INVITATION FOR BIDS

City of Newport News
IFB #2014-4953-2049
February 19, 2014

Purchasing Department, Office of the Purchasing Director
4th Floor, City Hall, 2400 Washington Avenue
Newport News, VA 23607
Phone: (757) 926-8031/ Fax: (757) 926-8038
http://www.nngov.com/purchasing

Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

Sealed bids subject to the conditions and instructions contained herein, will be received at the above office of the Purchasing Director, 4th Floor, City Hall, 2400 Washington Avenue, Newport News, Virginia 23607, until the time and date shown below (local prevailing time), for furnishing the items or services described in the bid.

SCOPE OF WORK: Replace the existing span wire traffic signal with a new mast arm traffic signal at the intersection of Warwick Boulevard and 75th Street. Work will include all labor, services and materials for construction and installation of foundations, mast arms, conduits, pedestrian accommodations, and associated equipment. Furthermore it includes the removal of the existing span wire traffic signal and associated equipment as well as the installation of new streetlighting. All work shall be completed within 270 calendar days from the Notice to Proceed date.

Bid Due: 2:30 p.m., March 11, 2014

Contract Officer: Shari D. Colvin, CPPO, CPPB, VCO, Deputy Director, scolvin@nngov.com and copy Feleasha Sherfy, Assistant Buyer, fsherfy@nngov.com

**AN ORIGINAL SECTION "A" AND ONE DUPLICATE COPY IS REQUESTED**

In compliance with this invitation for bids, and subject to all the conditions thereof, the undersigned offers, if this bid is accepted within (60) calendar days from the date of the opening, to furnish any or all of the items and/or services upon which prices are quoted, at the price set opposite each item, to be delivered at the time and place specified herein. The undersigned certifies he/she has read, understands, and agrees to all terms, conditions, and requirements of this bid, and is authorized to contract on behalf of firm named below.

Company Name: ________________________________
Address: __________________________________________
City/State/Zip: ____________________________________
Telephone: _____________________________ FAX No.: ______________________
E-mail: _______________________________________
Print Name: ___________________________ Title: ___________________________
Signature: ______________________________ Date: _________________________

(This form must be signed. All signatures must be original and not photocopies.)
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Section A
1. All bids shall be submitted on and in accordance with this form. If more space is required to furnish a description of the goods and/or services bid, or delivery terms, the bidder may attach a letter hereto that will be made a part of the bid. In case of conflict, the bid may be deemed non-responsive. The City’s published specifications shall supersede any additional writings submitted with the bid. Such writings should be clearly marked and noted on the exception page.

2. All bids shall be submitted sealed, plainly marked showing the bid number, date and time. The entire solicitation document is to be returned when submitting a bid, unless otherwise directed by the bid document. Failure to return all pages may result in a determination that the submittal is non-responsive.

3. Bids and amendments thereto, if received by the Purchasing Department after the date and time specified for bid opening, will not be considered. It will be the responsibility of the bidder to see that their bid is received by the Purchasing Department as specified. There will be no exceptions. Date of postmark will not be considered. Telephone, facsimile, electronic and verbal bids will not be accepted. Prices or changes shown on the outside of an envelope will not be considered in determination of low bid.

4. If City Hall is closed for business at the time bid opening is scheduled, for whatever reasons, sealed bids will be accepted and opened on the next business day of the City, at the originally scheduled hour.

5. Each bid is received with the understanding that the acceptance in writing by the City of the bidder to furnish any or all of the goods and/or services described therein, shall constitute a contract between the bidder and the City, which shall bind the bidder on his part to furnish and deliver the goods and/or services quoted at the prices stated and in accordance with the conditions of the accepted bid; and the City on its part to order from such bidder, except for causes beyond reasonable control; and pay for, at the agreed prices, all goods and/or services specified and delivered.

6. Bidders have the right to request withdrawal of their bids from consideration due to error by giving notice not later than two business days after bids are publicly opened. Work papers showing evidence of error(s) may be required. Upon request, administrative withdrawal procedures will be provided that shall be used for that purpose.

7. If issued, addenda to this solicitation will be posted on the Purchasing Department’s website (www.nngov.com/purchasing). It is the bidder’s responsibility to check the website or contact the Purchasing Department prior to the submittal deadline to ensure that the bidder has a complete, up-to-date package.

8. The solicitation document maintained by the Purchasing Department, in the bid file folder, shall be considered the official copy. In the case of any inconsistency between bid
documents submitted to the City, but not clearly listed on the exception page of the document as an exception by the bidder, the language of the official copy shall prevail. Furthermore, any exception or changes to the specifications made by the bidder may be cause to disqualify your bid.

9. Award will be made to the lowest responsive and responsible bidder. The quality of the goods and/or services to be supplied, their conformity with the specifications, their suitability to the requirements, the delivery terms, qualifications and references will be taken into consideration in making an award. Length of time for delivery as well as price may be considered in awarding the bid.

Unless canceled or rejected, a responsive bid from the lowest responsible bidder shall be accepted as submitted; except that if the bid from the lowest responsible bidder exceeds available funds, the purchasing director may negotiate with the apparent low bidder to obtain a contract price within available funds.

Upon making an award, or giving notice of intent to award, the City will place appropriate notice on the public bulletin board located outside of the Purchasing Department at City Hall. Notice of award may also appear on the Purchasing Website: www.nngov.com/purchasing or www.demandstar.com.

10. The City reserves the right to reject any and all bids, and to waive any informality if it is determined to be in the best interest of the City.

11. Prices shall be stated in units of quantity specified. No additional charges shall be passed on to the City, including any applicable taxes, delivery, or surcharges. Prices quoted shall be the final cost to the City.

12. All prices and notations should be in ink or typewritten. Mistakes may be crossed out and corrections made in ink and must be initialed and dated in ink by the person signing the bid.

13. In case of error in the extension of prices, the unit price shall govern.

14. The time of proposed delivery must be stated in definite terms. If time of delivery for different goods and/or services varies, the bidder shall so state.

15. Samples, when requested, must be furnished free of expense, and upon request, if not destroyed, will be returned at the bidder's risk and expense.

16. Unless qualified by the provision "NO SUBSTITUTE", the use of the name of the manufacturer, brand make or catalog designation in specifying an item does not restrict bidders to the manufacturer, brand, make or catalog designation identification. This is used simply to indicate the character, quality and/or performance equivalence of the goods and/or services desired. The goods and/or services on which bids are submitted must be of such character, quality and/or performance equivalence that it will serve as
that specified. In submitting bids on goods and/or services other than as specified, bidder shall furnish complete data and identification with respect to the alternate goods and/or services they propose to furnish.

Consideration will be given to bids submitted on alternate goods and/or services to the extent that such action is deemed to serve the best interests of the City. If the bidder does not indicate that the goods and/or services he proposes to furnish is other than specified, it will be construed to mean that the bidder proposes to furnish the exact goods and/or services described.

17. The apparent silence of these specifications and any supplemental specifications as to any detail or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and correct type, size and design are to be used. All interpretations of these specifications shall be made on the basis of this statement.

18. All bids must be signed by a responsible officer or employee having the authority to sign for the firm. The bidder agrees that its contract performance shall be in strict conformance with the contract documents.

19. By signing this bid, the bidder assigns to the City any and all rights that it may have under the antitrust laws of the United States and the Commonwealth of Virginia in any way arising from or pertaining to this bid. This provision is remedial in nature and is to be liberally construed by any court in favor of the City.

20. The bidder certifies by signing this Invitation for Bid that this bid is made without prior understanding, agreement, or accord with any other person or firm submitting a bid for the same goods and/or services and that this bid is in all respects bona fide, fair, and not the result of any act of fraud or collusion with another person or firm engaged in the same line of business or commerce. Any false statement hereunder may constitute a felony and can result in a fine and imprisonment, as well as civil damages.

21. **Hold Harmless and Indemnification:** The contractor shall defend, indemnify and hold the City, and City’s employees, agents, and volunteers, harmless, from and against any and all damage claim, liability, cost, or expense (including, without limitation, reasonable attorney’s fees and court costs) of every kind and nature (including, without limitation, those arising from any injury or damage to any person, property or business) incurred by or claimed against the contractor, its employees, agents, and volunteers, or incurred by or claimed against the City, City’s employees, agents, and volunteers, arising out of, or in connection with, the performance of all services hereunder by the contractor. This indemnification and hold harmless includes, but is not limited to, any financial or other loss including, but not limited to, any adverse regulatory, agency or administrative sanctions or civil penalties, incurred by the City due to the negligent, fraudulent or criminal acts of the contractor or any of the contractor’s officers, shareholders, employees, agents, contractors, subcontractors, or any other person or entity acting on behalf of the contractor. Unless otherwise provided by law, the contractor
indemnification obligations hereunder shall not be limited in any way by the amount or type of damages, compensation, or benefits payable by or for the contractor under worker’s compensation acts, disability benefit acts, other employee benefit acts, or benefits payable under any insurance policy. This paragraph shall survive the termination of the contract including any renewal or extension thereof.

22. The contractor agrees to defend and save the City, its agents, officials, volunteers and employees, harmless from liability of any nature or kind, for use of any copyright, composition, secret process, patented or unpatented invention, goods and/or services or appliances furnished or used in the performance of the contract, or which the contractor is not the patentee, assignee, or licensee, to the same extent as provided in the above paragraph.

23. The contractor shall keep fully informed of all federal, state and local laws, ordinances and regulations that in any manner affect the conduct of the work. The contractor shall at all times observe and comply with all such laws, ordinances and regulations.

24. The contractor certifies that he/she does not and shall not during the performance of the contract for goods and services in the Commonwealth, knowingly employ unauthorized aliens as defined in the federal Immigration Reform and Control Act of 1986, as amended.

25. All bidders or offerors organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50, as amended, shall include the identification number issued to it by the State Corporation Commission. Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50, as amended, or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.

Number or Statement: ________________________________________________

Any business entity that enters into a contract with a public body pursuant to this chapter shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, as amended, to be revoked or cancelled at any time during the term of the contract. The City may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

26. **Contractor's License:** If any of the services promulgated under this solicitation consist of construction work, it is required under Title 54.1, Chapter 11, Code of Virginia for a contractor who performs or manages construction, removal, repair, or improvements when the total value referred to in a single contract or project is:

One hundred twenty thousand dollars ($120,000) or more, or the total value of all such construction, removal, repair or improvements undertaken by such person within any
twelve-month period is seven hundred fifty thousand dollars ($750,000) or more shall show evidence of being licensed as a **Class A Contractor**.

Ten thousand dollars ($10,000.00) or more, but less than one hundred twenty thousand dollars ($120,000) or the total value of all such construction, removal, repair or improvements undertaken by such person within any twelve-month period is one hundred and fifty thousand dollars ($150,000) or more, but less than seven hundred fifty thousand dollars ($750,000) shall show evidence of being licensed as a **Class B Contractor**.

Over one thousand dollars ($1,000) but less than ten thousand dollars ($10,000) or the total value of all such construction, removal, repair, or improvements undertaken by such person within any twelve-month period is no more than one hundred and fifty thousand dollars ($150,000) shall show evidence of being licensed as a **Class C Contractor**.

The City shall require master certification as a condition of licensure or certification of electrical, plumbing and heating, ventilation and air conditioning contractors.

A valid business license from the City may be required. The bidder shall complete whichever of the following notations as appropriate:

"Licensed Class A Virginia Contractor No. __________."

"Licensed Class B Virginia Contractor No. __________."

"Licensed Class C Virginia Contractor No. __________."

27. **Availability of Funds:** A contract shall be deemed in force only to the extent of appropriations available to each department for the purchase of such goods and/or services or services. The City’s extended obligations on those contracts that envision extended funding through successive fiscal periods shall be contingent upon actual appropriations for the following years.

28. **Payment Terms:**

   a) Payment terms shall be "2%-20, Net 30 days" unless otherwise stated by the bidder on this submittal form. Alternate terms may be offered by bidder for prompt payment of bills.

   b) Payment terms shall be considered in determining the low bidder.

   c) Discount period shall be computed from the date of proper receipt of the contractor’s correct invoice, or from the date of acceptable receipt of the goods and/or services, whichever is latest.
d) The payment terms stated herein must appear on the contractor’s invoice. Failure to comply with this requirement shall result in the invoice being returned to the contractor for correction.

e) Late payment charges shall not exceed the allowable rate specified by the Commonwealth of Virginia Prompt Payment Act. (1% per month)

29. In event of default by the contractor, the City reserves the right to procure the goods and/or services and/or services from other sources, and hold the contractor liable for any excess cost occasioned thereby.

30. Appeals Procedure: Upon your request, administrative appeals information will be provided that shall be used for hearing protests of a decision to award or an award, appeals from refusal to allow withdrawal of bids, appeals from disqualification, appeals for debarment or suspension, or determinations of non-responsibility and appeals from decision or disputes arising during the performance of a contract. To be timely, all appeals shall be made within the time period set forth in Chapter 2, divisions 4 and 5 of the City Code.

31. It is the policy of the City of Newport News to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women, minorities and service disabled veterans and to encourage their participation in the City's procurement activities. Toward that end, the City of Newport News encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women, minorities and service disabled veterans through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidder is requested to complete the SMB, WBE, MBE and SDV Business Requirements form within this document.

32. The City has a directory of Newport News Small, Women-owned, Minority and Service Disabled Veteran-owned (SWAM) businesses. The directory is available at www.nngov.com/purchasing.

33. This public body does not discriminate against faith based organizations.

34. Non-Discrimination: During the performance of this contract, the contractor agrees as follows:

(a) It will not discriminate against any employees or applicants for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by federal or state law relating to discrimination in employment, except where one or more of these are a bona fide occupational qualification reasonably necessary to the normal operations of the contractor. The contractor agrees to post in conspicuous places available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.
(b) The contractor will be and state that he is an equal opportunity employer in all solicitations or advertisements for employees.

(c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

The contractor will include the provisions of the foregoing paragraphs (a), (b) and (c), in every subcontract or purchase order of over ten thousand dollars so that the provisions will be binding upon each subcontractor or vendor.

35. During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor’s employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor’s workplace and specifying the actions that will be taken against employees for violations of prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this subsection, “A drug-free workplace” means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this subsection, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

36. Assignment of Contract: A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.

37. **Governing Law and Venue:** This solicitation and any resulting contract will be subject to the laws of the Commonwealth of Virginia and the Newport News City Code. Any litigation with respect thereto shall be brought in the courts of the City of Newport News, Virginia, or the United States District Court for the Eastern District of Virginia, Newport News Division.

38. **Severability:** If any provision of this contract or the application thereof to any person or circumstances shall to any extent be invalid or unenforceable, the remainder of this contract, or the application of such provision to persons or circumstances other than those which it is invalid or unenforceable, shall not be affected hereby, and each provision of this contract shall be valid and enforced to the full extent permitted by law.
39. **Termination by the City or the Contractor, or both, for convenience (Not applicable to contracts subject to the Department of Engineering Standard dated August 1, 1983, as amended, or the Department of Public Utilities “General Conditions”):**

The parties may terminate the contract at any time by mutual written agreement.

In addition, if the contract is an extended term contract, after completion of the first contract period, either party may terminate the contract without penalty or financial obligation, except that the parties remain liable for performance of all terms, conditions, and obligations through the date of termination. Written notice of termination shall be given to the other party a minimum of sixty (60) days prior to its effective date.

40. **Termination for Cause (Not applicable to contracts subject to the Department of Engineering Standard dated August 1, 1983, as amended, or the Department of Public Utilities “General Conditions”):**

In the event that the contractor shall for any reason or through any cause be in default of the terms, conditions, or obligations of the contract documents, the City may give the contractor written notice of such default and terminate the contract. All terms, conditions, and obligations of the contract documents are considered material.

The City may, in its discretion, provide the contractor an opportunity to cure the default, if curable, prior to termination. Unless a different duration is provided in the notice of default, or agreed upon by the parties in writing, the contractor shall have fourteen (14) calendar days to cure the default from the date such notice is mailed to the contractor unless notification is by facsimile or personal delivery, in which case the opportunity to cure shall commence upon delivery of the notice. Upon failure of the contractor to cure the default, the City may immediately terminate the contract effective as of the mailing or delivery of the default notice. If the City terminates the contract, the contractor shall remain liable for performance of all terms, conditions, and obligations through the date of termination. Termination by the City shall not constitute a waiver by the City of any other rights or remedies available to the City by law or contract.

41. **Bid Bond:** A bidder’s bond or certified check in the amount of five percent (5%) of the amount bid shall accompany any bid in access of $100,000.00 for the bid to be acceptable.

42. **Performance and Labor and Material Payment Bond:** The Contractor shall have ten (10) days from the date of the City’s request to provide a performance bond and a labor and material payment bond, (Use only the forms provided by the City, unless otherwise approved by the City Attorney) in the amount of the contract price, as security for faithful performance of the work in strict conformity with the Contract Documents and for payment of all persons who perform labor and furnish materials in prosecution of the work. The surety on such bonds shall be duly authorized to do business in the Commonwealth of Virginia and be satisfactory to the City.
43. Direct contact with others besides the Purchasing Department, including other City departments or the City’s consultants, on the subject of this bid is expressly forbidden except with the foreknowledge and permission of the contracting officer. Violation may result in a determination that your firm is ineligible for award.

44. Questions or comments related to this solicitation shall be directed to the contract officer, and/or assistant, whose name and contact information appears on the front of this document. All questions must be submitted in writing (facsimile or email); telephonic inquiries will not be considered.

45. Successful bidder shall furnish all required bonds, certificates of insurance and required endorsements on City approved forms included in this bid package. Any other forms are not acceptable and shall not be approved by the City Attorney’s office. Time is critical on this work and non-compliance will delay the work and may be cause to make award to the next qualified bidder.


This contract may consist of contractual terms, plans, and technical specifications contained in the above three publications. Only Sections 1000 through 1012 of the August 1983 Engineering Department Standard Specifications apply when the specific type of work to be performed under the contract (various aspects of horizontal improvements, such as roadways, drainage and utilities) is covered by the HRPDC Regional Construction Standards (5th edition), in which case Divisions 2 through 8 of the HRPDC Regional Construction Standards will apply with the exception of water distribution standards. The Newport News Waterworks Distribution Standards for Materials and Construction (latest edition) applies in lieu of the HRPDC Regional Construction Standards Division 8 for such improvements. If the type of work to be performed under the contract is not covered by the HRPDC Regional Construction Standards, then the 1983 Engineering Department Standard Specifications apply in their entirety, along with the Waterworks Distribution Standards, unless otherwise indicated. In addition, if additional plans, special conditions, specifications, or addenda are included as part of the invitation for bid package apart from the above three publications, those additional plans, special conditions, specifications, and addenda will take precedence over any conflicting HRPDC Regional Construction Standards or conflicting Standards contained in the August 1983 Engineering Department Standard Specifications, or Waterworks Distribution Standards.

- The August 1, 1983 Engineering Department Standard Specifications are available for $15.95, including tax, per copy (and nonrefundable) from the Department of Engineering, City Hall building, 7th Floor, Newport News, VA 23607, telephone (757) 933-2311. In this publication, all references to the Director of Engineering with respect to sections involving the Invitation for Bids...
and prior to an actual contract award being awarded shall be defined and interpreted as the City’s Purchasing Director, or designee.

- The HRPDC Regional Construction Standards (5th edition) is available online at the HRPDC website or a copy can be purchased from the HRPDC office.
- Newport News Waterworks Distribution Standards for Materials and Construction (latest edition) is available free online at http://www.nngov.com/waterworks/downloads/diststandards. Additionally, a hard copy is available for $10.00 each, including tax (and nonrefundable) at Lee Hall Maintenance & Operations Center, 425 Industrial Park Drive, Newport News, Va., 23608.

The bidder certifies that prior to submitting a bid they will have a copy of each applicable Standard Specification and shall keep a copy on the job site at all times if they are the lowest responsive and responsible bidder.

Signed: ___________________________ Date: __________________________

Name of Company: _____________________________________________________

47. **Liquidated Damages:** TIME IS OF THE ESSENCE ON THIS CONTRACT. Failure of the Contractor to complete the work within the time allowed will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For each consecutive calendar day in excess of the time specified for completion of the work, the Contractor shall pay to the City, or have withheld from monies due it, the sum of $350.00 per day.

Execution of the contract under these specifications shall constitute agreement by the City and Contractor that this amount per day is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum shall be deducted from payments due the Contractor if such delay occurs.

Permitting the Contractor to continue and finish the work or any part thereof after the contract time or adjusted contract time, as pertinent, has expired shall in no way operate as a waiver on the part of the City or any of its rights under the contract.

Payment of liquidated damages shall not release the Contractor from obligations in respect to the fulfillment of the entire contract, nor shall the payment of such liquidated damages constitute a waiver of the City’s right to collect any additional damages which may be sustained by failure of the Contractor to carry out the terms of the contract, it being the intent of the parties that said liquidated damages be full and complete payment only for failure of the Contractor to complete the work on time.

48. **Permits,** Contractor shall be responsible for furnishing all necessary permits as required by the City Newport News prior to start of construction. The Contractor is required to obtain and pay for all necessary permits along with required bonds and insurance. A minimum $5,000.00 bond for Right-of-Way permits and a minimum $2,000.00 for land
disturbing permits (based on area disturbed). These bonds are in addition to any bid bond, performance or payment bond required as part of the bid. Contractor shall also be responsible to obtain and pay for any required permits from State or Federal agencies. The project signs, right-of-way permit, land disturbing permit, etc. and associated bonds shall also be included in this bid price. Proof of approved final inspections relating to these permits shall be required before final payment is made.

49. **Insurance:** The contractor shall maintain adequate liability insurance, which shall protect and save harmless the City of Newport News, Virginia, and its officials from all suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and from all claims arising under the workmen's compensation laws. The contractor shall furnish proof of said insurance prior to commencement of services. Separate forms, which name the City as additional insured and as alternate employer, must be included with the Certificate of Insurance. **Please make sure prior to submitting a bid that all insurance endorsements forms have been reviewed by your insurance carrier.**

The Commonwealth of Virginia requires construction contractors and subcontractors to obtain and maintain worker's compensation insurance while performing work on behalf for the City. Evidence of coverage needs to be provided prior to commencement of work.

Sample forms CG 20-10 (naming the City as additional insured for liability claims) and WC 00-03-01 (naming the City as an alternate employer for Worker's Compensation claims); and the Commonwealth's form for Worker's Compensation Certificate of Coverage are attached (See Section B).

Contractor shall have ten (10) days from the date of the city’s request, to provide insurance documentation. Failure to provide the Certificate and forms within this period may be cause for the City to award a contract to the next responsive bidder, and hold the original contractor liable for excess costs.

50. The Conditions and Instructions in this solicitation are intended to apply to the resulting contract and shall supersede any conflicting terms offered. Any additional conditions a bidder intends to be considered must be submitted with the bid as an exception. Such exceptions may result in a finding that the submittal is ‘non-responsive’ to the bid, negating possibility of an award to that bidder. Contractual documents submitted by the successful firm after an award will not be accepted.

51. Failure of the contractor to perform the contract by reason of this non-acceptance of additional conditions shall result in termination of the contract by the City, and may result in debarment of the contractor for a period of up to three years. Termination and/or debarment of the contractor shall not constitute a waiver by the City of any other rights or remedies available to the City by law or contract.
52. **Records and Inspection:** The contractor shall maintain full and accurate records with respect to all matters covered under this contract, including, without limitation, accounting records, written policies and procedures, time records, telephone records, and any other supporting evidence used to memorialize, reflect, and substantiate charges or fees related to this contract. The contractor’s records shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by the City and its employees, agents or authorized representatives after giving at least three (3) days notice to contractor by the City. The City shall have access to such records from the effective date of this contract, for the duration of the contract, and for five (5) years after the date of final payment by the City to the contractor pursuant to this contract or any renewal or extension of this contract. The City’s employees, agents or authorized representatives shall have access to the contractor’s facilities, shall have access to all necessary records, and shall be provided adequate and appropriate work space, in order to conduct audits.

53. **Rights and Remedies Not Waived:** In no event shall the making by the City of any payment to the contractor, or the waiver by the City of any provision under this contract including any obligation of the contractor, constitute or be construed as a waiver by the City of any other provision, obligation, breach of covenant, or any default which may exist under this contract on the part of the contractor, and the making of any such payment by the City while any such breach or default exists shall not impair or prejudice any rights or remedies available to the City.

54. **Independent Contractor:** The contractor and any employees, agents, or other persons or entities acting on behalf of the contractor shall act in an independent capacity and not as officers, employees, or agents of the City.

55. **Conflict:** In the event of a conflict between the contract documents, including these Conditions and Instructions, and the terms of a purchase order or related document issued by the Department of Purchasing, the contract documents shall control.

In the event of a conflict between the Department of Engineering Standard Specifications dated August 1, 1983, as amended, HRPDC Regional Construction Standards (5th Edition), and the contract documents (including the General and Special Conditions), the contract documents shall control unless otherwise provided. In addition, Special Conditions take precedence over General Conditions.

In the event of a conflict between the Department of Public Utilities “General Conditions” and the contract documents (including the General and Special Conditions), the contract documents shall control unless otherwise provided. In addition, Special Conditions take precedence over General Conditions.

56. **Entire Agreement:** This contract and any additional or supplementary documents incorporated herein by reference contain all the terms and conditions agreed upon by the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of this contract or any part thereof shall have any validity or bind any of the parties.
hereto. This contract shall not be modified, altered, changed or amended unless in writing and signed by the parties hereto.

57. **Scheduling and Delays:** The parties to any contract resultant of this solicitation acknowledge that all or part of the work to be performed hereunder may be delayed and extended at the option of the City. Such delays may be caused by delays, denials and modifications of the various state or federal permits, or for other reasons. The City shall not be required to pay any of the Contractor’s direct or indirect costs, or claims for compensation, extended overhead, or other damage or consequential damages arising out of or related to any delays or interruptions required or ordered by the City. If the City delays the project for any reason for a continuous period of ninety (90) days or more, the City and Contractor will negotiate a mutually agreeable adjustment to the Contractor’s award amount. **Notwithstanding the above, in construction contracts, to the extent that an unreasonable delay is caused by the acts or omissions of the City due to causes within the City’s control, the above waiver or release shall not apply.**
ANTI-COLLUSION CERTIFICATION

The bidder certifies that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same product and that this bid is in all respects bona fide, fair and not the result of any act of fraud or collusion with another person or firm engaged in the same line of business or commerce. The bidder understands collusive bidding is a violation of Federal law and that any false statement hereunder constitutes a felony and can result in fines, imprisonment, as well as civil damages. The bidder also understands that failure to sign this statement will make the bid non-responsive and unqualified for award.

Signed: ________________________________ Date: __________________________

Name of Company: _______________________________________________________

SMALL, WOMEN-OWNED, MINORITY, AND SERVICE DISABLED VETERAN-OWNED BUSINESS REQUIREMENTS
Rev: 10/23/2013

It is an important business objective of the City to promote the economic enhancement of small businesses (SBE), women-owned businesses (WBE), minority businesses (MBE), and service disabled veteran-owned small business (SDV), collectively known as SWAM. The success of the City to track the amount of business received by SWAM firms (whether as a prime contractor or a subcontractor) is dependent upon the business community partnering with us in this important endeavor.

BIDDER/OFFEROR'S RESPONSIBILITIES:

A. Affirmative Steps:  Bidders/Offerors shall take affirmative steps prior to submission of bids/proposals to encourage participation in projects by SWAM firms. Such efforts may include:

(1) Establish and maintain a current solicitation list of small, women-owned, minority, and service disabled veteran recruitment sources, and assure SWAM firms are solicited once they are identified.

(2) When feasible, segmenting total work requirements to permit maximum SWAM participation, and establish delivery schedules to encourage SWAM participation.

(3) Assuring that SWAM firms are solicited whenever they are potential sources of goods or services. This step may include:

a. Sending letters or making other personal contact with SWAM firms, private agencies and state associations. SWAM firms should be contacted when other potential subcontractors are contacted, within reasonable time prior to bid submission or closing date for receipt of initial offers. Those letters or other contacts should communicate the following:

   (i) Specific description of the work to be contracted;

   (ii) How and where to obtain a copy of plans and specifications or other detailed information needed to prepare a detailed price quotation;

   (iii) Date the information is due to the Bidder/Offeror;

   (iv) Name, address, and phone number of the person in the Bidder/Offeror's firm whom the prospective SWAM subcontractor should contact for additional information.

b. Using the services and assistance of the Small Business Administration (SBA) and the Department of Minority Business Enterprises of the Commonwealth of Virginia (DMBE).
B. Bidders/Offerors are required to respond to 1-4 below to be deemed responsive, and must submit with their bid/proposal or prior to award.

If you are a SWAM firm please check one of the following boxes:

SBE □  WBE □  MBE □  SDV □

1. In the spaces below, report the anticipated dollars that you intend to subcontract to each business type if a contract is awarded to your firm. (If you do not intend to sub-contract any work to others, even if you are a SWAM business enterprise, put zeros in the spaces below).

Total dollars to be sub-contracted: Company Name:

Total SBE Dollars $________________
Total WBE Dollars $________________
Total MBE Dollars $________________
Total SDV Dollars $________________

2. Provide as an attachment, description of contacts to SWAM firms, including number of contacts, work offered, dates of contact and result of contact. If none, so state:

________________________________________________________________________

3. Provide as an attachment, copies of advertisements for employment showing your firm as advertised to be an Equal Opportunity Employer. *(This is a requirement for firms who have received prior governmental contracts valued at $10,000 or more and have advertised subsequently to that date)* if none, so state:

________________________________________________________________________

4. If you are not a SWAM business enterprise and you do not plan to utilize such firms in this contract, state your reasons:

________________________________________________________________________

For your convenience below is a link to the City’s SWAM Directory of firms in Newport News.

Download SWAM Directory of Firms Located in Newport News.

This Minority Directory is made up of Newport News based SWAM (Small, Women and Minority) owned firms registered with our Department. They are listed by the type of work that they do. General contractors are encouraged to use these firms whenever possible on City contracts. While the City makes no claim as to their skills or suitability, we feel this could be a starting place for your search for SWAM firms. [Qualified firms not listed should contact the Purchasing Department.]
EXCEPTION PAGE

EXCEPTIONS:
Provider must sign the appropriate statement below, as applicable:

( ) Provider understands and agrees to all terms, conditions, requirements, and specifications stated herein.

Firm: _________________________________________________________

Signature: _____________________________________________________

( ) Provider takes exception to terms, conditions, requirements, or specifications stated herein (Provider must itemize all exceptions below, and return with this bid):

Firm: __________________________________________________________

Signature: ______________________________________________________

_______________________________________________________________

Specify payment terms:

( ) “2%-20, Net 30” OR ( ) “Net 30”

If payment terms are not specified above, then the terms shall be “2%-20, Net 30”. Payment terms shall be considered in determining the low bidder.

Providers should note that any exceptions taken from the stated terms and/or specifications may be cause for their submittal to be deemed "non-responsive", risking the rejection of their submittal.

Bid Results

For a complete written tally sheet, please go to our website: www.nngov.com/purchasing.
REFERENCES FOR BIDDERS*

Please provide 3 references with contact person and phone number for construction projects occurring within the last 5 years (if applicable, please include 1 municipal government reference):

1. ___________________________________________ tel. # ______________
2. ___________________________________________ tel. # ______________
3. ___________________________________________ tel. # ______________

Please provide 3 construction projects that demonstrate your experience with mast arm traffic signal installations in the past 5 years:

1. ___________________________________________
2. ___________________________________________
3. ___________________________________________

Provide 3 construction projects within the past 5 years where the given time frame for the project was achieved:

1. ___________________________________________
2. ___________________________________________
3. ___________________________________________

_____ YES _____ NO Possess foreman and/or crew that is familiar with the installation of mast arm traffic signals; Approximate years of experience of each:

foreman: __________
crew: __________

_____ YES _____ NO Possess foreman and/or crew with experience in dealing with the public affected by construction projects

_____ YES _____ NO Company has performed construction projects for or within the limits of the City of Newport News. Locations: ___________________________________________

* The City reserves the right to ask for additional information.
NOTICE TO CONTRACTORS

Sealed bids will be received by the Department of Purchasing of the City of Newport News, Virginia on the 4th Floor, City Hall Building, 2400 Washington Avenue, no later than **2:30 p.m., March 11, 2014.**

Please be advised that all questions in reference to this project must be directed to the Department of Purchasing, Shari Colvin, CPPO, CPPB, VCO, Deputy Director, scolvin@nngov.com and copy Feleasha Sherfy, Assistant Buyer, fsherfy@nngov.com. **All bid questions must be received by 1:00 p.m., March 4, 2014.** All questions must be submitted in writing; telephonic inquiries will not be considered.

SCOPE OF WORK: Replace the existing span wire traffic signal with a new mast arm traffic signal at the intersection of Warwick Boulevard and 75th Street. Work will include all labor, services and materials for construction and installation of foundations, mast arms, conduits, pedestrian accommodations, and associated equipment. Furthermore, it includes the removal of the existing span wire traffic signal and associated equipment as well as the installation of new streetlighting. All work shall be completed within 270 calendar days from the Notice to Proceed date.

Each proposal greater than $100,000, shall be accompanied by a bidder's bond or a certified check of five percent (5%) of the amount of the bid. Performance and Labor & Material Payment Bond amounting to one hundred percent (100%) of the contract price will be required of the successful bidder.

This contract consists of plans, technical specifications and the Hampton Roads Planning District Commission (HRPDC) Regional Construction Standards, 5th Edition - Divisions Two thru Eight and the Department of Engineering Standard Specifications Section 1000-1012. Plans and technical specifications for said contract are available for free download from our website, www.nngov.com/purchasing. The Standard Specifications are available for $15.75, including tax, per copy non-refundable, from the Department of Engineering, City Hall Building, 7th floor, Newport News, Virginia 23607, telephone (757) 933-2311. If the Contractor submitting a bid does not have a set of the current Department of Engineering Standard Specifications, a set SHALL BE PURCHASED prior to submitting a bid at a cost of $15.75, including tax per copy, non-refundable and shall be maintained on the job site at all times until completion of the project.

The attention of the bidder is invited to the provisions of Chapter 11 of Title 54.1 of the Code of Virginia regulating the practice of general contracting under which it will be necessary for the bidder to show evidence of certificate of registration as provided by said code.

The City of Newport News reserves the right to reject any or all bids.
To The City Manager  
City of Newport News  
Newport News, Virginia

Dear Sir:

In submitting this bid, the undersigned declares that he/she is, or they are, the only person, or persons, interested in said bid, that it is made without any connection with any person making another bid for the same contract; that the bid is in all respects fair and without collusion, fraud or mental reservation; and that no official of the City, or any person in the employ of the City, is directly or indirectly, interested in said bid, or in the supplies or work in which it relates, or on any portion of the profits thereof.

The undersigned also declares that he/she had, or they have, examined all the specifications, specifically including the Engineering Department Standard Specifications, August 1, 1983, as amended, form of contract, and that he/she has, or they have, personally inspected the actual location of the work together with the local sources of supply and understands that in signing this bid, he/she, or they, waive all right to plead a misunderstanding regarding the same.

The undersigned further understands and agrees that he/she is, or they are, to furnish and provide for the respective item price bid, all necessary materials, machinery, implements, tools, labor, service, et cetera, and to do, and perform all the work necessary under the aforesaid conditions to complete the improvements aforementioned in accordance with the specifications for said improvements which specifications, it is agreed, are a part of this bid, and to accept in full compensation therefore, the amount of the summation of the products of the actual quantities, as finally determined, multiplied by the unit price bid. For the purpose of award, however, the summation of the products of the approximate quantities herein stated, multiplied by the unit price, shall be considered the total bid.

The undersigned further agrees to accept the aforesaid unit prices in compensation for any additions or deductions caused by variations in quantities due to more accurate measurements.
### BID

**Traffic Signal Mast Arm Conversion: Warwick Boulevard and 75th Street**

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<thead>
<tr>
<th>Item</th>
<th>Description</th>
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## Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

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<td>59</td>
<td>EMERGENCY VEHICLE PREEMPTION DETECTOR (1-WAY, SINGLE INPUT)</td>
<td>3</td>
<td>EA</td>
<td>Spec Prov</td>
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<tr>
<td>60</td>
<td>EMERGENCY VEHICLE PREEMPTION PHASE SELECTOR (4 CHANNELS)</td>
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<td>61</td>
<td>VIDEO DETECTION EQUIPMENT</td>
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<td>EA</td>
<td>Spec Prov</td>
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<tr>
<td>62</td>
<td>THERMAL DETECTION CAMERA</td>
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<td>EA</td>
<td>Spec Prov</td>
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<td></td>
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<tr>
<td>63</td>
<td>THERMAL DETECTION MONITOR</td>
<td>1</td>
<td>EA</td>
<td>Spec Prov</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BID**

The City will make the award on **Total Bid** to the lowest responsive and responsible bidder. Payment terms shall be considered in determining the low bidder. The purchasing office reserves the right to conduct any test it may deem advisable and make all evaluations. The City also reserves the right to reject any or all bids, and to waive informalities prior to making the award, whenever it is deemed to be in its best interest.
Bid Notes:

1) Refer to HRPDC Regional Construction Standards, Division 1, Section 109.1.2 “Incidental Items” for incidental work which may not be listed.
2) Refer to the Hampton Roads Regional Construction Standards, Fifth Edition, as amended, dated December 2010 and Special Provisions Section in these specifications.
3) Contractor shall be responsible for all required Portland Cement Concrete materials testing. Cost shall be included in the Measurement and Payment of each concrete bid item.
GENERAL

Unless otherwise specified, the Contractor shall be responsible for furnishing all labor, materials, hardware, equipment, and incidentals as may be required to complete each item of work as specified on the plans or included in these specifications. All applicable taxes shall be included in the unit price bid.

1. Contract Time: All work shall be completed within 210 calendar days from the Notice-to-Proceed date.

2. Liquidated Damages: For each day that the contract remains in an incomplete state beyond the allotted 210 calendar days plus any authorized contract extensions; liquidated damages shall be charged against the contractor at $350.00 per day.

3. The contractor shall be responsible for purchasing all necessary permits as required by the City of Newport News prior to start of construction. Note that the fees will not be waived.

4. Submittals shall be provided to the Department of Engineering for review and approval. A submittal is required for every contract item and no item shall be installed before the City approves/accepts the source and quality of the submittal.

5. Sequence of Construction: The contractor shall submit for approval a construction schedule detailing day/night/weekend work, phase/sections, traffic control, etc…

6. All work in this contract including materials, labor and equipment shall be in conformance with the Hampton Roads Planning District Commission Regional Construction Standards Fifth Edition, if inconsistencies appear between the plans, specifications or referenced standards, the most stringent standard shall apply. When the referenced standards appear to conflict, the City of Newport News Standards. Any conflicts or apparent ambiguities between these specifications or the plans and bid documents will be resolved at the discretion of the Engineer.

7. Throughout these bid and contract documents, drawings, and referenced standards, whenever the “Engineer”, “Department” or the “Commonwealth” is referenced as a project authority, it is to be construed to mean the Director of Engineering or his designee, The Department of Engineering, or the City of Newport News, respectively.

8. Prior to construction, the contractor shall call MISS UTILITY (toll free at 1-800-552-7001 for location of underground utilities.
On acceptance of this bid for said work, the undersigned does, or do hereby bind himself/herself, or themselves, to enter into a written contract within ten (10) days of award, with the said Authority, and to perform said work for the consideration above named.

The bidder agrees to complete the entire work within **two hundred and ten (210) calendar days** from date of Notice to Proceed.

State Contractor Registration Number: ______________________________________________

Business Name: ________________________________________________________________

Address: ________________________________ (Street; P.O. Box not acceptable)

______________________________ (City, State and Zip Code)

By:_______________________________________ Date:_________________

By:_______________________________________ Date:_________________

**ADDENDA**

<table>
<thead>
<tr>
<th>No.</th>
<th>ACKNOWLEDGED</th>
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</thead>
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<tr>
<td></td>
<td>Initial</td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>

IF CONTRACTOR DESIRES TO MAKE ANY ALTERNATIVE BID ON DIFFERENT TYPE OF CONSTRUCTION THAN ONE CALLED FOR, IT SHALL BE ENCLOSED ON A SEPARATE SHEET.
Bid Bond #_____________________

BID BOND

KNOW ALL MEN BY THOSE PRESENT: That we, the undersigned:

_________________________________________

_________________________________________ as Principal, and ______________________

as Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia, in the just and full sum of five percent (5%) of the maximum amount of accompanying bid for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

WHEREAS, the Principal has submitted a bid, dated ____________________________, 20_____, Traffic Signal Mast Arm Conversion on Warwick Boulevard and 75th Street, IFB#2014-4953-2049.

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract with the Obligee in accordance with such bid and give bond with good and sufficient surety for the faithful performance of such contract, or in the event of the failure of the Principal to enter into such contract and give such bond, if the Principal shall pay to the Obligee the difference, not to exceed the penalty hereof, between the amount specified in said bid and the amount for which the Obligee may legally contract with another party to perform the work covered by said bid, if the latter amount be in excess of the former, then this obligation shall be null and void, otherwise to remain in full force and effect.
IN WITNESS WHEREOF, the parties hereto have caused their corporation names and seals, respectively, to be hereunto subscribed and affixed by their officers in that behalf duly authorized this _________ day of ______________________, ____________.

___________________________________
CONTRACTOR
BY ________________________________
SEAL

ATTEST:

___________________________________
SURETY
BY ________________________________
SEAL

ATTEST:

___________________________________

Resident Virginia Agent of Surety

Submit with Power of Attorney
Section B
INSURANCE REQUIREMENTS
7/19/13

Insurance: The bidder/offeror shall maintain adequate liability insurance, which shall protect and save harmless the City of Newport News, Virginia, its officials, employees, and volunteers from all suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and shall include products and completed operations coverage.

The Commonwealth of Virginia requires construction contractors and subcontractors to obtain and maintain workers’ compensation insurance while performing work on behalf of the City. Evidence of coverage needs to be provided prior to commencement of work by bidders/offerors. Coverage is compulsory for employers of 3 or more employees, to include the employer.

Prior to commencement of services, the bidder/offeror shall furnish the City with the following separate endorsements, and a certificate of insurance showing all required insurance coverage with companies authorized or licensed to do business in Virginia. A separate endorsement to the general liability policy shall be provided in which the City is designated as an “Additional Insured.” In addition, a separate endorsement to the workers’ compensation policy shall be provided in which the City is designated as an “Alternate Employer.”

Sample forms CG 20 10 (designating the City as Additional Insured for liability claims) and WC 00 03 01 (2005 ed.) (designating the City as an Alternate Employer for workers’ compensation claims, pursuant to Section 65.2-302(A) of the Code of Virginia, 1950, as amended); and the Commonwealth's form for Worker's Compensation Certificate of Coverage are attached.

Professional services (work performed by an independent contractor, within the scope of the practice of accounting, architecture, land surveying, landscape architecture, law, dentistry, medicine, optometry, pharmacy, or professional engineering) shall require a certificate of insurance showing professional liability/errors and omissions coverage insurance with companies authorized or licensed to do business in Virginia, prior to the commencement of services. Certain other service providers shall meet the same requirements (including but not limited to asbestos design/inspection/or abatement contractors, and other health care practitioners).

The bidder/offeror shall have ten (10) days from notice of intent to award to provide insurance documentation. Failure to provide the Certificate and forms within this period may be cause for the City to award a contract to the next responsive bidder/offeror, and hold the original contractor liable for excess costs. All insurers providing the above coverage shall give the City thirty (30) days advance written notice in the event of any non-renewal or cancellation of such insurance (10 days notice for non-payment of premium). As confirmation thereof, the City must be furnished either a policy endorsement specifically providing for such notice (copies of three sample endorsements attached), or a copy of the policy language that gives the City such assurance, or a statement on the insurance agent’s, broker’s, or insurer’s letterhead that the City shall be given such notice.

<table>
<thead>
<tr>
<th>TYPE INSURANCE COVERAGE</th>
<th>LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Workers’ Compensation</td>
<td>Statutory</td>
</tr>
<tr>
<td>Employer's Liability</td>
<td></td>
</tr>
<tr>
<td>Bodily Injury by Accident</td>
<td>$100,000.00 each accident</td>
</tr>
<tr>
<td>Bodily Injury by Disease</td>
<td>$100,000.00 each employee</td>
</tr>
<tr>
<td>Bodily Injury by Disease</td>
<td>$500,000.00 policy limit</td>
</tr>
<tr>
<td>2. Commercial General Liability</td>
<td>$1,000,000.00 each occurrence</td>
</tr>
<tr>
<td></td>
<td>$2,000,000.00 aggregate</td>
</tr>
<tr>
<td>3. Automobile Liability</td>
<td>$100,000.00 each occurrence</td>
</tr>
<tr>
<td>(Owned, hired, leased, and borrowed Vehicles)</td>
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</tr>
<tr>
<td>4. Professional Liability/E&amp;O(if applicable)</td>
<td>$2,000,000.00 each claim/occurrence</td>
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<tr>
<td></td>
<td>$2,000,000.00 aggregate</td>
</tr>
<tr>
<td>5. Environmental/Pollution Legal Insurance(if applicable)</td>
<td>$2,000,000.00 each occurrence</td>
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<tr>
<td></td>
<td>$2,000,000.00 aggregate</td>
</tr>
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</table>

This insurance coverage supersedes any conflicting insurance coverage and limits in the Department of Engineering 1983 Standard Specifications.
Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

POLICY NUMBER: __________________ COMMERCIAL GENERAL LIABILITY

CG 20 10 10 93

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS (FORM B)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organizations:

City of Newport News
Purchasing Department
2400 Washington Ave
Newport News, VA 23607

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement).

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for this insured.

CG 20 10 10 93
Endorsement  

Alternate Employer  

WC 00 03 01  

Policy Amendment  

If the following information is not complete, refer to the appropriate information page attached to the policy.  

<table>
<thead>
<tr>
<th>INSURED</th>
<th>POLICY NO.</th>
<th>SEQ. NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCER</td>
<td>EFFECTIVE DATE</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SCHEDULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate Employer</td>
</tr>
</tbody>
</table>

City of Newport News  
c/o Purchasing Department  
2400 Washington Avenue  
Newport News, Virginia  
Virginia  

This endorsement applies only with respect to bodily injury to your employees while in the course of special or temporary employment by the alternate employer in the state named in the Schedule. Part One (Workers Compensation Insurance) and Part Two (Employers Liability Insurance) will apply as though the alternate employer is insured.

Under Part One (Workers Compensation Insurance), we will reimburse the alternate employer for the benefits required by the workers compensation law if we are not permitted to pay the benefits directly to the person entitled to them.

The insurance afforded by this endorsement is not intended to satisfy the alternate employers’ duty to secure its obligations under the workers compensation law. We will not file evidence of this insurance on behalf of the alternate employer with any government agency.

We will not ask any other insurer of the alternate employer to share with us a loss covered by this endorsement.

Premiums will be charged for your employees while in the course of special or temporary employment by the alternate employer.

Part Four (Your Duties If Injury Occurs) applies to you and the alternate employer. The alternate employer will recognize our right to defend under Parts One and Two and our right to inspect under Part Six.

Rev: 03/22/05
WORKER’S COMPENSATION
CERTIFICATE OF COVERAGE

Section 11-46.3, Code of Virginia, requires construction contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work on behalf of the Commonwealth of Virginia departments, institutions or agencies. This same requirement applies for work being performed on behalf of local governments.

Evidence of coverage needs to be provided prior to commencement of work.

This form is to be returned to the organization contracting the work.

The undersigned organization stipulates that it either:

A. Has worker's compensation insurance    _____ Yes
   
   Insurance Company:  _______________________________

   Policy Expiration Date:  _______________________________

B. Is self-insured for workers' compensation    _____ Yes

Title of Construction Contract:  ____________________________________________

Contract Number:  ____________________________________________

Signed By:  ____________________________________________

Title:  ____________________________________________

Firm Name:  ____________________________________________

Address:  ____________________________________________
Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

NOTICE ENDORSEMENT

Policy Number: IL 60 05 VA 01 10

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

MATERIAL COVERAGE CHANGE OR CANCELLATION
NOTIFICATION – CERTIFIED MAIL

This endorsement modifies insurance provided under the following:
COMMERCIAL GENERAL LIABILITY COVERAGE PART
COMMERCIAL INLAND MARINE COVERAGE PART
COMMERCIAL PROPERTY COVERAGE PART
CRIME AND FIDELITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
OWNERS AND CONTRACTOR PROTECTIVE LIABILITY PART
RAILROAD PROTECTIVE LIABILITY COVERAGE PART

SCHEDULE

<table>
<thead>
<tr>
<th>Name of additional Insured Person(s)</th>
<th>Location And Description Of Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Newport News</td>
<td></td>
</tr>
<tr>
<td>c/o Purchasing Department</td>
<td></td>
</tr>
<tr>
<td>2400 Washington Avenue</td>
<td></td>
</tr>
<tr>
<td>Newport News, VA 23607</td>
<td></td>
</tr>
</tbody>
</table>

We will not cancel or reduce coverage under this policy without providing at least 30 day notice of our intent to do so. Notice of such cancellation or reduction of coverage will be provided by certified mail, return receipt requested, to the Additional insured in the schedule above.
Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

NOTICE ENDORSEMENT

Policy Number: WC 99 00 10 01 10A

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

MATERIAL COVERAGE CHANGE OR CANCELLATION NOTIFICATION – CERTIFIED MAIL

This endorsement modifies insurance provided under the following:
WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY

SCHEDULE

<table>
<thead>
<tr>
<th>Name of additional Insured Person(s) Or Organization(s) and mailing address:</th>
<th>Location And Description Of Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Newport News c/o Purchasing Department 2400 Washington Avenue Newport News, VA 23607</td>
<td></td>
</tr>
</tbody>
</table>

We will not cancel or reduce coverage under this policy without providing at least 30 days notice of our intent to do so. Notice of such cancellation or reduction of coverage will be provided by certified mail, return receipt requested, to the Additional insured in the schedule above.
NOTICE ENDORSEMENT

Policy Number: COMMERCIAL AUTO
CA 02 03 12 05

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

VIRGINIA CANCELLATION AND NONRENEWAL
NOTICE TO DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:
BUSINESS AUTO COVERAGE FORM
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE FORM
GARAGE COVERAGE FORM
MOTOR CARRIER COVERAGE FORM
TRUCKERS COVERAGE FORM

SCHEDULE

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Name: City of Newport News</td>
<td>c/o Purchasing Department</td>
</tr>
</tbody>
</table>
| 2. Address: | 2400 Washington Avenue  
Newport News, VA 23607 |
| 3. Number of days advance notice: | 30 |

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.
July 17, 2013

To Whom It May Concern:

Re: Notice of cancellation requirements for insurance coverage

Dear Sir or Madam:

In the wake of revisions to the ACORD form, I have been receiving documentation from insurers that indicates that, since a statement regarding notice of cancellation is no longer included on the form, that the company cannot give any such assurance in the future. Some companies have indicated that they intend to strictly rely on the disclaimers in the form.

Please note that the City requires that it be added as an additional insured by specific endorsements. A simple notation of these endorsements on the ACORD form will not be accepted. Also, any additional insured endorsement will be rejected if it includes an exclusion of completed operations coverage.

Further, the City will not accept proof of insurance that fails to provide for thirty (30) days notice of policy cancellation [ten (10) days for those situations detailed in Va. Code § 38.2-2114].

This assurance may be provided by one of the following two methods:

1. A separate endorsement specifying the notice as required, or

2. A copy of a policy provision regarding such notice.

In addition, this same assurance must be given when the City requires an Alternate Employer endorsement. No alternate employer endorsement will be accepted that includes a provision that the statutory employer will receive no notice of cancellation. A form including this provision appears to be contrary to Virginia Code § 65.2-804(B), which requires thirty (30) days notice of cancellation [ten (10) days for those situations detailed in Va. Code § 38.2-2114]. Virginia Code § 65.2-800 requires that an employer be insured, and
paragraph C of that section equates an employer and a statutory employer for the purposes of that duty.

In summary, the City will accept no proof of insurance that does not include in one of the forms indicated above an assurance that the City will receive thirty(30) days notice of cancellation [ten (10) days for those situations detailed in Va. Code § 38.2-2114]. Also, any qualification of this assurance with language that purports to avoid liability for failure to provide such notice will not be accepted.

Failure to provide the required items could result in rejection of your insured’s bid or offer to provide services to the City, or a rejection of the insured’s request for City permits that require the City to be named as an additional insured.

Additional coverage may be necessary as set out in the contract documents.

Very Truly Yours,

/s/ Joseph M. DuRant

Deputy City Attorney
CONTRACT

THIS AGREEMENT, made this ____ day of ______________, 20___, between the City of Newport News, Virginia, hereinafter referred to and designated as "City" and/or ________________________________, his, it or their successors, executors, administrators and assigns, hereinafter referred to and designated as "Contractor."

WHEREAS, the City of Newport News, Virginia, has accepted the sealed bid of the said contractor to furnish all the labor and equipment and to do and perform all the work necessary to complete the Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street, IFB#2014-4953-2049, in the City of Newport News, Virginia, as shown on the plans and specifications hereto attached for the unit prices set forth in the said bid.

NOW THEREFORE, THIS AGREEMENT WITNESSETH: That in consideration of the payments to be made by the City of Newport News, Virginia, as hereinafter set out, the Contractor covenants and agrees with said City of Newport News, Virginia to furnish all labor, tools and equipment and to do and perform in a good and workmanlike manner all and singular all the work in and about the Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street, IFB#2014-4953-2049, in the City of Newport News, Virginia, in strict accordance with all documents identified below which are incorporated and made a part hereof as fully and completely as if the same were herein, in words and figures, at length set forth:
Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

_______________________________________
BY
_______________________________________
TITLE_______________________________

Seal Here:

ATTEST:______________________________

TITLE: _______________________________(Officer or Corporation)

CITY OF NEWPORT NEWS, VIRGINIA

BY ________________________________

Seal Here:

ATTEST:______________________________
The Contractor agrees to commence work under this contract immediately upon the written order of the owner and to diligently prosecute the same and to complete the same **within two hundred and ten (210) calendar days from Notice to Proceed.**
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>HRPDC Spec Section</th>
<th>Unit Price</th>
<th>Extended Price</th>
</tr>
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<td>LS</td>
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<td>2</td>
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<td>LS</td>
<td>Spec Prov</td>
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<td>3</td>
<td>TEST HOLE</td>
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<td>EA</td>
<td>Spec Prov</td>
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<td>4</td>
<td>REMOVAL OF EXISTING TRAFFIC CONTROL EQUIPMENT AND SUPPORTS</td>
<td>1</td>
<td>LS</td>
<td>Spec Prov</td>
<td></td>
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<tr>
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<td>REMOVE AND RELOCATE EXISTING SIGN PANEL</td>
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<td>Spec Prov</td>
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<td>6</td>
<td>REMOVE AND DISPOSE EXISTING SIGN POST</td>
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<td>Spec Prov</td>
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<td>7</td>
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<td>LS</td>
<td>Spec Prov</td>
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<td>8</td>
<td>RELOCATE EXISTING WIRELESS MAGNETOMETER DETECTION SYSTEM</td>
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<td>LS</td>
<td>Spec Prov</td>
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<td>9</td>
<td>RELOCATE EXISTING COMMUNICATIONS EQUIPMENT</td>
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<td>LS</td>
<td>Spec Prov</td>
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<td>10</td>
<td>PROPOSED PAVEMENT LINE MARKING, YELLOW, TYPE B, CLASS I, 4”</td>
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<td>11</td>
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<td>14</td>
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<td>Spec Prov</td>
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<td>15</td>
<td>SIDEWALK RAMP TYPE B</td>
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<td>Spec Prov</td>
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<tr>
<td>16</td>
<td>HYDRAULIC CEMENT CONCRETE SIDEWALK (4”)</td>
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<td>Spec Prov</td>
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<td>17</td>
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<td>18</td>
<td>INLET PROTECTION (TYPE B)</td>
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<td>303</td>
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</tbody>
</table>
Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>HRPDC Spec Section</th>
<th>Unit Price</th>
<th>Extended Price</th>
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<tr>
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**Total Bid:** $
Contract Notes:

1) Refer to HRPDC Regional Construction Standards, Division 1, Section 109.1.2 “Incidental Items” for incidental work which may not be listed.
2) Refer to the Hampton Roads Regional Construction Standards, Fifth Edition, as amended, dated December 2010 and Special Provisions Section in these specifications.
3) Contractor shall be responsible for all required Portland Cement Concrete materials testing. Cost shall be included in the Measurement and Payment of each concrete bid item.
GENERAL

Unless otherwise specified, the Contractor shall be responsible for furnishing all labor, materials, hardware, equipment, and incidentals as may be required to complete each item of work as specified on the plans or included in these specifications. All applicable taxes shall be included in the unit price bid.

9. Contract Time: All work shall be completed within 210 calendar days from the Notice-to-Proceed date.

10. Liquidated Damages: For each day that the contract remains in an incomplete state beyond the allotted 210 calendar days plus any authorized contract extensions; liquidated damages shall be charged against the contractor at $350.00 per day.

11. The contractor shall be responsible for purchasing all necessary permits as required by the City of Newport News prior to start of construction. Note that the fees will not be waived.

12. Submittals shall be provided to the Department of Engineering for review and approval. A submittal is required for every contract item and no item shall be installed before the City approves/accepts the source and quality of the submittal.

13. Sequence of Construction: The contractor shall submit for approval a construction schedule detailing day/night/weekend work, phase/sections, traffic control, etc…

14. All work in this contract including materials, labor and equipment shall be in conformance with the Hampton Roads Planning District Commission Regional Construction Standards Fifth Edition, if inconsistencies appear between the plans, specifications or referenced standards, the most stringent standard shall apply. When the referenced standards appear to conflict, the City of Newport News Standards. Any conflicts or apparent ambiguities between these specifications or the plans and bid documents will be resolved at the discretion of the Engineer.

15. Throughout these bid and contract documents, drawings, and referenced standards, whenever the “Engineer”, “Department” or the “Commonwealth” is referenced as a project authority, it is to be construed to mean the Director of Engineering or his designee, The Department of Engineering, or the City of Newport News, respectively.

16. Prior to construction, the contractor shall call MISS UTILITY (toll free at 1-800-552-7001 for location of underground utilities.)
Bond #________________________

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned ________________________________, as Principal, and ________________________________, as Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia as Obligee, in the amount of __________________ dollars, __________________ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

WHEREAS, the said ________________________________ did, on the _____ day of ____________________, 20____, enter into a contract with the City of Newport News, Virginia for the Traffic Signal Mast Arm Conversion at the intersection of Warwick Boulevard and 75th Street, IFB#2014-4953-2049, which said contract is by reference made a part hereof, is hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall in all respects promptly and faithfully comply with and fulfill all the terms and conditions of said contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any change, alteration or addition to the terms of the Contract or extension of time made by the Owner.

Whenever principal shall be, and declared by Obligee to be in default under the Contract, the Surety may promptly remedy the default, or shall promptly

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Obligee elects, upon determination by the Obligee and Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Obligee, and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph, shall mean the total amount payable by the Obligee to principal under the Contract and any amendments thereto, less the amount properly paid by Obligee to principal.

It is hereby expressly further understood and agreed that this Bond is also given and made against defective material and workmanship in the said work covered by the said Contract, provided, however, that no suit, action or proceeding, by reason of any defect whatever, shall be brought upon this Bond after one (1) year following (i) completion of the contract, including the expiration of all warranties and guarantees, or (ii) discovery of the defect or breach of warranty, if the action be for such.
No right of action shall accrue on this bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators or successors of Obligee.

SIGNED AND SEALED this _____ day of ___________________, 20_____.

CONTRACTOR

BY _____________________________

Signature of Authorized
Owner, Partner or Officer

SURETY

BY _____________________________

Attorney In Fact

Attach Original Power of Attorney

City Attorney Use Only

APPROVED AS TO FORM

City Attorney Date
Traffic Signal Mast Arm Conversion at the Intersection of Warwick Boulevard and 75th Street

Labor & Material Bond #_________________

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, ________________________________, as Principal, and ____________________________________________, as Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia as Obligee in the amount of _______________________________ Dollars (_____________) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

WHEREAS, the said ________________________________ did, on the _____ day of _____________, 20_____, enter into a contract with the City of Newport News, Virginia, for the Traffic Signal Mast Arm Conversion on Warwick Boulevard and 75th Street, IFB#2014-4953-2049, which said contract is by reference made a part hereof, as fully and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to also include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

2. The above-named Principal and Surety hereby jointly and severally agree with the
City that every claimant as herein defined, who has not been paid in full before the expiration of a period ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for such sum or sums as may be justly due claimant, and have execution thereon. The City shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

A. Unless claimant, other than one having a direct contract with the Principal, shall have given written notice of the following: The Principal, the City, and the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or for whom the work or labor was done or performed.

Such notice shall be served by mailing the same by registered or certified mail, postage prepaid, in an envelope addressed to the Principal, City and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

B. After the expiration of one (1) year following the date on which Principal ceased work on said Contract, it being understood, however, that if any limitation embodied in this Bond is prohibited by any law controlling the construction
hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

C. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.
Traffic Signal Mast Arm Conversion at the Intersection of Warwick Boulevard and 75th Street

SIGNED AND SEALED this ______ day of ______________________, 20____.

__________________________________
Contractor

BY ____________________________________

ATTEST:

__________________________________
Surety

BY _____________________________________
ATTORNEY-IN-FACT

Resident Virginia Agent of Surety
(if original agent is non-resident)

Submit with Power of Attorney

APPROVED AS
TO FORM

__________________________
City Attorney
Section C
SPECIAL TRAFFIC CONDITIONS

The following traffic control requirements shall apply:

1. Section 1004.13 "Traffic Control" of our current Standard Specifications (as amended May 1, 1991) shall be applicable on this project. In addition, fluorescent prismatic lens sheeting signs (diamond grade) shall be used in work zones and other work zone improvements. The use of orange encapsulated lens sheeting for construction warning signs is no longer allowed.

2. The Virginia Work Area Protection Manual (dated August 2011) as well as the Manual on Uniform Traffic Control Devices, 2009 Edition, shall be used on this project.

3. If assistance from Traffic Operations for such items as "No Parking" signs, traffic signal information, or detector locations, etc. becomes necessary, the Contractor shall give at least forty-eight hours (weekdays) notice in advance. Contact 269-2452, weekdays, 7:00 A.M. to 4:00 P.M. for these services.

4. The Contractor shall control the stockpiling of materials and/or spoils so as not to prohibit access to residences or businesses. Lighted, reflectorized plastic drums shall also be provided around any and all materials and/or hazardous locations within the project limits and within the City's right-of-way.

5. Haul routes for spoil removal and/or needed materials (fill, asphalt, rip-rap, etc.) shall be requested in writing (including map) and shall be approved by the Engineer.

6. Local access to homes and business shall be maintained at all times.

7. The Contractor shall submit a traffic control plan to the Department of Engineering Permits Office as part of the Right-of-Way Permit for approval before work shall commence on the project. The City will reserve the right to require modifications to the traffic control plan/or traffic control material placement in the field as conditions change.

8. Work Hour Restrictions: A single lane closure at this intersection will be permitted between the hours of 8 am to 3 pm and 6 pm to 6 am. The closure of multiple lanes will require a review of special work hour restrictions for night or weekends only. Although care should be taken to minimize traffic disruption. A tentative schedule of lane closures and work hours shall be included with the traffic control plan as required in Note 7. Deviation from standard work hours and additional lane closures shall be approved by the Department of Engineering prior to commencement. Notification to the Engineering Department – Traffic Division for any road closures must be done 24 hours prior to closure. “STOP” sign control (multi-way) shall be implemented during “downtime” to maintain orderly traffic flows.
9. Open junction boxes shall not be left unattended or remain open when work zone traffic control plan set-up is not in place. Work zones shall be clearly delineated and specific hazard areas are to be encircled with reflectorized plastic drums in lieu of Type I or Type II barricades which are not approved for use in the street.

10. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported into a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day or as often as directed by the Engineer.

11. As part of getting issued a Right-of-Way permit the contractor will be responsible to have a Right-of-Way bond and insurance.
SPECIAL PROVISIONS

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  City of Newport News Department of Engineering
  Traffic Operations Policy Manual 07/01/2010

APPENDIX B ...................................................................................................................... Appendix-18
  Geotechnical Data – Soil Borings and Test Pit Data
GENERAL REQUIREMENTS

1.1 DESCRIPTION
These specifications cover general requirements and procedures for the contractor.

Contractor Experience (Signal Work)
The Contractor shall have five (5) years of experience in site and underground utility construction (traffic signal, sanitary, storm, water, and roadway) of similar scope and value. Any site superintendent, at the time of bid, shall possess ten (10) years of site and underground utility experience (traffic signal, sanitary, storm, water, and roadway). Also, a minimum of three years of experience working with Municipalities and/or VDOT is required. The primary scope of work is traffic signal installation.

Work on Sunday and City Holidays
In case when the Contractor chooses to work on Sunday or any City holiday, the Contractor shall be required to pay the City for project inspection services for those days. The payment rate is established at $75.00 per inspector, per hour, for each hour the inspector(s) provides the inspection service, which shall include travel to and from the site. The Contractor shall submit with each monthly invoice a check payable to The City of Newport News in an amount equivalent to the hours of inspector service times the rate for the specific billing period. There shall be a minimum service time of two (2) hours per Inspector.

The Contractor shall request approval from the City of any scheduled work on Sundays or Holidays a minimum of 72 hours prior to the scheduled work date. Approval by the Director of the Department of Engineering or his representative is required. There is no obligation or requirement that the City provides this service, and the City cannot guarantee the availability of an Inspector.

NOTE: This requirement may not apply to contracts where work hour restrictions established by the City will require Sunday or Holiday work.

Coordination with Private and Public Utility Adjustments or Relocations
At points where the Contractor’s operations are adjacent to any public or private utility, damage to which might result in considerable expense, loss or inconvenience, work shall not commence until all arrangements necessary for the protection or relocation thereof have been completed.

The Contractor shall cooperate with the Owners of any underground or overhead utility lines in their removal and adjustment operations in order that these operations may progress in a reasonable manner and that duplication of adjustment work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted. Costs incurred by the Contractor from failure to coordinate this work with utility relocations shall be borne solely by the Contractor.
In the event of interruption to any utility service as a result of accidental breakage, or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with said authority in the restoration of service. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority. The Contractor shall be responsible for any damage to utilities due to neglect or due to his methods of performing the work and shall be responsible for the cost of restoring the utility to satisfactory service.

Absolutely no time extensions or additional monies will be allotted for simultaneous work by other utility companies (Dominion Virginia Power, Verizon, Cox Communication, Virginia Natural Gas, Newport News Waterworks, L3 Communication, etc.) and other Contractor’s working in or adjacent to this project. The Contractor will be expected to work around and with Dominion Virginia Power, Cox cable, vaults and pedestals, Verizon pole pedestals, vaults, lines, and fiber optic lines, L3 vaults and cable, and Virginia Natural Gas pipelines.

Authority of the Engineer
The Contractor shall perform all of the work specified herein under the general direction and to entire satisfaction, approval, and acceptance of the Engineer. The Engineer shall decide all questions relating to measurements of quantities, the character, consistency, and quality of the work performed, and as to whether the rate of progress will ensure completion within the contract time. All questions as to the meaning of the specifications will be decided by the Engineer, and he/she shall have the authority to stop the work if necessary to ensure its proper execution.

MAINTENANCE OF TRAFFIC

1.1 MEASUREMENT AND PAYMENT
Section 512 of the HRPDC Specifications is amended to include the following:

Maintenance of Traffic will be measured and paid for as a lump sum (LS) for all required traffic control throughout the duration of the project. Included in the lump sum price shall be all equipment, material and labor necessary to maintain traffic and for traffic control for the duration of the project. All materials and equipment provided for this line item shall be installed and maintained in a manner so as to comply with the 2011 Edition of the Virginia Work Area Protection Manual and the 2009 Edition of the Manual on Uniform Traffic Control Devices. See Special Traffic Conditions for additional information regarding hours of operation, lane closure and plan submittals. In addition, the contractor shall submit a traffic control plan for acceptance by the Permits Office before commencing work in the right-of-way.

EROSION AND SEDIMENT CONTROL

1.1 MEASUREMENT AND PAYMENT
Section 303 of the HRPDC Specifications is amended to include the following:
Erosion and Sediment Control will not be measured and paid for separately. Unless individual erosion control devices are specifically identified in the bid form, all erosion and sediment control measures required in the Virginia Erosion and Sediment Control Handbook shall be considered incidental.

REMOVE, RELOCATE, OR MODIFY EXISTING

1.1 DESCRIPTION
Miscellaneous existing traffic control items are to be relocated, modified, or removed as called for on the plans and in accordance with the specifications provided below.

1.2 MATERIALS
All existing signal equipment, as noted on the Plans, shall be removed and salvaged. Items to be salvaged shall include all signal heads, signs not to be reused, and mounting hardware. Salvaged items shall be delivered to the City of Newport News Traffic Operations Center at 513 Oyster Point Road upon completion of the signal work.

The Contractor shall be responsible for removal and disposal of existing traffic signal poles, span wire, conductor cables, junction boxes (unless otherwise identified to remain in place), and signal pole foundation to 24 inches below final grade.

1.3 PROCEDURES

Remove Existing Median
The Contractor shall demolish and remove the existing median within the limits denoted on the Plans. Saw cut curb at the limits of median removal to provide a clean break between the existing median.

Demolish and remove existing curb, soil, concrete and other materials to provide adequate depth to install new asphalt pavement section as shown in the Plans.

Install radial CG-2 curb to provide a new end cap to the existing median as shown in the Plans.

Removal of Existing Traffic Control Equipment and Supports
Where the removal requires excavation, the excavated areas (unless to be used as areas for other installations) shall be backfilled, compacted and leveled, so as to form a smooth contour, uniform in density and surface cover with adjacent ground areas.

Where the removal operations require the removal or disturbance of overlying pavement, curb, grass or sidewalk, such pavement, etcetera shall be removed in a workmanlike manner and subsequently replaced in kind (or equivalent) in accordance with these Specifications.
Electronic equipment to be removed shall be removed, handled, and transported with all due care. Any damage to such equipment caused by negligence of the Contractor's operations shall be corrected at his expense regardless of whether the damage occurs before or after removal of the equipment.

The removal of all electronic equipment shall include removal of all attaching devices and all other devices and auxiliaries related to the electronic unit, which are not required to remain in place for use with replacing equipment.

All removals shall be in such a manner that damage or disturbance will not occur to adjacent property, utilities, or other equipment.

Existing traffic signal installations are not to be removed until the new installations are in place and operating or the Contractor has provided Engineer-approved temporary traffic control or as specified under the provisions of the Specifications or the Special Provisions.

**Relocate Existing Over Height Vehicle Detection (OHVD) Cabinet System Equipment**

The Contractor shall relocate the existing Over Height Vehicle Detection (OHVD) System from the existing traffic signal cabinet into the proposed traffic signal cabinet. Verify/test and document proper system operations before relocation of required equipment. Notify the Engineer of any malfunctioning equipment and cease related relocation activities. The existing detector equipment and lead-in cables on the existing warning sign assemblies to the south of the intersection shall not be modified or damaged during construction.

Prior to relocation of the system cables, install the proposed conduit between the existing junction box and proposed traffic signal cabinet foundation as noted on the Plans.

The Contractor shall notify the Engineer 48 hours prior to the relocation of peripheral equipment within the existing traffic signal cabinet to the proposed traffic signal cabinet. Once authorized, the Contractor shall disconnect all OHVD system detector lead-in cables routed into the cabinet from existing termination panels and retract all lead-in cables to the adjacent junction box. Once work has begun, all system relocation activities must be complete within 48 hours unless otherwise authorized by the Engineer in writing.

Route the lead-in cables into the new traffic signal cabinet. Relocate all detector cards, relay switches, contact closures, and related equipment from the existing traffic signal cabinet into the proposed traffic signal cabinet. Integrate the OHVD system in kind. Test and document that proper system operations have been restored.

Coordinate with the Engineer for proper operation, configuration, and testing of the system with the traffic signal controller and Citywide traffic signal communications network.
Any equipment damaged during construction shall be repaired or replaced at the Contractor’s expense and at the direction of the Engineer.

**Relocate Existing Wireless Magnetometer Detection Cabinet System Equipment**

The Contractor shall relocate the existing Wireless Magnetometer Detection System from the existing traffic signal cabinet into the proposed traffic signal cabinet. Detectors are currently used for providing traffic data directly to the local signal controller as well as across the network to the central system. Verify and document proper system operations before relocation of required equipment. Notify the Engineer of any malfunctioning equipment and cease related relocation activities. The existing detector equipment and lead-in cables on the pedestal pole adjacent to the existing signal cabinet shall not be modified or damaged during construction.

Prior to relocation of the system cables, install the proposed conduit between the existing junction box and proposed traffic signal cabinet foundation as noted on the Plans.

The Contractor shall notify the Engineer 48 hours prior to the relocation of peripheral equipment within the existing traffic signal cabinet to the proposed traffic signal cabinet. Once authorized, the Contractor shall disconnect all detector lead-in cables routed into the cabinet from existing termination panels and retract all lead-in cables to the adjacent junction box. Once work has begun, all system relocation activities must be complete within 48 hours unless otherwise authorized by the Engineer in writing.

Route the lead-in cables into the new traffic signal cabinet. Relocate all detector cards, relay switches, contact closures, and related equipment from the existing traffic signal cabinet into the proposed traffic signal cabinet. Integrate the system in kind. Test and document that proper system operations have been restored.

Coordinate with the Engineer for proper operation, configuration, and testing of the system with the traffic signal controller and Citywide traffic signal communications network.

Any equipment damaged during construction shall be repaired or replaced at the Contractor’s expense and at the direction of the Engineer.

**Relocate Existing Communications Equipment**

The Contractor shall relocate the existing Citywide traffic signal communications network trunk fiber optic cable from the existing City maintained utility pole to the proposed Dominion Virginia Power (DVP) utility pole (identified as pole NO124 FK75 in the Plans). Existing City maintained utility pole to be removed after completion of all project activities as outlined in the Plans and the Remove, Relocate, or Modify Existing specification. Install relocated trunk cable on new messenger cable between existing/proposed poles (see Fiber Optic Cable specification below for aerial installation guidelines). Remove and dispose of existing fiber optic drop cable from
Traffic Signal Mast Arm Conversion at the Intersection of Warwick Boulevard and 75th Street

existing traffic signal cabinet, metal conduit riser assembly, and splice enclosure. Verify and document proper system communications before removal of drop cable and relocation of peripheral equipment. Notify the Engineer of any malfunctioning communications and cease related relocation activities.

Install new fiber optic drop cable (measured and paid for separately under Fiber Optic Cable specification below) in new riser with heat shrink. Route new fiber optic drop cable into proposed traffic signal cabinet. Prior to installation of the proposed fiber optic drop cable, install the proposed conduit between the existing junction box and proposed traffic signal cabinet foundation and between the existing junction box and proposed DVP pole as noted on the Plans.

The Contractor shall notify the Engineer 48 hours prior to the relocation of communications equipment within the existing traffic signal cabinet to the proposed traffic signal cabinet. Once authorized, the Contractor shall label all fiber terminations and patching of fiber optic strands from the termination panel to the Ethernet switch. Once labeled, remove existing drop cable from the existing cabinet, riser, and splice enclosure. Once work has begun, all communications relocation activities must be complete within 48 hours unless otherwise authorized by the Engineer in writing.

Contractor shall not violate the minimum bend radius of the cable at any time. Slack cable for the relocation of existing trunk fiber cable shall be obtained from the stored cable in the existing cable storage racks. Remove sufficient cable to relocate the trunk cable to the proposed DVP pole. Reuse or install new cable attachment hardware to the proposed DVP pole at a minimum height of 20 feet or six inches below the lowest utility, whichever is higher (not to exceed 25’ 0”). Do not adjust the existing attachment height of the trunk cable on existing utility poles. Lash relocated trunk cable to new messenger cable per the guidelines in the Fiber Optic Cable specification below.

Relocate the Ethernet switch, termination panel, patch cables, and associated communications equipment from the existing traffic signal cabinet into the proposed traffic signal cabinet. Splice the fan out module strands from the new fiber optic drop cable to the relocated termination panel according to the original configuration. Integrate the communications in kind. Test and document that proper system operations have been restored.

Coordinate with the Engineer for proper configuration and testing of the communications with the traffic signal controller and Citywide traffic signal communications network.

Any equipment damaged during construction shall be repaired or replaced at the Contractor’s expense and at the direction of the Engineer.
1.4 MEASUREMENT AND PAYMENT

Remove Existing Median will be measured and paid per square yard (SY) of removed concrete median, grass median, or curbed shoulder area. The unit price shall include the removal and disposal of all concrete curb, soil, grass, gutter, and concrete contained within the median area; landscaping, seeding/fertilizing, and other items contained within the median area.

Removal of Existing Traffic Control Equipment and Supports will be measured and paid for as a lump sum (LS) per intersection. The lump sum price includes but is not limited to the removal and disposal of traffic signal poles, riser assemblies, guy assemblies and anchorages, span wire, conductor cables, junction boxes (unless otherwise identified to remain in place), and signal pole foundation to 24 inches below final grade. The price also includes the removal and salvage of existing signal heads, signs not to be reused and mounting hardware. Separate payment for landscape repair, seeding/fertilizing, or sodding will not be made under this item and is considered incidental. Payment for concrete repair will be made according to Section 502 of the HRPDC Specifications.

Remove and Relocate Existing Sign Panel will be measured in units of each (EA) sign panel removed and relocated. The unit price shall include all labor, tools, materials and equipment, and shall be full compensation for proper removal and relocation. No separate measurement or payment will be made for additional hardware or brackets required to install the sign panel on the proposed mounting surface.

Remove and Dispose Existing Sign Post will be measured in units of each (EA) sign post removed and disposed. The unit price shall include all labor, tools, materials and equipment, and shall be full compensation for proper removal and disposal of existing sign post, anchor sleeve, post base, and existing post foundation. The unit price shall also include restoration of disturbed area to match existing grade, surface cover, and surrounding conditions.

Relocate Existing Over Height Vehicle Detection (OHVD) System will be measured and paid for as a lump sum (LS). The unit price shall include all labor, tools, materials and equipment, testing, and shall be full compensation for proper relocation of system equipment. The Contractor is responsible for the replacement of any system equipment or cabling damaged during construction at his own expense. Payment shall also include any necessary coordination with City staff to complete the testing and integration of the system with the traffic signal cabinet and controller.

Relocate Existing Wireless Magnetometer Detection System will be measured and paid for as a lump sum (LS). The unit price shall include all labor, tools, materials and equipment, testing, and shall be full compensation for proper relocation of system equipment. The Contractor is responsible for the replacement of any system equipment or cabling damaged during construction at his own expense. Payment shall also include any necessary coordination with City staff to complete the testing and integration of the system with the traffic signal cabinet and controller.
**Relocate Existing Communications Equipment** will be measured and paid for as a lump sum (LS). The unit price shall include all labor, tools, materials and equipment, testing, and shall be full compensation for proper relocation of communications cabling and equipment. Removal and disposal of existing drop cable, aerial cable attachment hardware, messenger cable, cable storage racks, cable lashing materials and equipment, metal conduit riser assembly, fittings, heat shrink materials, clamps, and attachment hardware shall be considered incidental to the cost of relocating existing communications equipment. The Contractor is responsible for the replacement of any communications equipment or fiber optic cable damaged during construction at his own expense. Payment shall also include any necessary coordination with City staff to complete the testing and integration of the fiber optic cable with the traffic signal cabinet and controller.

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<tr>
<td>Remove and Relocate Existing Sign Panel</td>
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<tr>
<td>Relocate Existing Communications Equipment</td>
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**CONDUIT**

1.1 **ELECTRICAL ITEMS**

Section 700.02 (e) of the 2007 VDOT Road and Bridge Specifications is amended to include the following:

Provide junction box covers with standard Traffic logos, pull slots, and stainless steel pins. Tracer wire shall meet the requirements of #8 AWG bare copper conductor cables.

1.2 **MATERIALS**

Section 700.02 of the 2007 VDOT Road and Bridge Specifications is amended to include the following:

(m) Conduit plugs, caps, or sealing fittings for sealing empty conduit and occupied conduit shall be durable and easily removable and reusable and produce a watertight seal. Plugs, caps, and sealing fittings shall be designed for the diameter of the conduit and cable, shall cause no damage to the cable when installed, and shall have a rope tie on the inside end for connection of a pull
rope. Plugs, caps, or sealing fittings used for fiber optic conduit shall provide a watertight and airtight seal of at least 138 kPa. Plugs that seal conduits containing fiber optic cable shall be of the split design to allow installation and removal around in-place cables. Plugs, caps, or sealing fittings shall be approved by the Engineer.

(o) Grout and sealant material must be waterproof and anti-corrosive and be approved by the Engineer. Silicone sealant must be waterproof and be approved by the Engineer.

(q) Replacement of other special pavement treatments or landscaping required to restore locations to preconstruction condition shall be the same materials of the damaged or modified items.

1.3 PROCEDURES
Section 700.04 of the 2007 VDOT Road and Bridge Specifications is amended to include the following:

Install the junction boxes flush with finished grade. Do not install sealant compound between junction boxes and covers. All final junction box locations in sidewalk or pavers shall be approved by the Engineer.

At certain locations shown in the Plans, reuse existing junction boxes. Precaution shall be taken to prevent damage to the existing conduit or cables. At locations where a new junction box or new conduit is to be connected to an existing junction box, use method to enter existing junction box as approved by the Engineer. Do not damage existing junction box or existing junction box contents. Junction boxes or cable damaged shall be replaced, or repaired with the approval of the Engineer, at the Contractor’s expense.

The Contractor shall field locate and install each junction box that is located in existing sidewalk such that no more than one (1) section of sidewalk will require replacement at each proposed junction box location. Measurement and payment of hydraulic cement concrete sidewalk shall be in accordance with Section 502 of the HRPDC Specifications. Additional damaged sections of sidewalk shall be repaired/replaced at the Contractor's expense. The locations of all proposed junction boxes are to be field verified by the Project Engineer prior to installation.

The Contractor shall field locate and install each junction box that is located within existing/proposed sidewalk, such that the collar of the junction box is flush with the concrete.

Section 700.04 (h) Conduit Systems of the 2007 VDOT Road and Bridge Specifications is amended to include the following:

When obstructions are encountered during installation and conduit cannot be economically located elsewhere, the obstruction shall be bypassed by deflecting the conduit at a rate of at least 10:1. Minimum 4’ radius, maximum 90° bends may be used to avoid obstructions at locations where 10:1 deflection is not possible, provided the
least degree bend needed to clear the obstruction is used. Flexible bends may be utilized when needed to facilitate proper location of the conduit, only at locations approved by the Engineer. Conduit runs between any 2 junction boxes shall not employ more than 4 bends or exceed an angular sum of 270°.

In certain cases the Contractor may use an alternate material and method of installation between trenching and plowing based on existing field conduits and preferences. Obtain approval before proceeding.

**General**
Install HDPE conduit for all underground runs.

Install pull rope in all conduit systems in accordance with VDOT Specifications.

Install longitudinal runs of conduit a minimum of 1 foot from back of curb or 6 feet from edge of pavement in the absence of curb.

Maintain a minimum trench depth of 30 inches below finished grade or 6 inches below roadway subgrade, whichever is deeper. Maintain a separation from existing utilities of approximately 18” unless otherwise approved by the Engineer.

Extend the ends of the conduits such that upon completion of the installation the conduits will extend a minimum of 2 inches above concrete surfaces and 4 inches above crushed stone bases.

Upon completion, restore surface to like-original condition within seven calendar days of occurrence of work. Remove all rock and debris from backfill material. Remove excess material from site and compact area. Back fill with excavated material and compact to 95% of original density.

Back fill trench at locations along the trench path where non-movable objects, such as rocks and boulders, cannot be avoided. The purpose of the backfill is to provide a gradual change in elevation of the trench, so that excessive bending and stress will not be transferred to conduits once underground conduit system is installed.

After installation of conduits and upon completion of tamping and backfilling, perform a mandrel test on each conduit to ensure no conduit has been damaged. Furnish a non-metallic mandrel having a diameter of approximately 50% of the inside diameter of the conduit in which it is to be pulled through. If damage has occurred, replace the entire length of conduit. Ensure pull rope is re-installed.

**Unpaved Trenching**
Install conduit in all unpaved areas. Rake smooth the top 1 1/2 inches seed with same type of grass as surrounding area. Finish unpaved areas flush with surrounding natural ground.
(a) **Pre-Approvals and Minimum Depth Requirements**

Obtain approval before beginning drilling operations.

At all points where HDPE conduit will traverse under roadways, driveways, or sidewalks, maintain a minimum depth of 4 feet or 8 times the back reamer’s diameter, whichever is deeper. For an installation that runs parallel to a controlled access area or entrance/exit ramps maintain a minimum depth of 30 inches below finished grade. Maintain a minimum clearance of 30 inches below finished grade when crossing ditch lines. For the following structures, the minimum clearance requirements are:

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<th>Man-made Structure</th>
<th>Minimum Clearance Requirement</th>
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| Bridge foundation                   | 5’ horizontal & 4’ vertical (clearances greater than minimum horizontal should continue to use the 4V:5H ratio, i.e., 10’ horizontal should be no deeper than 8’ |}
| Drainage pipes less than 60”        | 1’ above or below [while maintaining a minimum depth of 30” below grade]                      |
| Drainage pipes greater than 60”     | 1’ above or 4’ below [while maintaining a minimum depth of 30” below grade]                   |
| Box Culverts                        | 1’ above or 4’ below [while maintaining a minimum depth of 30” below grade]                   |
| Slope protection                    | 2’ below                                                                                        |
| Slope protection foundation footing | 5’ below                                                                                        |

Guarantee the drill rig operator and digital walkover locating system operator are factory-trained to operate the make and model of equipment provided and have a minimum of one year experience operating the make and model of drill rig. Submit documentation of the operators’ training and experience for review at least two weeks before start of directional drilling operations.

Provide a means of collecting and containing drilling fluid/slurry that returns to the surface such as a slurry pit. Provide measures to prevent drilling fluids from entering drainage ditches and storm sewer systems. Prevent drilling fluid/slurry from accumulating on or flowing onto pedestrian walkways, driveways, and streets. Immediately remove all drilling fluids/slurry that are accidentally spilled.

(b) **Directional Drill Operations**

Provide grounding for the drill rig in accordance with the manufacturer’s recommendations.
Place excavated material near the top of the working pit and dispose of properly. Backfill pits and trenches to facilitate drilling operations immediately after drilling is completed.

Use drill head suitable for type of material being drilled and sized no more than 2 inches larger than the outer diameter of the conduit. Direct drill to obtain proper depth and desired destination. Pressure grout with an approved bentonite/polymer slurry mixture to fill all voids. Do not jet alone or wet bore with water.

During drilling operation, locate drill head every 10 feet along drill path and before traversing underground utilities or structures. Use digital walkover locating system to track drill head during directional drilling operation and/or perform test holes as outlined below if requested by the Engineer. Ensure locating system is capable of determining pitch, roll, heading, depth, and horizontal position of the drill head at any point.

Once drill head has reached final location, remove head, and install back reamer of appropriate size (no more than 2 inches larger than outer diameter of conduits) to simultaneously facilitate back reaming of drill hole and installation of conduit. Back reamer is sized larger than actual conduits to ensure conduits are not adversely subjected to deviations caused by the original drill operation and are as straight as practical in their final position.

The intent of these Specifications is to limit the diameter of the actual drill shaft/hole so that it is no more than 2 inches larger than the conduit outer diameter. The 2-inch larger diameter may be accomplished during the original bore or during the back reaming/conduit installation process.

Once installation of conduit has started, continue installation without interruption so as to prevent conduit from becoming firmly set. Apply bentonite/polymer slurry mixture during conduit installation.

Upon completion of conduit installation, perform a mandrel test on conduit system to ensure conduit has not been damaged. Furnish non-metallic mandrel with a diameter of approximately 50% of the inside diameter of the conduit in which it is to be pulled through. If damage has occurred, replace the entire length of conduit and ensure that pull line is re-installed.

(c) Drilling Fluids
Use lubrication for subsequent removal of material and immediate installation of the conduit. The use of water and other fluids in connection with directional drilling operations will be permitted only to the extent necessary to lubricate cuttings. Do not jet alone or wet bore with water. Use drilling fluid/slurry consisting of at least 10 percent high-grade bentonite/polymer slurry to consolidate excavated material and seal drill hole walls.
Transport waste drilling fluid/slurry from site and dispose of in a method that complies with local, state and federal laws and regulations. When drilling below CSX railroad crossings, the Contractor shall adhere to the requirements of the Frac-Out Contingency Plan provided with the Bid Documents.

(d) Conduit Splicing
With prior approval, install a junction box at locations where splicing or coupling of conduit is necessary. Otherwise, splicing or joining of HDPE conduit is prohibited.

(e) Reuse of Existing Conduit
Prior to use of existing conduit, the Contractor shall be responsible for verifying the usability of the conduit for the size cable(s) called for in the Plans. For any locations where new conductors are to be installed where existing cable is present, the Contractor shall not damage nor affect the usability of performance of the existing cable.

1.4 MEASUREMENT AND PAYMENT
Section 700.05 of the 2007 VDOT Road and Bridge Specifications is amended as follows:

**Metal Conduit** *(size)* will be measured in horizontal linear feet of trenching for underground conduit installation of each type furnished, installed, and accepted. The bid price shall include clearing and grubbing, earthwork/excavating, encasing, installing metal conduit, clamps, attachment hardware, conduit bodies, backfilling, locator tape, compacting, disposal of all surplus and unsuitable materials and site restoration. The unit price shall be full compensation for furnishing all labor, tools, material, equipment and incidentals necessary to complete the work. Measurement will be along the approximate centerline of the conduit system. No payment will be made for restoring surface to like-original conditions.

**Unpaved Trenching** *(qty)(size)* **PVC Conduit** will be measured in horizontal linear feet of trenching for underground conduit installation of each type furnished, installed, and accepted. The bid price shall include clearing and grubbing, earthwork/excavating, encasing, installing HDPE conduit, backfilling, locator tape, compacting, disposal of all surplus and unsuitable materials and site restoration. The unit price shall be full compensation for furnishing all labor, tools, material, equipment and incidentals necessary to complete the work. Measurement will be along the approximate centerline of the conduit system. No payment will be made for restoring surface to like-original conditions.

**Directional Drill** *(qty)(size)* **HDPE Conduit** will be measured in horizontal linear feet of directional drill for underground conduit installation furnished, installed, and accepted. Measurement will be along the approximate centerline of the conduit system. Payment will be in linear feet.

No measurement will be made of vertical segments, sealing devices, backfill, graded stone, paved materials, miscellaneous fittings, pull lines, marker tape, mechanical
sealing devices, duct plugs, conduit organizers, and seeding and mulching as these will be considered incidental to conduit installation.

**Electrical Service (type)** will be measured in units of each and will be paid for at the contract unit price per each. This price shall include service poles, safety switches or breaker boxes, breakers, service entrance conductor cables from the utility company’s service box, conductors to the safety switch and circuit breaker box, conduits and fittings on poles and steel supports, conduit straps or clamps, meter base, service entrance heads, thimbleye bolts, steel supports, wireway, junction boxes for grounding electrode and utility service, excavation, concrete, and pickup and installation of meter base and current transformer in the traffic signal cabinet.

Payment will be made under:

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<th>Pay Unit</th>
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<td>Directional Drill (1)(2”) HDPE Conduit</td>
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**CONCRETE ITEMS**

1.1 **DESCRIPTION**

Section 502 of the HRPDC Specifications is revised to include the following for the construction of curb cut (sidewalk) ramps for the proposed intersection improvements at Warwick Boulevard and 75th Street.

1.2 **MATERIALS**

Subsection 2.2 Individual Item Requirements, Part E. Curb Cut Ramp is amended to include the following:

Detectable warning device tiles that shall be installed in accordance with the manufacturer’s specifications and the Contract Documents and shall be considered incidental to the installation of the curb cut ramp.

1.3 **MEASUREMENT AND PAYMENT**

Subsection 3, Part J. Curb Cut Ramps is revised to include the following:

**Sidewalk Ramp** will be measured in units of each type of ramp furnished and installed and will be paid for at the contract unit price per each. The contract unit price shall include all removal, disposal, replacement, and/or installation of concrete sections,
curb, curb and gutter, and associated materials, seeding/fertilizing, sodding, cut, fill, grading, and saw cutting. Unit price shall also include furnishing and installing truncated dome detectable warning device tiles. The depth of concrete shall be 7 inches for the entire ramp area. The type of VDOT standard sidewalk ramp shall be installed in accordance with the information and details provided in the 2008 VDOT Road and Bridge Standards. Where sufficient space to install the ramp is not available, the Contractor shall submit a shop drawing of the proposed ramp solution that meets or exceeds ADA requirements to the Engineer for review and approval at least 14 days prior to construction. Any required adjustments to the elevation of junction boxes, manhole covers, and other utilities such that they are flush with the finished ramp grade, additional required subgrade materials, removal of existing materials, and any other items as directed by the Engineer shall be considered incidental to the unit price for sidewalk ramps.

Price shall also include compaction of soil, fill material and bedding material. Compaction of soil shall meet maximum density requirements, in accordance with ASTM D-1557. Under sidewalk ramps, compact top 12 inches of subgrade and each layer of fill or backfill material at 95 percent maximum density. Fill or backfill material shall be placed in lifts no greater than six inches.

**Hydraulic Cement Concrete Sidewalk (thickness)** will be measured and paid in units of square yard of the prescribed sidewalk and/or median surface treatment finish thickness. The contract unit price shall include all removal and disposal of existing concrete sections and associated materials, seeding/fertilizing, sodding, cut, fill, clearing and grubbing, grading, curb, curb and gutter, saw cutting, adjustments to the elevations of junction boxes, manhole covers, and other utilities such that they are flush with the finished sidewalk grade, additional required subgrade materials, removal of existing materials, and any other items as directed by the Engineer.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalk Ramp Type A</td>
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</tr>
<tr>
<td>Sidewalk Ramp Type B</td>
<td>EA</td>
</tr>
<tr>
<td>Hydraulic Cement Concrete Sidewalk (4”)</td>
<td>SY</td>
</tr>
</tbody>
</table>

**TRAFFIC SIGNAL CONTROLLER AND CABINET**

1.1 DESCRIPTION

Install NEMA TS2, Type 1 traffic signal controller, NEMA TS2 cabinet, and associated hardware to be furnished by the City. Upon actuation of the new traffic signal, the Contractor shall remove and salvage existing traffic signal controller, cabinet, and associated hardware to the City.

1.2 MATERIALS

The required traffic signal controller, traffic signal cabinet, and associated hardware, including load switches, MMU, and BIU, will be furnished by the City of Newport
Traffic Signal Mast Arm Conversion at the Intersection of Warwick Boulevard and 75th Street

News. All other required cabinet equipment and/or devices shall be furnished and installed by the Contractor. Any items not specifically enumerated in the bid form (e.g., thermal detection, emergency vehicle preemption, conductor cable) shall be considered incidental to the installation of the traffic signal controller and cabinet.

1.3 PROCEDURES
Furnish all foundation mounting hardware, anchor bolts, grounding systems, and all other necessary hardware. Provide a continuous waterproof seal with an approved sealant around the exterior of the signal cabinet base once secured in place on the new cabinet foundation.

Comply with 2007 VDOT Road and Bridge Specifications Subsections 703.03 (a), 703.03 (d), and 703.03 (i).

Locate new cabinets so as not to obstruct sight distance of vehicles turning on red.

Install controller, cabinet, video detection systems and hardware that provide required phasing, color sequence, flash sequence, interconnection, red light running indicator systems and hardware, load switches, monitor, BIUs, and emergency vehicle clearance and preemption.

Install coordinated signal system timing data and parameters furnished by the Engineer on the controller where required.

Provide serial number and cabinet model number for each new controller and controller cabinet installed.

Activate controllers with proposed phasing and timing.

Prior to deactivation of the existing traffic signal, the Contractor shall notify the Engineer of any malfunctioning equipment to be salvaged. Upon actuation of the new traffic signal, the Contractor shall remove the existing traffic signal cabinet, controller, and associated equipment. All equipment shall be delivered to the Traffic Operations Center. Any equipment damaged by the Contractor not deemed as malfunctioning by the Engineer shall be replaced at the Contractor’s expense.

1.4 MEASUREMENT AND PAYMENT
Install City Standard Traffic Signal Cabinet Assembly will be measured in units of each and will be paid for at the contract unit price per each. This price shall include pickup and transportation of the equipment furnished by the City to the project site as well as the removal and salvage of the existing signal cabinet and delivery back to the City. Construction of the cabinet foundation will be measured separately; however, installation of the traffic signal cabinet, including necessary attachment hardware, sealant, fasteners, labor and equipment, will be considered incidental and not measured or paid for separately. Also included in the unit cost is the programming of signal timing data, timing implementation, configuration of back panels, power panels,
detector panels, auxiliary panels, police panels, thermostatically controlled fan units in
the cabinet with a vent, flashers, local flasher switches, radio frequency interference
filters, signal switches, main switches, police hand controls, malfunction management
units (MMUs), flasher relay assemblies, power relays, signal control assemblies, lamp
receptacles and ground fault convenience receptacles, circuit diagrams, flexible cables,
grounding systems, transient protection devices, and fittings.

No measurement or payment will be made of testing cabinets and controllers, as such
work will be considered incidental to furnishing and installing controllers with cabinets.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install City Standard Traffic Signal Cabinet Assembly</td>
<td>EA</td>
</tr>
</tbody>
</table>

**UPS AND SUPPLEMENTAL CABINET**

1.1 DESCRIPTION

These specifications cover general construction items, methods, and procedures
common to installing UPS battery backup equipment in a supplemental cabinet at
traffic signals.

1.2 MATERIALS

The UPS battery backup shall meet the following requirements:

- 1000 watts (minimum) of full control run time for four (4) hours (minimum)
- -47° C to 74° C (-40° F to 165° F) operating temperature range
- BBS bypass required
- Input voltage range: 85 to 175 VAC
- Output voltage:
  - Regulation: +/- 10% over full input voltage range
  - Waveform: Pure sine wave
  - Typical efficiency: >98%
  - Typical transfer time: <25ms
- Features:
  - Automatic voltage regulation
  - Three user inputs: self-test, alarm, shutdown
  - Logs historical events with time/date stamping

The supplemental cabinet shall meet the following requirements:

- Side mounted design, shall be attached to the traffic control cabinet in at least
two (2) points and be provided with an internal cabinet-to-cabinet wiring path.
- Doors: Hinges shall be stainless steel and continuous. Shall have a doorstop
  arrangement that will allow it to be firmly positioned at 90 and 135 degrees, +/-
  10 degrees. The locking system for cabinets shall be a three-point draw roller
  system. Rollers shall be fabricated from nylon with a diameter of at least 8/10
inch. The door opening shall be double flanged on all four sides. The door shall have a screened and louvered design to prevent rain entry, with a standard size furnace vent filter. The filter tray shall be sized to house and secure the filter in place. The screen shall be constructed from at least 0.0310-inch aluminum with 1/8-inch diameter openings positioned on 3/16 inch staggered centers. The screen shall be placed on the inlet side of the filter and held in place by the filter or silicone adhesive.

- Ventilation shall be louvers top and bottom with encapsulated bug screens, cleanable filters and a 100cfm fan to completely exchange air 25-time minimum per minute.
- Interior: Shall be of sufficient size to provide adequate ventilation of the equipment housed therein. Shall contain at least two adjustable shelves or equivalent supports, with enough space to hold batteries, wiring and related equipment. Shelves and vertical mounting channels shall be heavy duty and have sufficient strength to hold the batteries without deforming, bending or breaking. Wiring panels and terminal blocks shall be neatly finished and clearly and permanently marked. Conductors shall be neatly arranged and bundled in groups with cable ties. The bundled conductors shall not obstruct access to other circuits and terminals in the cabinet. A fluorescent lamp receptacle, fluorescent lamp and an ON/OFF door switch shall be located in the cabinet so that it provides unobstructed illumination of the interior of the cabinet. A momentary switch operated by the door shall be connected in-line for operation of the lamp. The fluorescent lamp and switches shall be AC operated from the same line output of the Manual Bypass Switch that supplies power to the Traffic Signal Control Cabinet. Proper over current protection shall be provided for the fluorescent lamp circuit.

- Wiring: Wiring from the UPS to the traffic signal controller cabinet shall be accomplished via an adequately sized and edge-protected opening in the side of the cabinet attached to the traffic control cabinet such that all wiring power and alarm wiring may be passed into the UPS cabinet.

- Cabinet shall have on it an external plug that will permit a generator to be plugged in. Plug shall be a Hubbell HBL303SS or approved equivalent.

1.3 PROCEDURES
Installation of materials shall be accomplished in accordance with the manufacturer’s instructions except when otherwise noted.

1.4 MEASUREMENT FOR PAYMENT
Furnish and Install UPS and Supplemental Cabinet will be measured in units of each and will be paid at the contract unit price per each assembly furnished and installed. This price shall include all hardware, wiring, connections, equipment, and supplies necessary to install UPS battery backup and supplemental cabinet to the proposed traffic signal cabinet.

Payment will be made under:
TRAFFIC CONTROL DEVICES

1.1 DESCRIPTION
Traffic sign items shall conform to the requirements of VDOT Section 701, including all revisions.

Traffic signal items shall conform to the requirements of VDOT Section 703, including all revisions, with the following modifications.

Concrete foundations shall conform to the requirements of HRPDC Section 700, including all revisions, with the following modifications.

Junction boxes shall conform to the requirements of HRPDC Section 700, including all revisions, with the following modifications.

1.2 MATERIALS
All street name signs will be furnished by the City of Newport News. The Contractor is responsible for furnishing all other signs as prescribed in the Plans. The Contractor is responsible for installation of all signs, including street name signs, and shall furnish all brackets and hardware, labor, tools, equipment, and any other items or materials necessary to provide a complete sign assembly.

Section 703.02 (e) Signal Heads of the 2007 VDOT Road and Bridge Specifications is amended as follows:

In the second paragraph, revise the first sentence to “Polycarbonate signal head sections shall be used...” and remove the second sentence.

1.3 PROCEDURES
Section 703.03 of the 2007 VDOT Road and Bridge Specifications is amended to include the following:

(e) Installing Signal Heads – The Contractor shall furnish all brackets and hardware, labor, tools, equipment, and any other items or materials necessary to provide a complete traffic signal and pedestrian signal head assembly. VDOT Standard SM-3 hanger assemblies shall be used for all mast arm mounted signal heads and VDOT Standard SMB-3 hanger assemblies shall be used for all pole mounted traffic signal and pedestrian signal heads.

1.4 MEASUREMENT AND PAYMENT
Section 700.05 of the 2007 VDOT Road and Bridge Specifications is amended to include the following:
Sign Post – where called for on the Plans, furnish and install sign post STP-1 of the prescribed post size according to the sign post foundation details provided in VDOT Standard Detail 1321.11. The sign post foundation, anchor sleeve, and other materials, tools, equipment, and labor required to install the sign post shall be considered incidental to the cost of the sign post. For wood post installations, drill required breakaway holes at the base of the post.

Section 701.04 of the 2007 VDOT Road and Bridge Specifications is amended to include the following:

Sign Panel – the unit price shall include the cost to furnish and install all brackets and hardware, labor, tools, equipment, and any other items or materials necessary to provide a complete sign assembly installed in place as prescribed in the Plans. No separate measurement and payment will be made for the installation of street name signs furnished by the City of Newport News and shall be considered incidental to the cost of all other sign panel required for the project.

Section 703.04 of the 2007 VDOT Road and Bridge Specifications is amended as follows:

Traffic Signal Head will be measured in units of each and will be paid for at the contract unit price per each signal head assembly furnished and installed. The unit price shall include the cost to furnish all brackets and hardware, LED indication modules, molded terminal blocks, visors, backplates, fittings, realignments, labor, tools, equipment, and any other items or materials necessary to provide a complete signal assembly installed in place as prescribed in the Plans.

Pedestrian Signal Head will be measured in units of each and will be paid for at the contract unit price per each furnished and installed. The unit price shall include the cost to furnish all brackets and hardware, LED indication modules, molded terminal blocks, visors, fittings, realignments, labor, tools, equipment, and any other items or materials necessary to provide a complete signal assembly installed in place as prescribed in the Plans.

Pedestrian Pushbutton will be measured in units of each and will be paid for at the contract unit price per each furnished and installed. The price shall include all brackets and hardware, labor, materials, and fittings necessary to properly install the Pedestrian Push Button (PPB) system. All pushbuttons shall consist of a powder coated aluminum body with stainless steel button (bulldog style). The color of the body of the pushbuttons bodies shall be yellow. The PPB System shall have both an audible tone and visual indication when the button has been depressed in compliance with Federal Americans with Disabilities Act (ADA) regulations. The PPB system shall utilize a piezo driven solid state momentary type switch that is NEMA TS-2 compliant. The PPB system is to be compatible with the existing City of Newport News traffic signal hardware.

Section 700 of the HRPDC Specifications is amended as follows:
Concrete Foundation, PF-2 (Signals) will be measured and paid for each PF-2 Concrete Pole Foundation furnished and installed. The price shall include concrete, reinforcing steel, bolts, conduits, excavation, backfilling, disposal of excess material, restoration of existing areas, and any items needed to properly install the foundation as per 2008 VDOT Road and Bridge Standards PF-2.

Junction Box (type) will be measured and paid for each junction box furnished and installed. The price shall include labor and materials necessary to install the junction box, the replacement of concrete or pavement disturbed including, but not limited to, sidewalks, driveways, road surface, median area, or curb and gutter sections and controlled fill and topsoil/seeding in disturbed unpaved areas, and any other items necessary to properly install the junction box as per 2008 VDOT Roads and Bridge Specifications.

Payment will be made under:

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<th>Pay Item</th>
<th>Pay Unit</th>
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<tr>
<td>Sign Post</td>
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<td>Sign Panel</td>
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<td>Traffic Signal Head (_-Section)</td>
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<tr>
<td>Pedestrian Signal Head</td>
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</tr>
<tr>
<td>Pedestrian Pushbutton</td>
<td>EA</td>
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<tr>
<td>Concrete Foundation, PF-2 (Signals)</td>
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<tr>
<td>Junction Box (JB-__)</td>
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</tr>
</tbody>
</table>

**FIBER OPTIC CABLE**

1.1 DESCRIPTION
Furnish and install single mode fiber-optic (SMFO) communications cable and pre-terminated drop cable assemblies with communications cable identification markers and all necessary hardware.

1.2 MATERIALS
**DROP CABLE ASSEMBLIES**
Furnish factory preassembled, factory-pret erminated and factory tested drop cable assemblies to provide communications links between splice enclosures and the L2 field Ethernet switches through interconnect modules mounted inside controller cabinets. Furnish drop cables containing a minimum of 12 individual fibers with one end of the drop cable (i.e., the equipment cabinet end) preterminated with a 12-fiber single mode (SM) ST OSP pigtail cable assembly (fan out module). Field termination and connectorization is prohibited.

Furnish drop cables that comply with RUS-CRF 1755.900 and have a minimum bend radius of 5 inches for a 12-fiber cable. Ensure drop cable has the same operating characteristics as the SMFO cable it is to be coupled with.
Provide length markings in sequential feet and within one percent of actual cable length. Ensure character height of markings is approximately 0.10".

Prior to fabrication of the drop cable assemblies, verify the length of drop cable needed for each location, including slack, to reach from termination point to termination point.

Factory test the completed drop cable assembly. Test the cable at 1310 and 1550 nm and ensure it does not exceed 0.5dB/km. Ensure attenuation loss for complete drop cable does not exceed a mean value of 1.5dB. Ensure fusion splice losses do not exceed 0.05 dB and connectors have a loss of 0.5 dB or less. If any fiber exceeds maximum allowable attenuation or if fiber-optic properties of the cable have been impaired, take appropriate actions up to, and including, replacement of the fiber-optic cable and retest. Submit factory test results for each drop cable assembly to the Engineer for review and approval.

1.3 PROCEDURES
Provide cable manufacturer’s attenuation and Optical Time Domain Reflectometer (OTDR) testing data for each reel of cable. Furnish durable labeled plots and electronic copies on a CD or DVD of test results for each fiber including engineering calculations demonstrating that OTDR test results meet or exceed the attenuation requirements and that optical properties of the cable have not been impaired. Clearly label each OTDR trace identifying a starting and ending point for all fibers being tested.

Furnish one hard copy of each of the OTDR trace results and electronic copies of all trace results on a CD or DVD, along with OTDR-compatible viewing software.

Install SMFO communications cable, communications cable identification markers and all necessary hardware.

Comply with manufacturer’s recommendations. Install communications cable in conduits as required to bring the fiber-optic cable into and, if necessary, out of each splice enclosure.

Take all precautions necessary to ensure cable is not damaged during storage, handling, and installation. Do not violate minimum bending radius of 20 times the radius of cable diameter or manufacturer’s recommendation, whichever is greater. Do not step on cable nor run over cable with vehicles or equipment. Do not pull cable over or around obstructions, or along the ground.

Determine lengths of cable necessary to reach from termination-point to termination-point. Install cable in continuous lengths between approved splicing facilities. Additionally, provide a sufficient amount of slack cable to allow for an additional 20 feet of cable to be present after removal of outer sheath for termination. Measure slack cable by extending cable straight out of equipment cabinet door. No splicing is permitted at any field cabinets.
Keep cable ends sealed at all times during installation to effectively prevent the ingress of moisture. Use approved heat shrink cable end cap. Do not use tape to seal cable ends.

Before installing cable, provide three copies of cable manufacturer’s recommended and maximum pulling tension to the Engineer. Do not exceed manufacturer’s recommended pulling tension. Use pulling grips containing a rotating swivel. Coil cable in a figure-8 configuration whenever cable is unreeled for subsequent pulling. Install fiber-optic cable in separate conduits; do not share conduits containing fiber-optic cable with other non-fiber-optic cable unless the Plans specify otherwise or the Engineer directs or approves otherwise.

**AERIAL INSTALLATION**

Double lash fiber-optic cable to messenger cable with one 360 degree spiral per foot. Use pole attachment hardware and roller guides with safety clips to install aerial run cable.

Maintain tension during the pulling process for aerial run cable by using an approved mechanical clutch (dynamometer) device. Do not allow cable to contact the ground or other obstructions between poles during installation. Do not use a motorized vehicle to generate cable pulling forces.

Use a cable suspension clamp when attaching cable tangent to a pole. Select and place cable blocks and corner blocks so as not to exceed the cable’s minimum bending radius. Do not pull cable across J-hooks.

Store 100 feet of slack fiber-optic cable over-head on all cable runs that are continuous without splices and are greater than 2,500 feet, and as shown on the Plans, or the amount shown on the Plans. This shall be for each fiber optic cable lashed to the messenger cable. Obtain approval for spare cable storage locations. Store spare fiber-optic cable on fiber-optic cable storage racks (snowshoes), which may be stackable. At aerial splice enclosures, store spare cable of each size. Locate spare cable storage in the middle of spans between termination points. Do not store spare fiber-optic cable over the roadway or driveways.

Install one communications cable identification marker within 36 inches of each pole attachment point and at locations where more than one cable originates or terminates. Maintain electrical continuity of messenger cable at all poles.

**INSTALLATION OF DROP CABLE**

Verify the length of drop cable needed, including slack, to reach from termination point to termination point.

Splice the free end of the drop cable into the fiber-optic trunk cable in a splice enclosure external to the cabinet.
At aerial splice enclosures, store 100 feet of slack cable on cable storage racks. At below ground splice enclosures, coil 50 feet of slack cable in manhole or junction box where enclosure is located.

At equipment cabinet end of drop cable, terminate all fibers by connecting the SMFO pigtails to the appropriate connectors on the connector panel of the interconnect module. Label all connectors, pigtails and the connector panel. At the splice enclosure end of the drop cable, cap off all unused fibers and label to correspond with the connector panel.

Using an OTDR, test the end-to-end connectivity of the drop cable from patch panel installed inside the signal or CCTV cabinet to the adjacent aggregation or field Ethernet switches upstream and downstream of this location. Comply with the OTDR testing and reporting requirements of the “Fiber-Optic Splice Centers” section of these Project Special Provisions when testing drop cable.

### 1.4 MEASUREMENT FOR PAYMENT

SMFO Drop cable (____-fiber) will be measured and paid as the actual linear feet of fiber-optic drop cable of each fiber count furnished, installed, and accepted. Measurement will be made by calculating the difference in length markings located on the outer jacket from the start of the run to the end of run for each run. Splice all fibers in the fiber-optic splice enclosure before determining the length measurement.

No separate measurement will be made for splicing and testing of the fiber-optic cable and SMFO jumpers as these will be considered incidental to the installation of the fiber-optic drop cable assemblies.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMFO Drop Cable (12-Fiber)</td>
<td>LF</td>
</tr>
</tbody>
</table>

### THERMAL DETECTION

#### 1.1 DESCRIPTION

These specifications cover the minimum physical requirements of a thermal detection system and the general construction items, methods, and procedures common to the installation of a video detection system at traffic signals.

#### 1.2 MATERIALS

Provide a video detection system based on the Traficon VIP 3D.2 unit or approved equivalent. The video detection system shall consist of the following:

- Single Slot Video Image Processing unit(s).
- Single Slot MPEG-4 Video system communications module.
- Thermal camera(s) with sunshield.
- Signal Mast Arm Sensor Bracket(s).
- Surge suppressor.
- Monitor.
- PIM card (Port Interface Module)
- All other necessary equipment for operation.

The thermal detection system shall be warranted against manufacturing defects in materials and workmanship for a period of two years from date of installation. The thermal detection supplier shall provide all documentation necessary to maintain and operate the VIP system.

Life expectancy of the thermal detection cameras and VIP boards shall be a minimum of five (5) years.

**Video Image Processor (VIP):**
The video processor shall be a Traficon VIP 3D.2 module. The Video Image Processor (VIP) shall be modular by design and housed in either a self-contained stand-alone unit or fit directly into NEMA TS1 & TS2 type racks. The VIP shall be interchangeable between a shelf or rack mount installation without replacing or modifying existing VIP units.

Supply one VIP 3D.2 card for every 2 cameras installed.

The VIP shall allow for 2 camera inputs and shall only occupy a single detector file slot. The VIP shall be 1.1” (w) x 4.5” (h) x 7” (l)

The system shall control from 1 to 4 VIP boards allowing for 1 to 8 image sensors.

The system shall be designed to operate reliably in the adverse environment of roadside cabinets and shall meet or exceed all NEMA TS1 and TS2.

Ambient operating temperature shall be from –34 to +74 degrees Centigrade at 0 to 95% relative humidity non-condensing.

The system shall utilize cabinet 24 VDC for rack mount installations or external 24 VDC for stand-alone shelf installations, and shall draw less than 2 amperes.

Surge ratings shall be set forth in the NEMA TS1 and TS2 specifications.

Serial communications shall be through an RS232 serial port. This port can be used for communications to a modem or laptop to upload/download detector configurations, count data and software upgrades. RS485 on the rear edge connector shall facilitate communications to other VIP boards.
Each VIP board shall have 4 opto-isolated open collector outputs. Twenty (20) additional outputs shall be available via the expansion port. An RJ-11 style port shall connect the VIP to the VIP expansion card.

Each VIP board shall allow for 20 digital inputs via the I/O Expansion port.

VIP expansion card shall allow for 2 or 4 outputs and shall occupy a single detector file slot.

The VIP shall have 20 presence detection zones and 4 data detection zones per camera.

Data zones shall collect and store vehicle counts, volume, speed, gap time, headway, occupancy, and classification. Data shall be time-stamped and stored onboard (non-volatile memory) in intervals from 1-60 minutes.

Data and event alarms are generated for: queue, inverse direction, speed drop, no video/bad video (image quality) communication error and other events.

Must be able to provide single or double loop emulation.

Presence hold time must have parameters that range from 10 to 600 seconds.

Each VIP board shall have error detection. An output contact will close if the video signal is bad or the VIP board is not functioning properly. A user defined quality level will automatically put the VIP into a recall state in cases of severe degraded visibility (i.e., fog, blizzard, etc.). Normal detection resumes when visibility improves above the user defined quality level.

Operator selectable recall shall be available via the VIP front panel. Holding the recall toggle switch for 5 seconds shall activate this function.

Operator shall be able to view each camera on a single VIP card by using the toggle switch on the VIP front panel.

The VIP board shall have 2 video inputs (RS-170 NTSC or CCIR composite video) and two video outputs (one on the front panel and one on the edge connector). The video inputs shall be though the VIP board’s edge connector.

The VIP board shall have a reset toggle switch on the front panel to reset video detectors to “learn” the roadway image. During “relearn”, selectable recall can be enabled or disabled for immediate operation. Learning time of video detectors shall be less than 5 minutes.

External surge suppression, independent of the VIP board shall separate the VIP from the image sensor.
The VIP board shall have separate light emitting diodes (LEDs) that indicate:

- **POWER**: Red to verify power supply.
- **I/O COMM**: Red to indicate communications to expansion boards.
- **VIDEO 1 & 2**: Red to verify the presence of video input 75 Ohm.
- **TX & RX**: Red to indicate communications via the serial port.
- **OUT1-OUT4**: Green if the corresponding detection group is active.

The VIP board shall also have a toggle switch for:

<table>
<thead>
<tr>
<th>VIDEO SELECT</th>
<th>Toggle between camera images.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECALL</td>
<td>Manually places call on detectors.</td>
</tr>
<tr>
<td>RESET</td>
<td>Manually resets detectors to “learn” background.</td>
</tr>
</tbody>
</table>

The video detection system shall be capable of being programmed locally with a handheld keypad. Keypad and monitor must be separate units. A PC mouse will not be allowed. The monitor is to have a 9 inch, LCD color screen.

The VIP board shall have a video out female RCA style connector, DB9 female Service port and RJ-11 I/O Expansion port.

The VIP Expansion board shall also have separate LEDs that indicate:

- **POWER**: Red to verify power supply.
- **COMM**: Red to indicate communications to VIP board.
- **I/O1-I/O4**: Green if the corresponding detection group is active.

The VIP Expansion board shall have 8 dip switches that define inputs and outputs used (range: 1-12 or 13-24).

The VIP module shall have an onboard database capable of time stamping and storing 500 events. The Event Log Database can be viewed or downloaded to a selected spreadsheet. Erasure of the Event Log Database shall not alter programmed configurations. As a minimum, the VIP shall log and time stamp the following events:

- Firmware upgrade.
- Loss of video signal.
- Resumption of video signal.
- Configuration change.
- Bad video quality.
- Loss of power to VIP module.
- Resumption of power to VIP module.
- Speed alarm.
- Inverse direction.
- Recall activated.
**Video System Communications Module:**
Supply one ViewCom/E MAX communications card for every 4 VIP 3D.2 cards supplied.

The ViewCom/E MAXs board shall be modular by design and housed in either a self-contained stand-alone unit or fit directly into NEMA TS1 & TS2 type racks.

The ViewCom/E MAXs shall only occupy a single detector file slot. The ViewCom/E MAXs shall be 1.1” (w) x 4.5” (h) x 7” (l)

The ViewCom/E MAXs board shall control from 1 to 4 VIP boards allowing for 1 to 8 image sensors.

The ViewCom/E MAXs shall be designed to operate reliably in the adverse environment of roadside cabinets and shall meet or exceed all NEMA TS1 and TS2 specifications.

Ambient operating temperature shall be from –34 to +74 degrees Centigrade at 0 to 95% relative humidity non-condensing.

The ViewCom/E MAXs shall utilize cabinet 24 VDC for rack mount installations or external 24 VDC for standalone shelf installations and shall draw less than 2 amperes.

Serial (Programming Keypad) and Ethernet (TCP/IP) communications shall be through respectively an RS232 serial port (F DB9 connector) and Ethernet port (RJ-45 connection). These ports can be used for local programming of the ViewCom/E MAXs, communication to upload/download detector configurations, traffic data, technical events, send software upgrades and do remote setup of detectors. RS485 on the rear edge connector shall facilitate communications to VIP boards.

Surge ratings shall be set forth in the NEMA TS1 and TS2 specifications.

The Communication board shall have separate light emitting diodes (LEDs) that indicate:

- **POWER** Red LED to verify power supply.
- **LAN** Red LED to indicate data activity over Ethernet communication.
- **VIDEO OUT** Female RCA style connector.
- **RESET** Manual reset to re-initialize communications.
- **SERVICE** DB9 female Service port for setup of communication board.

**PIM Card (Port-1 Interface Module):**
Supply one PIM for every eight VIP3D.x units supplied. The PIM provides a direct interface between the Traficon VIP3D.x series video detection modules and any NEMA TS-2 compliant controller unit.
The PIM unit shall support up to 64 channels of detection.

The PIM unit shall meet all the environmental requirements of the NEMA TS-2.

The PIM unit shall be hot swappable.

**Thermal Sensor- Camera:**
FLIR FC-Series thermal traffic detection cameras (with appropriate lens and housing) or an approved equivalent shall be supplied.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>Array Format (NTSC)</td>
<td>320 x 240</td>
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<tr>
<td>Detector Type</td>
<td>Long-Life, Uncooled VOx Microbolometer</td>
</tr>
<tr>
<td>Effective Resolution</td>
<td>76,800</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>25 µm</td>
</tr>
<tr>
<td>Field of View</td>
<td>48° x 37 ° (FC-348t, 9 mm)</td>
</tr>
<tr>
<td></td>
<td>34° x 26 ° (FC-334t, 13 mm)</td>
</tr>
<tr>
<td></td>
<td>24° x 18 ° (FC-324t, 19 mm)</td>
</tr>
<tr>
<td>Spectral Range</td>
<td>7.5 µm to 13.5 µm</td>
</tr>
<tr>
<td>Focus Range</td>
<td>Athermalized, focus-free</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-34 to + 74 degrees C</td>
</tr>
<tr>
<td>Humidity</td>
<td>0% to 95% relative</td>
</tr>
<tr>
<td>Dimensions</td>
<td>10.8” x 5.4” x 4.4” (with sun shield)</td>
</tr>
<tr>
<td>Weight</td>
<td>4.2 lbs. (with sun shield)</td>
</tr>
<tr>
<td>Camera mounting slots</td>
<td>1/4-20 threaded holes, 1” spacing along centerline front to back</td>
</tr>
<tr>
<td>Connectors</td>
<td>BNC and Connector-Free Video Cable Terminal Strip</td>
</tr>
<tr>
<td>Composite Video</td>
<td>NTSC</td>
</tr>
<tr>
<td>Input voltage</td>
<td>90-240 VAC single phase, 50 Hertz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>1.7 W nominal power at 110 VAC</td>
</tr>
</tbody>
</table>

**Surge Protection:**
A video surge suppressor(s) shall be available for installation inside the traffic signal controller cabinet. The suppressor shall provide coaxial cable connection points to an EDCO CX06-BNCY or approved equal transient suppresser for each image sensor.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Surge Current (8 x 20 us)</td>
<td>20KA</td>
</tr>
<tr>
<td>Technology</td>
<td>Hybrid, Solid State</td>
</tr>
<tr>
<td>Attenuation</td>
<td>0.1db @ 10Mhz</td>
</tr>
<tr>
<td>Response Time</td>
<td>&lt;1 nanosecond</td>
</tr>
<tr>
<td>Protection</td>
<td>Line to Ground</td>
</tr>
<tr>
<td>Shield to Ground</td>
<td>(isolated shield modules)</td>
</tr>
<tr>
<td>Clamp Voltage</td>
<td>6 volts</td>
</tr>
<tr>
<td>Connectors</td>
<td>BNC</td>
</tr>
<tr>
<td>Impedance</td>
<td>75 Ohms</td>
</tr>
<tr>
<td>Temperature</td>
<td>-34 to +74 degrees C</td>
</tr>
<tr>
<td>Humidity</td>
<td>0-95% non-condensing</td>
</tr>
</tbody>
</table>
Dimensions: 4.5” x 1.5” x 1.25”
UL Listed: UL 497B

A small junction box (rigid PVC) incorporated into the camera mounting bracket will house connections for coaxial cable, camera power, camera zoom focus controls as well as an added surge protector.

**Thermal Sensor – Housing and Mounting Brackets:**
The environmental housing shall be an aluminum enclosure designed for outdoor thermal sensor installations with a light gray semi-gloss polyurethane finish. The housing shall provide up to three liquid-tight fittings to accept necessary power and video cabling with diameters up to 10 mm. The enclosure shall be waterproof and dust tight.

Mast arm installations shall be mounted at a sufficient height to prevent occlusion from cross traffic between the stop bar and the mast arm on which the camera is installed. A six- (6) ft. maximum length of internally reinforced tube shall be attached to the mast arm bracket for camera mounting above the mast arm. Camera shall be mounted to the top of the tube with the camera manufacturers recommended bracket. Camera bracket shall provide adjustments for both vertical and horizontal positioning for the camera. Camera attachments shall be designed to securely fasten the camera to prevent the extension tube from falling into the path of vehicles and/or becoming loose. Miscellaneous hardware shall be stainless steel or galvanized steel. The cameras and associated pole/arm attachment unit shall be designed to withstand a wind load of 90 MPH with a 30-second gust factor.

Luminaire arm installations shall be installed on the luminaire arm, with the camera/video manufacturers recommended brackets. Camera luminaire brackets shall provide adjustments for both vertical and horizontal positioning of the camera. Camera attachments shall be designed to securely fasten the camera to the luminaire arm. Mounting bracket shall be made of aluminum. Miscellaneous hardware shall be stainless steel or galvanized steel. The cameras and associated pole/arm attachment unit shall be designed to withstand a wind load of 90 MPH with a 30-second gust factor.

**Thermal Sensor – Cable (Coaxial & Power):**
Coaxial & Power cable (Siamese) shall be installed in conduits or overhead as indicated in the plans. Coaxial cable shall be suitable for exterior use and in direct sunlight. Power cable will have a minimum of six (6) conductors.

A junction box on the camera bracket arm shall provide access to video and power cable terminations. No soldering shall be required in the field. Coaxial cable will terminate with a “barrel” style BNC connector and power shall be terminated via a small terminal strip or via “wire nuts.”
Coaxial cable will be terminated in the surge suppressor before being connected to the VIP boards.

Power cable will be terminated into a circuit breaker panel provided by the manufacturer and connected to 120 VAC in the controller cabinet.

Description of cables: Composite; 6 Conductors/2 elements: 18awg 6 conductors 7/26 bare copper, .016” polyethylene; 20awg 1 conductor: solid bare copper, .056” foam polyethylene jacket black, overall .030” PVC jacket black.
## ELEMENT 1

Conductors/Pair Count: 6 Conductors
Gauge & Stranding: 18awg 7/26 BC
Primary Insulation Type: Polyethylene
Insulation Thickness: .016”
Color Code: White, Red, Blue, Black, Brown
Shield: N/A
Tape: N/A
Drain Wire: N/A
Braid: N/A
Capacitance: N/A
Print Legend: N/A
Jacket Type: N/A
Jacket Color: Black
Jacket Thickness: N/A
Nominal OD: .242”

Overall Assembly of Wire:
Jacket Thickness: .030”
Jacket Color: Black
Jacket Material: PVC
Ripcord: Yes
Nominal OD: .512”
Voltage Rating: 600V
Temp. Rating: 75C
Ul Type or Style: N/A
Print Legend: TBD
Packaging: TBA
Copper Weight: 39.87 LBS/MFT
Shipping Weight: 100 LBS/MFT

## ELEMENT 2

Conductors/Pair Count: 1 Conductor
Gauge & Stranding: 20awg Solid BC
Primary Insulation Type: Foam PE
Insulation Thickness: .056”
Color Code: Natural
Shield: N/A
Tape: N/A
Drain Wire: N/A
Braid: 95% BC
Capacitance: N/A
Print Legend: N/A
Jacket Type: Polyethylene
Jacket Color: Black
Jacket Thickness: .035”
Nominal OD: .242”

Video Detection Monitor:
Provide a 9” LCD color monitor (portable DVD player configuration) for set up and on-going monitoring of the video detection system. Unit shall be small form and be contained within the auxiliary drawer within the cabinet. Minimum two (2) inputs for receipt of video images from detection equipment and shall be either HDMI, RCA, or DVI.

### 1.3 PROCEDURES

Installation of materials shall be accomplished in accordance with the manufacturer’s instructions except when otherwise noted. Install the VIP 3D.2 system into the controller cabinet, connect to conductor cable and set up detection zones per signal plans.
Install the video detection as shown on the video detection mounting detail on the signal plans. Install on signal pole mast arm, mounting arms, or brackets as appropriate. All mounting shall be configured to create a fixed camera location.

1.4 MEASUREMENT AND PAYMENT

**Video Detection Equipment** will be measured in units of each and will be paid for at the contract unit price per each unit furnished and installed. This price includes the installation of the video image processor(s) (Traficon VIP 3D.2), the video system communications module (ViewCom/E Max), and the PIM card into the controller cabinet, including rack and harness (if necessary), power supply, connection of conductor cables, and setup of detection zones per the signal plans.

**Thermal Detection Cameras** will be measured in units of each and will be paid for at the contract unit price per each camera furnished and installed. This price includes the camera (including lens and housing) and surge protection, conductor cable from the camera to the controller cabinet, and all necessary mounting arms and brackets for installation of the video detection as indicated on the signal plans.

**Thermal Detection Cable** will be measured will be measured in linear feet and will be paid for at the contract unit price per linear foot furnished and installed. This price includes the conductor cable from the camera to the controller cabinet, and all necessary equipment for installation of the video detection cable as indicated on the signal plans.

**Thermal Detection Monitor** will be measured in units of each and will be paid for at the contract unit price per each monitor furnished and installed.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Detection Equipment</td>
<td>EA</td>
</tr>
<tr>
<td>Thermal Detection Camera</td>
<td>EA</td>
</tr>
<tr>
<td>Thermal Detection Cable</td>
<td>LF</td>
</tr>
<tr>
<td>Thermal Detection Monitor</td>
<td>EA</td>
</tr>
</tbody>
</table>

**EMERGENCY VEHICLE PREEMPTION**

1.1 DESCRIPTION

These specifications cover general construction items, methods, and procedures common to emergency vehicle preemption detection at traffic signals.

1.2 MATERIALS

Emergency vehicle preemption shall be Opticom™ equipment or approved equivalent. The system shall be comprised of the following components:

- Opticom™ model 711 (1-way) detector
- Opticom™ 138 Detector cabling (from detector to controller)
• Opticom™ model 764 (four-channel) phase selector with Ethernet capability

1.3 PROCEDURES
Installation of materials shall be accomplished in accordance with the manufacturer’s instructions except when otherwise noted. Install the Opticom™ emergency preemption system including installation of detectors with all necessary mounting hardware, detector cable from detectors into the controller cabinet, installation of phase selector in cabinet and all connection necessary to create a fully functional emergency preemption system as shown on the signal plans.

1.4 MEASUREMENT AND PAYMENT

Emergency Vehicle Preemption Detector Cable will be measured in linear feet and will be paid for at the contract unit price per linear foot furnished and installed. This price shall include the detector cable and all incidental materials necessary to install and connect the EVP sensors to the EVP equipment in the controller cabinet.

Emergency Vehicle Preemption Detectors will be measured in units of each and will be paid for at the contract unit price per each detector furnished and installed. This price includes the EVP detector/sensor and the installation of the detector/sensor including all brackets, clamps and fittings necessary to mount the sensor per manufacturer’s instructions.

Emergency Vehicle Preemption Phase Selector will be measured in units of each and will be paid for at the contract unit price per each phase selector furnished and installed. This price shall include all labor and material to integrate the phase selector into a fully functional Opticom™ Priority Control system. Phase selector shall be the Opticom™ Model 764 Phase Selector.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Vehicle Preemption Detector Cable</td>
<td>LF</td>
</tr>
<tr>
<td>Emergency Vehicle Preemption Detector (1-way, single input)</td>
<td>EA</td>
</tr>
<tr>
<td>Emergency Vehicle Preemption Phase Selector (4 channels)</td>
<td>EA</td>
</tr>
</tbody>
</table>

RED LIGHT RUNNING CONFIRMATION LIGHT ASSEMBLY

1.1 DESCRIPTION
These specifications cover general construction items, methods, and procedures associated with the installation of the prescribed red light running confirmation light assemblies.
1.2 MATERIALS
Red light running confirmation light assemblies shall be Pelco Brand model SM-0321-BL-45-PNC or approved equivalent. The assembly shall consist of a confirmation light assembly with globe covering and all housings and brackets made of stainless steel or other anticorrosive weatherproof material. The assembly shall have an integrated astrobracket to allow for fixed mounting to a pole or mast arm. The globe shall allow for full 360 degree visibility. The confirmation light shall be an LED lamp and allow for reliable operations in weather conditions consistent with NEMA standards.

1.3 PROCEDURES
Furnish and install the required number of red light running confirmation light assemblies as prescribed on the Plans at the locations indicated. Assemblies shall be mounted to the proposed traffic signal mast arms using the integrated astrobracket. Run the cabling required for the confirmation light back to the nearest signal head and tie into red display and neutral.

Contractor shall integrate each assembly with the traffic signal controller and confirm proper operations of each unit. Proper operations shall provide for the confirmation light indication to be active (i.e. illuminated) during the all red period of the corresponding vehicle phase.

1.4 MEASUREMENT AND PAYMENT
Red Light Running Confirmation Light Assembly will be measured and be paid for each assembly furnished and installed. The unit price shall include the confirmation light assembly, astrobracket, lead-in cable, and all labor, tools, equipment, and attachment hardware necessary to install the assembly. No separate measurement and payment will be made for splicing, integration, and testing of the assembly and shall be considered incidental to the cost to furnish and install each device.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Light Running Confirmation Light Assembly</td>
<td>EA</td>
</tr>
</tbody>
</table>

STREETLIGHTS

1.1 DESCRIPTION
Streetlights shall be furnished and installed as shown on the plans to provide intersection illumination.

1.2 MATERIALS
The Contractor shall furnish and install Cree Lighting #STR-LWY-2M-HT-06-C-UL-SV LED light fixtures. This is a No Substitute product.

Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
Metal parts shall be free of burrs as well as sharp corners and edges. Housings shall be rigidly formed, weather-tight enclosures that will not warp, sag, or deform in use.

Exposed hardware material shall be stainless steel.

Provide a surge protection device (SPD) connected to panel board meeting the following requirements:

- SPDs shall be a UL listed, Type 1 device suitable for Type 1 or 2 installations per UL 1449 3rd ed., applied to the line or load side of the electrical service feed.
- SPDs shall be connected to the service panel as indicated on the Plans.
- SPDs shall be manufactured by a single ISO-9001 registered company normally engaged in the design, development and manufacture of such devices for electrical and electronic system equipment protection.
- SPDs shall be designed for the specific type and voltage of the electrical service as indicated on the drawings, and provide suppression for all phases (L-N), all phases (L-G), all phases (L-L) and (N-G).
- All SPDs shall be designed to withstand a maximum continuous operating voltage (MCOV) rating of not less than 115% of the system RMS line voltage to which they are connected and in compliance with test and evaluation procedures outlined in the nominal discharge surge current test of UL 1449 3rd ed., Section 37.7.
- SPDs shall have not more than 10% deterioration or degradation of the UL 1449 3rd ed. Voltage protective rating (VPR) due to repeat surges.
- All SPDs shall provide minimum -30dB noise attenuation or better across the 50k - 100MHz frequency spectrum
- All SPDs shall contain internal safety fusing to disconnect surge protective components from the electrical source of supply in the event of SPD failure in order to prevent catastrophic failure.
- Loss of protection diagnostic lights for each phase shall be provided. In addition, separate visual fault indication and surge counter shall be provided.
- SPDs shall be 200kAIC rated.

SPDs shall carry a manufacturer’s warranty to be free from defects in materials and workmanship under normal use in accordance with the instructions for a period of not less than 5 years.

Fixtures shall be installed on twelve (12) foot luminaire arms secured to the mast arm. The maximum vertical rise provided by the luminaire arm shall be no more than five (5) feet. Luminaire arms shall be galvanized steel to match the proposed signal poles.

Comply with AASHTO LTS-5-E, NEMA C136.20 and current building code.
- Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated.
• Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis. An anti-rotational device shall be incorporated into the pole shaft design.
• Materials: Poles shall be made of fiberglass roving material combined with thermosetting polyester resin wound in low-angle helicals and high-angle hoops providing maximum resistance to deflection and shear. Poles shall be direct burial style ASTM 4923 Class 1. Provide natural finish poles with a gray color.
• Shaft openings: At a minimum, one (1) handhole shall be provided no more than 18 inches above the finished grade. One (1) cable entry shall be provided no more than 24 inches below grade.

Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.

All mountings, fasteners, and appurtenances shall be corrosion-resistant items compatible with support components.

1.3 PROCEDURES
Install exterior lighting fixtures at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation", NEMA standards, and with recognized industry practices to ensure that lighting fixtures fulfill requirements. Fasten luminaire to structural supports and check to ensure that fixtures are plumb, level, and properly aimed.

Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation.

Clean exterior lighting fixtures of dirt and debris upon completion of installation.

Luminaire arms shall be separated by 90 degrees and oriented as shown on the Plans.

Install streetlight fixtures at the end of the luminaire arms and attach with manufacturer approved hardware and brackets.

Direct bury poles a minimum six (6) feet below ground level

Ground poles and support structures as follows:
• Install grounding electrode for each pole.
• Install grounding conductor and conductor protector.
• Ground metallic components of pole accessories and foundations.

1.4 TESTING
Upon completion of installation of exterior lighting fixtures, and after energizing branch supply circuitry, apply electrical energy to lighting fixtures to demonstrate
capability and compliance with requirements. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.

Replace any defective lighting fixture components and related equipment at the time of Substantial Completion.

1.5 MEASUREMENT AND PAYMENT

Streetlight and Luminaire Arm will be measured in units of each and will be paid for at the contract unit price per each. The unit price shall include the cost to furnish the light fixture, luminaire arm, and all brackets and hardware, labor, tools, equipment, and any other items or materials necessary to provide a complete streetlight assembly installed in place as prescribed in the Plans. No separate measurement and payment will be made for splicing of electrical conductor cables to power the light fixtures, SPDs, or testing.

Streetlight, Luminaire Arm, and Pole will be measured in units of each and will be paid for at the contract unit price per each. The unit price shall include the cost to furnish the light fixture, luminaire arm, pole, and all brackets and hardware, labor, tools, equipment, and any other items or materials necessary to provide a complete streetlight assembly installed in place as prescribed in the Plans. No separate measurement and payment will be made for splicing of electrical conductor cables to power the light fixtures, SPDs, or testing. The Contractor shall be responsible for the sizing of poles to support the proposed fixture and luminaire arm.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streetlight and Luminaire Arm</td>
<td>EA</td>
</tr>
<tr>
<td>Streetlight, Luminaire Arm, and Pole</td>
<td>EA</td>
</tr>
</tbody>
</table>

PAVEMENT MARKINGS AND MARKERS

1.1 DESCRIPTION

Pavement markings and markers shall be in accordance with the City of Newport News – Department of Engineering Traffic Operations Policy Manual Dated 07/01/2010 – Section 2000. See Appendix A.

1.2 MATERIALS

Materials for pavement markings and markers shall be in accordance with the City of Newport News – Department of Engineering Traffic Operations Policy Manual Dated 07/01/2010 – Section 2000. See Appendix A.

1.3 PROCEDURES

Pavement markings and markers shall be installed in accordance with the City of Newport News – Department of Engineering Traffic Operations Policy Manual Dated 07/01/2010 – Section 2000. See Appendix A.
Pavement markings shall be Type B, Class 1 Thermoplastic. Placement of pavement markings shall be per VDOT 2008 Road and Bridge Standards, Section 1300 and the City of Newport News – Department of Engineering Traffic Operations Policy Manual, whichever is more restrictive. All pavement markings are to be spotted and field verified by Traffic Operations prior to installation. A forty-eight hour notice is required to Sign Shop Superintendent, 269-2450.

Pavement markings that conflict with the proposed pavement marking plan shall be eradicated in compliance with Section 512 of the HRPDC Specifications.

1.4 MEASUREMENT AND PAYMENT
Section 512 of the HRPDC Specifications is revised to include the following:

_Eradication of Existing Pavement Markings_ will be considered incidental to the cost of installing new pavement markings and will not be measured and paid for separately.

Section 704 of the HRPDC Specifications is revised to include the following:

_Pavement Markers_ will be considered incidental to the cost of installing new pavement markings and will not be measured and paid for separately.

_Pavement Line Markings_ and _Pavement Message Markings_ will be measured and paid for in accordance with Section 704 of the HRPDC Specifications.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Pavement Line Marking, Yellow, Type B, Class I, 4”</td>
<td>LF</td>
</tr>
<tr>
<td>Proposed Pavement Line Marking, White, Type B, Class I, 6”</td>
<td>LF</td>
</tr>
<tr>
<td>Proposed Pavement Line Marking, White, Type B, Class I, 24”</td>
<td>LF</td>
</tr>
<tr>
<td>Proposed Pavement Message Marking, White, Type B, Class I, Left Arrow</td>
<td>EA</td>
</tr>
</tbody>
</table>

UTILITY TEST HOLES

1.1 DESCRIPTION OF WORK
This item will consist of performing test holes within the project for the purpose of locating existing underground City maintained utilities prior to conduit boring. Prior to any test hole excavation operation, the Contractor is to review the location, number of test holes, and the existing utilities with the City Engineer. The contractor shall obtain the vertical and horizontal location and determine the approximate size of the utility being located. Test holes performed without prior authorization from the City Engineer will be at the Contractor’s expense.

1.2 MATERIALS
The location of all underground City maintained utilities shall be confirmed by way of a test hole no greater than 12 inches in diameter up to 8 feet deep. The Contractor shall
obtain top and bottom elevations of all underground City maintained utilities to be used in developing horizontal conduit drilling alignments.

1.3 MEASUREMENT AND PAYMENT
Payment for locating utilities by test holes shall be made by the unit price bid per each. Test hole locations in existing roadway, sidewalk, and driveway locations shall require patching with like material and shall be included in the unit price bid. Required traffic control shall be included in unit price bid.

Payment will be made under:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Hole</td>
<td>EA</td>
</tr>
</tbody>
</table>
1.1 DESCRIPTION
This section specifies the documentation to be provided by the Contractor.

1.2 DOCUMENTATION
Provide as-built documentation. All documentation, except as otherwise specifically approved by the Engineer, shall meet the following requirements:

- Provide any documentation that exceeds the size of 11 x 17 inch paper in a reproducible format 22 x 34 inches in size.
- No documentation shall be smaller than 8.5x11 inches.
- Reproducibles shall not be folded or creased.

Provide documentation, at a minimum, for the following.

Plan of Record Documentation
Prepare as-built drawings that depict any change of components, measurement or layout of the Plans. All construction changes, with the final location and depth of conduits, wiring external to the cabinet, locations of splice closures, system detector locations, and SMFO cable terminations, etc., shall be shown in detail in reproducible format. These as-built drawings of construction changes shall be submitted as soon as that change is complete. Each change shall be noted and dated. Failure to revise as-built documentation to reflect current work may result in withholding of payments until the as-built documentation is brought current. The submitted as-built may be field-checked by the Engineer at his/her discretion. If the as-built documentation is found to have an unacceptable number of inaccuracies, the Engineer may withhold payment until the as-built plans are corrected. The Plans shall include all field installations including the SMFO cable network installed.

One (1) reproducible drawing of the Plans and one editable electronic copy of the Plans will be provided to the Contractor for his use. Provide any other base maps that may be necessary to comply with this requirement.

Any changes made to the original plans shall be made by modifying the original electronic files such that all changes are marked with callout boxes. Within ten (10) days after the observation period begins, furnish one reproducible copy of the draft as-built plans in hard copy format for review. Provide draft hard copy as-builts on 22x34 inch bond plan sheets.

Correct any comment to the draft as-built plans upon review by the Engineer prior to the acceptance of the project. Submit final as-built plans in editable electronic and hard copy format. Provide electronic plans in AutoCAD (latest release in use by the City) format on compact disc (CD) or DVD. Submit hard copy as-builts on 22x34 inch plan sheets.
The Engineer will provide editable electronic copies of AutoCAD design files for the original plans (including splice details) for the Contractor’s use in preparing as-built drawings. Any other base maps that may be necessary for the Contractor to prepare the as-built drawings in accordance with this Special Provision will be the Contractor’s responsibility. Use CADD conventions that are consistent with those used on the original plans. Designate any changes to drawings in a method approved by the Engineer. Correct any errors to the as-built plans upon review by the Engineer prior to the acceptance of the project. Submit final as-built plans in electronic and hard copy format.

Provide electronic plans in AutoCAD format on CD or DVD.

1.3 MEASUREMENT AND PAYMENT
All documentation shall be considered incidental to the construction of the system and shall be completed before acceptance of the Project. Preparation of as-built drawings shall be considered incidental to the bid items and no separate payment shall be made.