include an Ethernet connection for a fully web-enabled remote IP interface for system monitoring, data logging and adjustability. The unit shall be configurable to send an e-mail or text message if a system fault, alarm or programmable event is detected and shall be able to monitor and receive messages on an SNMP network.
 - c. The Solar Power Controller shall include all optional metering and data logging options required to measure and log the following parameters: minimum and maximum battery voltage, alarms and faults, maximum solar array voltage and power output, charge in amp-hours and watt-hours, minimum and maximum battery temperature; and absorption, float and equalize charging states.
 - d. The Solar Power Controller shall be installed in the battery box. The meter for the Solar Power Controller shall be detachable (via cable) from the Solar Power Controller and shall be installed in the WFDS Equipment Cabinet to provide detailed operating data, alarms and faults.
 - e. The Solar Power Controller shall meet, or exceed, the following electrical requirements:

Max Self-consumption	2.7 W
Maximum Battery Current	60 Amps
Battery Operating Voltage Range	8-72 VDC
Nominal Maximum Solar Input	800 Watts @ 12 Volts
Peak Efficiency	99 %
Transient Surge Protection	4500 W/port

- f. The Solar Power Controller shall include the following electronic protections:

Solar Power:	Overload, Short Circuit, High Voltage
Battery:	High Voltage
High Temperature	Lightning and Transient Surges
Reverse Current at Night	

- g. The Solar Power Controller shall meet, or exceed, the following battery charging requirements:

Charging Algorithm	4-Stage
Charging States	Bulk, Absorption, Float, Equalize
Temperature Compensation	-22° F to +160° F

- J. The battery bank shall supply enough energy to provide the WFDS Sign and all associated control and communications equipment with at least 2 days of autonomy, 24 hours per day with an average load of 50 percent of pixels ON, at 100% intensity without any charge from any device (solar panels disconnected) considering all environmental impacts (cold or heat) on the battery bank (The Calculations must be supplied by the Contractor)
- a. Batteries shall be easily accessible for replacement purposes.
 - b. Batteries shall be of a maintenance free Absorbed Glass Mat (AGM) technology, sealed Lead-Acid Battery type.
 - c. Batteries shall be deep-cycle type designed for solar power applications.
- K. The solar panels shall be installed separately from each WFDS sign on permanent, independent wood poles located 4 feet behind the sign and 4 feet further from the roadside than the sign. The solar panels shall be on adjustable mounts.
- L. All components of the Solar panel installation shall be designed and constructed to withstand the minimum loads per AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th Edition.
- M. PVC conduit with cable shall be installed underground to connect the Solar Panels and WFDS Sign to the WFDS Equipment cabinet. Above ground; the communications and power cables shall be routed through separate galvanized steel conduits, attached to a WFDS Sign support post and shall terminate at the LED Display.
- N. A Single Pole Single Throw (SPST) disconnect switch shall be installed in the battery enclosure electrically between the solar panel array and the solar controller to allow maintenance and testing of the system by disengaging the solar panel array from the battery charging system.
- O. A Single Pole Single Throw (SPST) disconnect switch shall be installed in the battery enclosure electrically between the solar panel batteries and the sign controller to allow for maintenance of the system by disengaging the batteries from the sign.

7. BATTERY ENCLOSURE

A Battery Enclosure designed for the purpose of housing batteries shall be provided to accommodate all batteries required for the battery bank and the solar power controller.

The method of mounting and installing the Battery Enclosure shall be submitted to the RIDOT Engineer through contract drawings for approval. Included in the drawings shall be a demonstration of the means to establish all electrical interconnections between the Battery Enclosure and other components.

The Battery Enclosure shall meet or exceed the following requirements:

- A. Constructed of 0.125" 5052-H32 aluminum
- B. White polyester powder coat finish
- C. NEMA 3R environmental rating
- D. Stainless steel continuous hinge
- E. Include an integral strut to prop the battery enclosure top cover open for access to the batteries
- F. Include screened louvers on both sides to provide filtered ventilation
- G. Include 2" extruded polystyrene insulation
- H. Include stainless steel padlock hasp
- I. All welds shall be sanded smooth
- J. Locking provisions shall be provided with all cabinets and enclosures to enable using RIDOT traffic cabinet #2 key.
- K. Include all mounting hardware.

8. GROUNDING, TRANSIENT VOLTAGE SURGE AND LIGHTNING PROTECTION REQUIREMENTS

The Contractor shall provide and install grounding and transient voltage surge protection for the LED Display, Solar Panel Array, Battery Enclosure, WFDS Equipment Cabinet, and for all associated communications and control equipment.

Grounding, surge and lightning protection equipment shall be as described in these Specifications and shall satisfy the following requirements:

- A. Provide and install a grounding system and transient voltage surge suppression system for all equipment and devices installed in the field in order to provide protection from lightning, transient voltage surges and induced currents.

- B. Maintain a resistance to earth ground not to exceed 25 ohms.
- C. Provide and install equipment grounding systems using ground rods to achieve the required resistance. Ground rods shall comply with the requirements of UL 467, Grounding and Bonding Equipment. Use ground rods that are solid copper or copper clad. All ground wire connections to ground rods shall be made using exothermic welds.
- D. Install separate ground rods into the earth a maximum of 3 feet from each of the following: WFDS Sign, Solar Panel Array Support Post, Battery Enclosure, WFDS Equipment Cabinet and Antenna. Utilize a single point main ground rod (ground window) as the connection point for other site grounding system elements.
- E. Utilize soil preparation and grounding augmentation fill such as coke oven coke breeze if required to achieve the required resistance to ground.
- F. Measure ground resistance using test equipment specifically intended for the purpose of measuring earth/ground resistance, soil resistance and current flow. Utilize the Fall-of-Potential method to verify the ground as defined in IEEE Standard 142-1991. Record all test results for each WFDS Sign installation site and provide copies to RIDOT.
- G. Provide and install transient voltage surge suppression devices for all incoming communications, all incoming power circuits and all antenna lead-in cabling within the WFDS Equipment Cabinet.
- H. Adhere to the applicable requirements of UL497A, UL497B, UL 1449 and the NEC regarding grounding and transient surge protection.

Requirements for 12/24 VDC Power Line Surge Suppressors:

- A. All components powered by 12/24VDC shall be protected through the use of surge suppressors.
- B. The 12/24 VDC power line surge suppressors shall be suitable for their intended use and installation location.
- C. The 12/24 VDC power line surge suppressors shall provide three stage surge suppression.
- D. The 12/24 VDC power line surge suppressors shall be mounted on DIN rail.
- E. Technical Specifications:

a. Connectors	(2) Screw Terminal Blocks
b. Stage 1 Clamping Voltage	± 90 V
c. Stage 2 Current Rating	1.5 A
d. Stage 3	12 V or 24 V TVS Diode

CONSTRUCTION METHODS:

9. WFDS FIELD SITE VERIFICATION

- A. The Contractor shall verify that each item of equipment installed at the WFDS installation site is the appropriate model and is installed and connected properly as documented on the applicable submitted shop drawings. All cables shall be labeled per TIA-606
- B. The Contractor shall verify that all equipment and structures have been properly grounded as per RIDOT Specifications.
- C. The Contractor shall inspect all equipment to verify that all mechanical connections are complete and secured properly, all hardware is installed in the proper position and all cables terminated and labeled as per the applicable submitted shop drawings. The Contractor shall perform a software and firmware audit on each WFDS and communications component to verify that the most current approved versions of software and firmware have been installed and that this audit data is documented.
- D. The Contractor shall make all adjustments and alignments necessary to the WFDS LED Display, controller, solar panels, power system and all other installed equipment; per the manufacturers' recommended practices and procedures.
- E. The Contractor shall test each WFDS device and communications component at the WFDS installed location to verify that it is powered locally, fully functional, and that all specified and published features and functions of the equipment are operational.

10. SYSTEM VALIDATION TESTING:

- A. System Validation Testing shall include a complete test of all WFDS functionality.
- B. The Contractor shall demonstrate that WFDS can be changed from the TMC.
- C. Validation testing shall demonstrate the WFDS shall display an intended message from software operating from the TMC, over Verizon Wireless services, using the 4G/LTE Gateway Cellular Modem and sign controller on the LED Display.
- D. Validation testing shall **demonstrate** that the solar power system with battery backup is capable of running the entire WFDS system for **12 hours of autonomy running the LED Display with 50% pixels on at 100% brightness**. This shall be accomplished by disconnecting the solar panels from the fully charged batteries that are integrated into the WFDS.
- E. The Contractor shall be given a time period of no more than one week in which to pass all validation testing from the time testing has started.

- F. The Contractor shall verify validation testing before a witness provided by RIDOT of successful remote operation of the signs as described herein before the system will be accepted.

11. TEST PLANS AND WARRANTIES

All System components shall be inspected, tested, and validated as an assembled complete system by the Contractor at a RIDOT facility with a RIDOT representative present. Field installation and testing shall be done by the Contractor and witnessed by RIDOT.

The Contractor shall be responsible for construction, installation, acceptance testing and warranty of all field equipment, system components and apparatuses. The system components shall be thoroughly tested for operational performance (as specified by the device manufacturer).

The Contractor shall warranty the system for a period of **three years for the warranty of parts**.

12. EQUIPMENT EXTENDED WARRANTY SUBMITTALS

All vendor supplied equipment shall include an extended 36 month warranty from the date of a successful completion of the System Validation Test. The extended warranty shall be in the name of RIDOT and allow for future Contractors to return and replace components that may fail during the warranty period, at no additional cost. The Contractor shall transmit to RIDOT updated warranty service dates, from the manufacturer, upon a successful completion of the Final Acceptance Test.

METHOD OF MEASUREMENT:

The WFDS shall be measured and paid for by LUMP SUM: furnished and installed, complete and accepted in place and shall include all labor, equipment and materials; all components of the LED Displays, wireless modems, and software; the solar panels, Readers, antenna, solar array support structures; batteries, equipment cabinet, site work and restoration (including any necessary excavation, backfill, and compaction), and all incidentals necessary for a completely operable WFDS installation, including traffic management and control devices.

Each installation site shall be required to pass a Validation Test before being placed into service. These tests shall be conducted with representatives of the Contractor and RIDOT in attendance, and shall be conducted in accordance with the submitted and RIDOT approved Test Plans and Test Procedures.

BASIS OF PAYMENT:

The method of payment shall be **LUMP SUM**. The price so stated shall include full compensations for all materials including the WFDS Message Signs (2), Solar Power Systems (2), 4G/LTE Gateway Cellular Modems (2), Antennas (2), Ethernet Switches (2), Battery Enclosures (2), Equipment Cabinets (2), grounding, surge protection, cabling and all other materials, installation costs, validation testing costs, warranties, and work incidental to complete the WFDS in place and accepted by the Engineer.

Attachment A - SIGN Design

1. The static sign shall be no larger than 10 feet wide by 5 feet in height.
2. The WaterFire Logo shall be 24" in height.
3. The Text "WATERFIRE" shall be all caps and 12" in height centered to the WaterFire logo.
4. The logo shall be electronically delivered to the Bidder after notice of award.
5. Background color shall be standard brown.
6. Lettering and logo shall be white.

