

GOVERNMENT OF THE DISTRICT OF COLUMBIA

**DEPARTMENT OF
TRANSPORTATION**

TRANSPORTATION OPERATIONS ADMINISTRATION



SPECIFICATIONS

INVITATION NO. DCKA-2014-B-0052

**PROJECT: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM
– PHASE 1 DETECTION SYSTEM**

FAP NO.: STP-8888(453)

Bids will be Publically Opened By The Office of Contracting and Procurement,
Bid Room, located at 55 M Street, SE, 4th Floor, Washington, DC 20003

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The "STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES, 2013" is incorporated herein by reference and is made a part of the requirements of this contract.

SPECIAL PROVISIONS

This document contains provisions, requirements, and instructions pertaining to this contract:

Invitation No.: DCKA-2014-B-0052
CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM
– PHASE 1 DETECTION SYSTEM
FAP NO.: STP-8888(453)

This document consists of:

- **SPECIFICATIONS:** Pages a through e and pages 1 through 59 and appendices (with number of pages listed on page e).
- **BID FORM AND PROPOSALS,** including **PAY ITEM SCHEDULE.**
- **CONTRACT PLANS:** Sheets 1 through 32.

Bidders should satisfy themselves that they have a complete document. Missing pages will not constitute the basis for a valid claim.

This is a Federal-Aid Contract; Form FHWA-1273, REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION PROJECT PROVISIONS, applies.

This document supplements and modifies the District of Columbia Department of Transportation **STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES, 2013**; this document is incorporated herein by reference.

Addenda issued prior to bid opening date, further supplement and modify the proposed contract. Bidders are responsible to make sure they have any and/or all addenda.

Reference to Division Numbers, Section Numbers, and Article Numbers refers to the **STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURES, 2013.**

In the **PAY ITEM SCHEDULE**, the first three-digit portion for each pay item number refers to the section of the **STANDARD SPECIFICATIONS** in which the item is described. The Special Provision number refers to the section of these **SPECIAL PROVISIONS** in which the item is further described.

1. SCOPE OF WORK

Work under this contract consists of detection equipment installation for Adaptive Signal Control Technology (ASCT) system operation for the project corridors and the signal system modifications at New York Avenue and Bladensburg Road, N.E., to accommodate ASCT. The Contractor will be required to verify that the detection installations functions at both the intersection level with the Adaptive Traffic Signal controller (2070E with McCain 2033 firmware installed under separate contract), at the Traffic Management Center (TMC) with McCain QuicNet Pro and at the TMC level with adaptive system installed. The detection must be verified to meet the data quality requirements (Section 33) during System Testing (Section 34) at both the intersection level and the TMC level. The Contractor must also provide a Data Quality Assurance Plan (Section 36) that must be developed and approved before work commences and will be used in conjunction with the System Test Plan (Section 34) to verify requirements contained in these special provisions as well as working seamlessly with the 2070 E McCain controllers with 2033 firmware, McCain QuicNet Pro, and the adaptive system. The detection system contractor must obtain DDOT approval of the test plan before any and all testing may commence.

The study corridors span:

- **Rhode Island Avenue, N.E.** from 4th Street, N.E. to Eastern Avenue, N.E.
- **New York Avenue** from 4th Street, N.W./I-395 Interchange to Bladensburg Road, N.E.
- **Pennsylvania Avenue, S.E.** from Anacostia Freeway Ramp/Fairlawn Avenue, S.E. to Southern Avenue, S.E.

The work includes, but is not limited to, the following items:

- a. Attend coordination meeting with DDOT TOA Project Manager to develop project schedule, including verification testing, in accordance with Adaptive Signal Control software and Controller upgrades
- b. Furnish and install grind-resistant (deep installation) Sensors in accordance with Contract Plan set and Vendor design standards
- c. Furnish and install the following pole-mounted detection equipment, as specified in the Contract plans, in accordance with Vendor design standards:
 1. Access Point
 2. Digital Radio
 3. Repeater
 4. Mounting Bracket
 5. CAT-5E Cable; confirm conduit locations prior to cable installation
- d. Furnish and install in-cabinet detection equipment – including Contact Closure Master Card, Access Box, Access Point Controller Card, APCC isolator, and/or Contact Closure Expansion Card – in accordance with Vendor design standards

- e. Orient and configure detection equipment in accordance with Contract Plan Communication Drawing, General Notes, and Detail sheets and in compliance with Vendor design standards for fully functioning detection system
- f. Prepare and submit all test procedures for approval by DDOT to test each of the detection system locations and the entire detection system for presence, occupancy, volume, and speed.
- g. Conduct in-field testing in accordance with Section 34 of these Special Provisions.
- h. Provide training for Department personnel in the installation, maintenance and operation of the detection equipment
- i. Install proposed traffic signal controller cabinet foundation, traffic signal controller cabinet, and conduit lines for power and communication at New York Avenue and Bladensburg Road, N.E., in accordance with Contract Plan and Detail sheets; transfer ITS equipment to proposed cabinet in accordance with Cabinet Detail, Sheet 5 of Contract Plans
- j. Furnish and install proposed video detection equipment and CAT-5E cable at New York Avenue and Bladensburg Road, N.E., in accordance with Contract Plan set and Vendor installation guidance; confirm conduit locations prior to cable installation
- k. Investigate and confirm conduit paths for all cable installations from device (Access point, digital radio, video detection camera) to traffic signal controller cabinet as shown in contract plans. If any discrepancies or conflicts are determined, identify necessary modifications to the conduit path and notify DDOT Engineer.
- l. Retrofit cabinet to accommodate proposed detection equipment and integrate proposed detection with existing Sensor in-cabinet equipment, while maintaining existing sensor functionality and communications with DDOT servers.
- m. Provide for mobilization, demobilization, field layout, and employee training
- n. Implement, monitor, and maintain both vehicular and pedestrian traffic for the duration of the construction period. Install and maintain temporary traffic control signs, temporary signalization, pavement markings, barriers, barricades, arrows, and other transition devices. Reconfigure devices in conjunction with changes in work area; and provide for their removal and disposal upon project completion
- o. Prepare As-Built drawings in conformance with DDOT requirements
- p. Document and provide GPS coordinates for all installed sensors and pole mounted detection equipment

In addition to the above items, any incidental items of work necessary for a complete and finished product are to be provided and are not separately paid.

The Contractor shall be fully responsible for protection against damages for the duration of the contract of all utilities, utility structures, private property fencing, walls, and vegetation, and existing sidewalk coping within the contract limits and adjacent thereto. The utilities included but are not limited to public and/or private water, sewer, electricity, gas, communication lines. Cost of this protective work shall be distributed among the contract pay items. No separate measurement or payment will be made.

The Contractor shall maintain and update a set of As-Builts ready for inspection by DDOT during construction.

2. SPECIFICATIONS AND DRAWINGS

The specifications entitled "District of Columbia Standard Specifications for Highways and Structures (2013)" hereinafter referred to as the Standard Specifications; Supplemental Specifications; the Special Provisions; notes on the Plans; this Bid Proposal; and any addenda thereto shall govern the work to be performed under this contract.

DDOT Standard Drawing (2009) should be used as guidance in installation of new signal control cabinets. DDOT Standard Drawing (2009) is available on the following website: <http://ddot.dc.gov/page/standard-drawings-april-2009>

Any adjustment by the Contractor without a prior determination by the Contracting Officer shall be at his own risk and expense. The Contracting Officer will furnish from time-to-time, such detail drawings and other information as he may consider necessary, unless otherwise provided.

3. CONTRACT TYPE

This is a low bid, fixed price contract. The Contractor shall deliver all items in accordance with the terms and conditions of the contract award.

4. TERM OF CONTRACT

This is a low bid, fixed price contract with a completion term of three hundred and sixty-five (365) calendar days from the Notice to Proceed date and subject to the District of Columbia Department of Transportation (herein afterwards referred to as "the Department", "DOT" or "DDOT"). The Contractor shall complete all material procurement, installation, integration, testing and documentation during the 365 calendar day term of the contract.

5. LIQUIDATED DAMAGES

Replace Section 108.09 of the DDOT standard specifications for Highways and Structures, 2013 with the following:

For each calendar day that contract work remains incomplete after expiration of the specified construction completion time, or main part thereof, the sum of \$1,000 has been set by the Contracting Officer as liquidated damages from any money due the Contractor. Construction completion time shall be established for each individual intersection or task order in accordance with time schedules and constraints, established in these Special Provisions. The Contractor's operation after expiration of construction completion time as extended shall in no way waive the District's rights under the contract.

RETAINAGE. Retainage in the amount of 10% shall be held by DDOT on each partial payment provided to the Contractor. On all invoices, the Contractor shall show the invoice amount, less the 10% retainage. Upon final acceptance of the project, the total retainage held shall be paid to the Contractor in their final payment.

6. CONSTRUCTION COMPLETION TIME

This Special Provision supplements 108.08(A) of the Standard Specifications.

The completion of the entire project and final acceptance by the District shall be accomplished in 365 calendar days from the Notice to Proceed date.

7. PRE-AWARD APPROVAL

Pursuant to Title XXII of the "Fiscal Year 2003 Budget Support Amendment Act of 2002", D.C. Law 14-307, effective June 5, 2003, the Mayor must submit to the Council for approval any contract action over one million dollars, within a 12-month period.

8. PRE-BID CONFERENCE

Prospective bidders are invited to attend a meeting to discuss the proposed work under this contract. The meeting will be held at 55 M Street, S.E. Suite 400, Washington, DC 20003. Bidders will be notified of the location, room number, date and time by Addendum.

Representatives of the Department will be available to answer questions relative to the work. Bidders who expect to attend should inform the Department prior to the meeting date. Any pertinent date or change resulting from the conference will be included in any addendum issued to all prospective bidders after the conference; however, the importance of attending the meeting is stressed. Any questions or conflicts identified prior to bid should be brought out during this meeting.

9. BID GUARANTY

This Special Provision supplements 102.01, Article 12.A, of the Standard Specifications for Highways and Structures, 2013.

The bid guaranty period shall be ninety (90) calendar days after bid opening.

An Irrevocable Letter of Credit or United States government securities that are assigned to the District which pledge the full faith and credit of the United States are acceptable.

10. INSURANCE

GENERAL REQUIREMENTS. The Contractor shall procure and maintain, during the entire period of performance under this contract, the types of insurance specified below. The Contractor shall submit a Certificate of Insurance giving evidence of the required coverage either before or after contract award but before work commences. All insurance must be written with financially responsible companies authorized to do business in the District of Columbia or in the jurisdiction where the work is to be performed; have either an A.M. Best Company rating of A-VIII or higher, a Standard & Poor's rating of AA or higher, or a Moody's

rating of Aa2 or higher. The Contractor shall require all subcontractors to carry the insurance required herein, or the Contractor may, at its option, provide the coverage for any or all subcontractors, and if so, the evidence of insurance submitted shall so stipulate. All policies (excluding Workers' Compensation and Professional Liability, if applicable) shall name the District as an additional insured with respect to work or services performed under the Contract. All policies shall provide that the insurance coverage provided hereunder will be primary and noncontributory with any other applicable insurance. All policies shall contain a waiver of subrogation in favor of the District of Columbia. In no event shall work be performed until the required Certificates of Insurance signed by an authorized representative of the insurer(s) has been furnished. All policies shall provide that the Contracting Officer must be given thirty (30) days prior written notice via certified mail in the event coverage is substantially changed, canceled or not renewed.

CERTIFICATE OF INSURANCE REQUIREMENT. The policy description on the Certificate of Insurance form shall include the District as an additional insured and a waiver of subrogation in favor of the District.

COMMERCIAL GENERAL LIABILITY INSURANCE. The Contractor shall provide evidence satisfactory to the Contracting Officer with respect to the operations performed that it carries \$1,000,000 per occurrence limits; \$2,000,000 per aggregate limits; and includes coverage for products and completed operations and personal and advertising injury. The policy coverage must be primary and non-contributory, shall contain the CGL 2503 per project endorsement, and shall include the District of Columbia as an additional insured.

COMMERCIAL GENERAL LIABILITY INSURANCE. If the Contractor is providing insurance for a subcontractor, the Contractor shall provide evidence satisfactory to the Contracting Officer with respect to the operations performed that it carries \$1,000,000 per occurrence limits; \$1,000,000 per aggregate limits; and includes coverage for products and completed operations and personal and advertising injury. The policy coverage must be primary and noncontributory, shall contain the CGL 2503 per project endorsement, and shall include the District of Columbia as an additional insured.

AUTOMOBILE LIABILITY INSURANCE. The Contractor shall provide automobile liability insurance to cover all owned, hired or non-owned motor vehicles used in conjunction with the performance of the contract. The policy shall cover the operations performed under the contract with a \$1,000,000 per occurrence combined single limit for bodily injury and property damage. The policy coverage must be primary and non-contributory and shall include the District of Columbia as an additional insured.

WORKERS' COMPENSATION INSURANCE. The Contractor shall provide Workers' Compensation insurance in accordance with the statutory mandates of the District of Columbia or the jurisdiction in which the contract is performed.

EMPLOYER'S LIABILITY INSURANCE. The Contractor shall provide employer's liability insurance as follows: \$1,000,000 per accident for injury; \$1,000,000 per employee for disease; and \$1,000,000 for policy disease limit.

UMBRELLA OR EXCESS LIABILITY INSURANCE. The Contractor shall provide umbrella or excess liability insurance as follows: \$2,000,000 per occurrence, with the District of Columbia as an additional insured.

PROFESSIONAL LIABILITY INSURANCE (ERRORS & OMISSIONS). The Contractor (including but not limited to architects, attorneys, engineers, environmental consultants, and healthcare professionals) shall provide Professional Liability Insurance (Errors and Omissions) to cover liability resulting from any error or omission caused by the performance of professional services under this Contract.

The policy shall provide limits of \$1,000,000 per occurrence for each wrongful act and \$1,000,000 per aggregate for each wrongful act.

The Contractor shall maintain this insurance for five (5) years following the District's final acceptance of the work. The policy shall cover the Contractor and its subcontractors of every tier, and shall identify the District as the Project Owner on the policy.

DURATION. Except as proved in I.5.A.6, the Contractor shall carry all insurance until all contract work is accepted by the District. Each insurance policy shall contain a binding endorsement that: The insurer agrees that the Contracting Officer must be given thirty (30) days prior written notice via certified mail in the event coverage is substantially changed, canceled or not renewed.

CONTRACTOR'S PROPERTY. Contractors and subcontractor are solely responsible for any loss or damage to their personal property, including owned and leased equipment, whether such equipment is located at a project site or "in transit". This includes Contractor tools and equipment, scaffolding and temporary structures, and rented machinery, storage sheds or trailers placed on the project site.

MEASURE OF PAYMENT. The District shall not make any separate measure or payment for the cost of insurance and bonds. The Contractor shall include all of the costs of insurance and bonds in the contract price.

11. PROTESTS

Any actual or prospective bidder, purchaser or contractor who is aggrieved in connection with the solicitation or award of the contract, must file with the DC Contract Appeal Board (Board) a protest no later than ten (10) business days after the basis of the protest is known or should have been known, whichever is earlier. A protest based on alleged improprieties in a solicitation, which are apparent prior to bid opening or at the time for receipt of initial proposals, shall be filed with the board prior to bid opening or the time set for receipt of initial proposals. In procurements in which proposals are requested, alleged improprieties which do not exist in the initial solicitation, but which are subsequently incorporated into this solicitation, must be protested no later than the next closing time for receipt of proposals following the incorporation. The protest shall be filed in writing with the Contract Appeals Board, 717 14th Street, N.W., Suite 430, Washington, DC 20004. The aggrieved person shall also mail a copy of the protest to the Contracting Officer for solicitation.

12. DISPUTES

This Special Provision supplements and modifies Section 103.01, Article 7, of the Standard Specifications.

- A. All disputes arising under or relating to this contract shall be resolved as provided herein.

B. Claims by a Contractor against the District.

Claim, as used in Section B of this clause, means a written assertion by the Contractor seeking, as a matter of right, the payment of money in a sum certain, the adjustments or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under contract clause that provides for the relief sought by the claimant.

- (a) All claims by a contractor against the District arising under or relating to a contract shall be in writing and shall be submitted to the Contracting Officer for a decision. The contractor's claim shall contain at least the following:
 - (1) A description of the claim and the amount in dispute;
 - (2) Any data or other information in support of claim;
 - (3) A brief description of the Contractor's efforts to resolve the dispute prior to filing the claim; and
 - (4) The Contractor's request for relief or other action by the contracting officer.
- (b) The Contracting Officer may meet the contractor in a further attempt to resolve the claim by agreement.
- (c) For any claim of \$50,000 or less, the Contracting Officer shall issue a decision within sixty (60) calendar days from receipt of a written request from a Contractor that a decision be rendered within that period.
- (d) For any claim over \$50,000, the Contracting Officer shall take into account factors such as the size and complexity of the claim and the adequacy of the information in support of the claim provided by the Contractor.
- (e) The Contracting Officer's written decisions shall do the following:
 - (1) Provide a description of the claim or dispute;
 - (2) Refer to the pertinent contract terms;
 - (3) State the factual; areas of agreement and disagreement;
 - (4) State the reasons for the decision, including any specific findings of fact, although specific findings of fact are required and, if made, shall not be binding in any subsequent proceeding;
 - (5) If all or any part of the claim is determined valid, determine the amount of monetary settlement, the contract adjustment to be made, or other relief to be granted;
 - (6) Indicate that the written document is the contracting officer's final decision; and
 - (7) Inform the Contractor of the right to seek further redress by appealing the decision to the Contract Appeals Board.
- (f) Any failure of the Contracting Officer to issue a decision on a contract claim within the required time period will be deemed to be a denial of the claim, and will authorize the commencement of an appeal to the Contract Appeals Board as authorized by D.C. Official Code § 2-309.04
 - (1) If a Contractor is unable to support any or all of his or her claim and it is determined that the inability is attributed to a material

misrepresentation of the fact or fraud on the part of the Contractor, the contractor shall be liable to the District for an amount equal to the unsupported part of the claim in addition to all cost to the District attributable to the cost of reviewing the part of the Contractor's claim.

(2) Liability under this paragraph (g) shall be determined within six (6) years of the commission of the misrepresentation of fact or fraud.

(g) The decision of the Contracting Officer shall be final and not subject to review unless an administrative appeal or action for judicial review is timely commenced by the Contractor authorized by D. C. Official code § 2-309.04.

(h) Pending final decision of an appeal, action, or final settlement, a Contractor shall proceed diligently with performance of the contract in accordance with the decision of the Contracting Officer.

C. Claims by the District against a Contractor

(a) Claim used in Section C of this clause, means a written demand or written assertion by the District seeking, as a matter of right, the payment of money in a sum certain, the adjustment of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under contract clause that provides for the relief sought by the claimant.

(1) All claims by the District against a Contractor arising under or relating to a contract shall be decided by the Contracting Officer.

(2) The Contracting Officer shall send written notice of the claim to the Contractor. The Contracting Officer's written decision shall do the following:

- a) Provide a description of the claim or dispute;
- b) Refer to the pertinent contract terms;
- c) State the factual areas of agreement and disagreement;
- d) State the reason for the decision, including any specific findings of fact, although specific findings of fact are not required and, if made, shall not be binding in any subsequent proceedings;
- e) If all or any part of the claim is determined to be valid, determine the amount of monetary settlement, the contract adjustment to be made, or other relief to be granted;
- f) Indicate that the written document is the Contracting Officer's final decision; and
- g) Inform the Contractor of the right to seek further redress by appealing the decision to the Contract Appeals Board.

(3) The decision shall be supported by reasons and shall inform the Contractor of his or her rights as provided herein.

(4) The Authority contained in this clause shall not apply to a claim or dispute for penalties or forfeitures prescribed by the statute or regulation which another District agency is specifically authorized to administer, settle, or determine.

(5) This clause shall not authorize the Contracting Officer to settle, compromise, pay, or otherwise adjust any claim involving fraud.

- (b) The decision of the Contracting Officer shall be final and not subject to review unless an administrative appeal or action for judicial review is timely commenced by the District as authorized by D.C. Official Code §2-309.04.
- (c) Pending final decision of an appeal, action, or final settlement, the Contractor shall proceed diligently with performance of the contract in accordance with the decision of the Contracting Officer.

13. CONTRACTOR IDENTIFICATION

This Special Provision supplements Section 102 of the Standard Specifications.

All Contractors doing business with the District of Columbia Government shall have a Federal Tax Identification Number.

Please refer any question regarding this matter to Office of the Chief Financial Officer, (202) 671-2300, of the D.C. Department of Transportation.

14. CONTRACT ADMINISTRATION

CONTRACTING OFFICER. Contracts may be entered into and signed on behalf of the District Government only by Contracting Officers. The Contracting Officer is the only District official authorized to contractually bind the District. The Contracting Officer (CO) is Ms. Courtney Lattimore, Department of Transportation, Office of Contracting and Procurement, 55 M Street SE, 7th Floor, Washington, DC 20003.

Authorized Changes by the Contracting Officer:

- A. The Contracting Officer is the only person authorized to approve changes in any of the requirements of this contract.
- B. The Contractor shall not comply with any order, directive or request that changes or modifies the requirements of this contract, unless issued in writing and signed by the Contracting Officer.
- C. In the event the Contractor effects any change at the discretion of any person other than the Contracting Officer, the change will be considered to have been made without authority and no adjustment will be made in the contract price to cover any cost increase incurred as a result thereof.

Contracting Administrator (CA)

The term CA is synonymous with the term District's Engineer/ DDOT TOA Project Manager/COTR/Engineer for this contract is:

Name: Jason Tao
Title: ITS/Traffic Division
Agency: District Department of Transportation
Address: 55 M Street, SE, 6th Floor
Washington, DC 20003
Telephone: 202-671-1489

The CA will have the responsibility of ensuring that the work conforms to the requirements of this contract and such other responsibilities and authorities as may be specified in the contract. The CA will act as the contracting officer's (CO) representative for technical matters (COTR), providing technical direction and discussion, as necessary with respect to the specifications or statement of work, and monitoring the progress and quality of the Contractor's performance. Other responsibilities include the following:

- A. Keeping the CO fully informed of any technical or contractual difficulties encountered during the performance period and advising the CO of any potential problem areas under the contract;
- B. Coordinating site entry for contractor personnel, if applicable;
- C. Reviewing and approving invoices for fixed-price deliverable to ensure receipt of goods and services. This includes the timely processing of invoices and vouchers in accordance with the District's Payment provisions; and
- D. Maintaining a file that includes all contract correspondence, modifications, records of inspections (site, data, equipment) and invoices/vouchers.

It is understood and agreed, in particular, that the CA is not a contracting officer and does not have the authority to:

- A. Award, agree to, or sign any contract, delivery order or task order. Only the CO shall make contractual agreements, commitments, or modifications;
- B. Grant deviations from or waive any of the terms and conditions of the contract;
- C. Direct the accomplishment of effort, which is beyond the scope of the statement or work in the contract;
- D. Increase the dollar limits of the contract or authorize work beyond the dollar limit of the contract, or authorize the expenditure of funds by the Contractor;
- E. Change the period of performance; and
- F. Authorize the furnishing of District property, except as specified under the contract.

When in the opinion of the Contractor, the COTR requests effort outside the existing scope of the contract, the Contractor shall promptly notify the Contracting Officer in writing. The Contractor under such direction shall take no action until the Contracting Officer has issued a modification to the contract or until the issue has been otherwise resolved.

ORDERING AND PAYMENT. The contractor shall not accept orders for items under this contract unless a purchase order has been issued. The participating agency shall be the District of Columbia Department of Transportation.

Invoices shall be submitted in duplicate to the D.C. Department of Transportation, 55 M Street, SE, 4th Floor, Washington, D.C. 20003, Telephone 202-673-6813.

Each invoice must provide the following minimum information:

1. Contractor's name, address, invoice number and date;
2. Contract line item number (CLIN) being billed for payment and total amount due;
3. Purchase order and contract number;
4. Addressee's name and address;
5. Period of service;
6. Description of services and deliverables provided;
7. Name, title, signature and phone number of preparer; and
8. Name of the contracting officer's technical representative.

Payment may be delayed for improperly prepared invoices.

15. SUBCONTRACTING

The subcontractor approval request form included herein should be used to request approval of subcontractors on this project. The form should be completed for each subcontractor requested for approval and submitted to:

Attention: Contracting Officer
Department of Transportation
Office of Contracting and Procurement
2000 14th Street, N.W., 6th Floor
Washington, D.C. 20009

Any adjustment by the Contractor without a prior determination by the Contracting Officer shall be at his own risk and expense. The Contracting Officer will furnish from time-to-time, such detail drawings and other information as he may consider necessary, unless otherwise provided.

16. DEFAULT

This Contractor shall be in default of the Contract for the following reasons:

Contractor's performance is deficient (as determined by the COTR) and requires completion by others. Falsification of independent laboratory reports; or falsification of performance or testing results.

17. PERMITS

The Contractor shall be required to obtain public space and electrical permits prior to undertaking any work in the field. The Contractor's master electrician or licensed electrical Engineer must sign the permit application. The costs incurred for the permit application process are incidental to the project, and the Contractor shall not be compensated. Likewise, the Contractor shall, without expense to the District of Columbia, be responsible for obtaining public space permits.

The Contractor is advised that an electrical permit, a public space permit and a site-specific Maintenance of Traffic plan shall be required for each individual project. The Contractor shall be required to have sufficient qualified staff for successful completion of the application

processes. The Contractor shall be required to develop an approved Maintenance of Traffic Plan, and obtain both the public space and electrical permit for each individual project within ten (10) working days following receipt of the Notice to Proceed.

The electrical permit, the public space permit, the Maintenance of Traffic Plan and copies of approved submittals shall be in the possession of the Contractor at all times when working in the field.

Some of the detection system locations may be located in the National Park Service (NPS) system. The Contractor is responsible for identifying the sensor locations in the NPS system and coordinating for permits from the NPS to perform specific work under this contract. The Contractor shall be required to obtain NPS permits for all locations within the Parks. No work shall be performed on NPS property without full coordination and approval from the NPS and/or the Engineer.

The Contractor shall require permit from Urban Forestry Administration for tree trimming operations. The contractors shall be responsible for identifying the locations that require tree trimming and obtaining the appropriate permits.

The project Critical Path Method (CPM) schedule for each intersection shall display as milestones the projected approval of the Maintenance of Traffic plan, the receipt of the electrical permit and the receipt of the public space permit.

MEASURE AND PAYMENT. No direct measure of separate payment shall be authorized. Costs shall be equitably distributed over the applicable Special Provision.

18. VALUE ENGINEERING PROPOSALS BY THE CONTRACTOR

The provisions of Section 104.03 of the Standard Specifications For Highways And Structures, 2013 shall apply to this contract.

19. APPLICABLE WAGE DECISION/WAGE RATES

In accordance with the applicable provisions of 29 Code of Federal Regulations (CFR) Part 4 which require that the correct wage determination and the appropriate wage rates therein be incorporated into this contract, General Wage Decision No.2005-2103 Revision No. 8 is bound herein and contains the specific applicable wage rates.

SERVICE CONTRACT RATES. Any revisions to the wage determinations issued after the bid date and prior to the commencement of work are subject to the appropriate provisions of 29 CFR Part 4 Subpart A Section 4.5.

20. COORDINATION WITH OTHERS

This Special Provision supplements 103.01 Article 18 of the Standard Specifications.

In preparation of his/her bid, the bidder is advised to take into consideration of the fact that other contracts have been, will be, or may be let for work in the vicinity of the project area.

The Contractor shall coordinate his work and cooperate fully with all others in order to eliminate or curtail delays and interference of any kind. Coordination includes all contract

work for Adaptive Signal Control implementation and traffic signal controller upgrades. Particular attention shall be made with regard to proper maintenance of highway traffic through the project area. The Contractor shall perform his lane closings and reopening so as not to cause interference with others or to be in conflict with performance of traffic maintenance by others.

The District assumes no liability for contract delays or cost resulting from performance or non-performance of others.

The District will not consider any claims for compensation due to delay, other than written authorized time extension.

21. CONSTRUCTION SCHEDULING

This Special Provision supplements 108.03 of the Standard Specifications by adding:

The Contractor shall submit his construction schedule three (3) weeks prior to the start of construction for the approval of the Engineer. The Contractor shall schedule his work so that the requirements of Maintenance of Traffic are satisfied. In addition, the contractor shall attend a coordination meeting with the DDOT Contract Administrator to develop project schedule, including verification and system acceptance testing, in coordination with Adaptive Signal Control software and Controller upgrades.

To avoid excessive delays, work shall not begin at any location until submittals have been approved and sufficient materials have been obtained.

22. CONTRACTOR'S EMPLOYEES

The Contractor shall be required to furnish sufficient, competent labor to complete the work within the scheduled contract time. The Contractor shall determine the number of people and the amount of equipment required to achieve this goal.

The prime Contractor shall be an electrical Contractor licensed and bonded in the District of Columbia. The Contractor's electrical work must be under the direction of a Master Electrician or an Electrical Engineer licensed in the District of Columbia. Any subcontractor retained to perform electrical work shall also be an electrical Contractor licensed and bonded in the District of Columbia. Incidental Construction including conduit installation may be subcontracted to a qualified general Contractor, where applicable.

It shall be the responsibility of the Contractor to commit and allocate sufficient personnel, material, and equipment resources to this contract to ensure completion of all tasks within the specified one-year period.

The Contractor's employees installing electrical devices must be licensed in the District of Columbia as Master Electrician, Electrician, or Apprentice Electrician. An Electrician or Master Electrician must supervise apprentice electricians on the job site.

23. WORK AND STORAGE SPACE

This Special Provision supplements 103.01 of the Standard Specifications, Article 17.B, General Provisions, Standard Contract Provisions.

No work and storage area is being designated. The Contractor shall be fully responsible for seeking necessary space and undergoing all required negotiations with the owner of the property to secure its use and for restoring the area to its original condition and to the satisfaction of the Engineer.

The Contractor shall arrange for additional employee parking and storage space, if necessary, at his own expense and responsibility and at no additional expense to the District.

24. UNDERGROUND VAULTS

This Special Provision supplements Article 17.E of the General Provisions.

The Contractor shall take necessary measures to prevent damage to existing underground vaults within or adjacent to the project. It shall be the Contractor’s responsibility to determine exact locations for all underground vaults in the field.

In case of damage to underground vaults by the Contractor, the Contractor shall restore such underground vaults to a condition equivalent to that which existed prior to the damaged by repairing, rebuilding, waterproofing as approved by the vault Engineer, at the Contractor’s sole expense. The Contractor shall also be responsible for payment for any business damage or system(s) down time due to the damage of underground vaults. Payment amounts shall be determined by the vault Engineer and must be paid by the Contractor prior to the final acceptance of the Operational Acceptance Test (OAT).

25. UTILITY PROTECTIVE ALERT

This Special Provision supplements and modifies 107.16 of the Standard Specifications.

The table at the top of Page 74 is modified as follows:

<u>NAME</u>	<u>TELEPHONE NO.</u>	<u>FACILITIES</u>
“Miss Utility” for Wash, Gas Light Co., Verizon PEPCO, AT&T	800-257-7777	Gas lines, telephone, electric and communication conduits and cables
DC Water and Sewer Authority (“DC Water”)	202-612-3400 202-264-3835	Water mains and sewers
DDOT	202-442-4549 202-671-2710 (day) 202-727-6161 (night) 202-698-3677	Fire alarm electrical systems Street lighting inspection Traffic signal systems

26. COORDINATION WITH POTOMAC ELECTRIC POWER COMPANY:

The Contractor shall have to access Potomac Electric Power Company (PEPCO) manholes. All work involved with PEPCO facilities shall be performed in conformance with the PEPCO requirements. The Contractor shall coordinate with PEPCO for the following:

Payment to PEPCO for manhole entry before any entry into their manholes;

Payment to PEPCO for any PEPCO forces work [Street Light Fixtures (SLF) - Work Orders];

To have each "PEPCO MANHOLE" inspected by PEPCO forces in the presence of the Electrical Contractor on this contract for safety, clearing of the cables racked on the walls, spotting of the wall for new conduit penetrations and the knowledge of the location of each feed manhole for the traffic controller cabinets.

Installation of any sensor, repeater, digital radio, or access point on a PEPCO pole or facility.

All work performed within PEPCO facilities shall be performed in conformance with all PEPCO requirements. The Contractor shall initiate communication with PEPCO as early as possible after execution of this contract for the purpose of establishing scheduling guidelines to exchange telephone numbers between the principal's points of contact and to develop a contractual relationship to facilitate payment. The PEPCO representative shall be:

Mr. Joseph D. Schall, Manager
Customer Design - DC
Potomac Electric Power Company
701 Ninth Street N.W., Room 6005
Washington, D.C. 20068
Telephone (202) 872-2844
Facsimile (202) 331-6234
e-mail: jdschall@pepco.com

MEASURE AND PAYMENT. No direct measure or payment shall be made. The cost of coordination with PEPCO shall be incidental to various pay items.

27. COORDINATION WITH METRICOM

Located on some streetlights within the limits of this project may be radios, which are owned by Metricom. They are attached to the arm behind the luminaire, with a power feed connected to the photocell receptacle. The Contractor shall call Metricom, Mr. Jeff Bernard (phone no. 703-928- 5799) 48 hours.

28. COORDINATION WITH WMATA

The Contractor shall coordinate with WMATA prior to installation of sensors. Some detection equipment may require installation or maintenance of traffic equipment to be placed near/at WMATA bus stops. The Contractor shall maintain all WMATA station/stop activity during installation/testing activities.

29. ACCEPTANCE, GUARANTEE, AND FINAL APPROVAL

In addition to the testing special provisions below, refer to the System Test Plan (Section 34).

Completed On-Site Stand Alone Tests (SAT)

Acceptance of the Contractors field work shall be given by the Engineer after inspection and verification that all the field work, as defined in the contract documents, special provisions, technical specifications and project plans has been satisfactorily completed, including provision of GPS coordinates for all installed sensors and pole mounted detection equipment. This acceptance can be granted as individual intersection locations are tested and completed.

Completed the Final System Acceptance Tests (FSAT)

Acceptance of the Contractors field and traffic signal integration work shall be given by the Engineer after inspection and verification that all the work, as defined in the contract documents, special provisions, technical specifications and project plans has been satisfactorily completed. FSAT is a two-step process. The two tests consist of the Field FSAT and TMC FSAT. The Field FSAT can be granted at individual intersection locations, provided detection is conveyed, accessed, and verified in the 2070E traffic signal as accurate and complete in accordance with the System Test Plan (Section 34) and Data Quality (Section 33). The TMC FSAT cannot begin until all intersections have completed their individual FSAT and has been accepted. The TMC FSAT will verify that the detection data accepted at the intersection level is communicated and received at the TMC. Should the TMC FSAT not be accepted, the contractor shall assist the DDOT CA to identify necessary mitigations to pass the TMC FSAT. The TMC FSAT must be completed before the OAT can begin.

Completed the Operational Acceptance Tests (OAT)

After the Engineer has granted FSAT acceptance of all intersections and the TMC, all sites shall concurrently operate for 60 consecutive calendar days without any type of failure of Contractor supplied equipment (hardware, software, and firmware). A failure shall be defined as one that results in the operational loss of one or more components of the traffic sensor, sensor communication system, cabling, cabinet components and all equipment furnished and installed by the Contractor in the field. The Contractor shall refer to the OAT portion of Section 34. During the OAT, manual counting by the Engineer, or his designee, shall occur. Any vehicle detection location whose counts that fall below the accuracy level, as defined in this document, shall be documented and the Contractor shall be immediately notified. The Contractor must immediately (with 24-hours) remediate the error(s) to create count data within the accuracy levels. Failure to complete this remediation shall automatically terminate the OAT.

The purpose of this requirement is to demonstrate that each site is properly installed, is free from identified malfunctions, exhibits stable and reliable performance, and complies with all contract specifications and requirements, and properly functions as part of the adaptive system and local 2070E controller operation. This 60 day period shall apply to each and all projects covered under this contract, and shall include emergency on-site maintenance or repair completed with 24 hours of notification by the Engineer, or designee. The Contractor shall perform on-site diagnosis and troubleshooting and repair or replacement of failed materials or equipment, as requested by the Engineer, or designee.

Manufacturer's standard warranties that extend beyond the Contractor's warranty period shall automatically transfer to the District of Columbia government. The Contractor shall inform the manufacturer of this requirement prior to the purchase of the equipment, and provide to the Engineer a written agreement of compliance from the manufacturer.

Final acceptance of the work shall be given at the end of the project's 60 day OAT. All work including completion of all required permanent street cut repairs must be completed to the satisfaction of the Engineer before final acceptance is given and the Contractor is relieved from maintenance responsibility.

The project Critical Path Method (CPM) schedule for each project shall display as milestones with projected initial and final acceptance dates.

MEASURE AND PAYMENT. Warranties shall not be measured, but the cost of warranties and incidentals shall be included in the contract unit price to furnish and install materials and equipment specified in the contract documents. The payment shall be full compensation for all testing, labor, tools, materials, equipment and incidentals.

30. FIELD LAYOUT

This work shall consist of furnishing all lines and grades, etc. as necessary for the project construction, in accordance with Section 108.14 of the DDOT Standard Specifications for Highways and Structures, 2013.

MEASURE AND PAYMENT. This special provision features no measure and payment Provision. The cost for layout, surveying, etc. and all incidentals required to support this special provision shall be included in the cost of furnishing and installing materials and equipment specified in the contract documents as appropriate for the project.

31. EROSION AND SEDIMENT CONTROL

This work shall consist of erecting temporary measures to control soil erosion and sediment on individual construction projects, in accordance with Section 618 of the DDOT Standard Specifications for Highways and Structures, 2013.

MEASUREMENT AND PAYMENT. This special provision features no measure and payment Provision. The cost of this item shall be incidental to various contract pay items

32. WARRANTIES

GENERAL. The provisions of the section below shall not operate to deprive the Department of other rights the Department may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor as provided by law or under the requirements of the Contract Documents.

Notwithstanding, the bid document, any inspection or approval by the Department of the equipment or its installation, or the existence of any patent or trade name, the Contractor nevertheless warrants and represents that all equipment and the other items including the hardware, software, firmware and other items supplied to the Department hereunder and all workmanship shall be in accordance with this Contract, shall be fully fit for performance and shall operate in accordance with the requirements of the Contract Documents. The Contractor guarantees that all equipment and other items to be supplied meet original manufacturer's specifications. The Contractor guarantees all equipment and other items to be supplied and workmanship against defects or failures in workmanship and materials, excepting to the extent of defects or failures which the Contractor demonstrates to the satisfaction of the Department have arisen by reason of accident, abuse or negligence or

fault of the Department, its agents, employees, Licensees or invitees, and not due to fault on the Contractor's part. In the event of defects or failures in said equipment, or other items, or workmanship or any part thereof, then upon receipt of notice thereof from the Department, the Contractor's warranty obligations for all detection hardware, proposed traffic signal controller cabinet, and associated equipment required for operation shall be to repair or replace and make operational all System components within 72 hours of being notified of the condition at no cost to the Department.

WARRANTY PERIOD. The obligations of Contractor to remedy defects shall extend through the manufacturer's warranty period to a date up to five (5) years after the completion and approval of the OAT for all equipment including, but not limited to hardware, software, firmware, materials, systems, subsystems, conduit, cabling, wiring, and cabinets furnished and installed under this Contract.

MEASURE AND PAYMENT. No direct measure or payment shall be made. The cost for warranties shall be reflected, and distributed among the various contract Pay Items.

33. DATA QUALITY ASSURANCE

The Contractor is responsible for the provision of accurate detector data, within the limitations of the technology to the DDOT local 2070E traffic signal controller and to the DDOT TMC. As part of System Testing, described below and in Section 34, the Contractor shall validate that data is being collected at the maximum efficiency of the technology being utilized, as documented by the manufacturer. The Contractor shall not be paid for installing equipment until the required testing (SAT, FSAT and OAT) as described in Section 34, and the requirements below are met or exceeded.

DATA PERFORMANCE CRITERIA.

All detector zones – including system, advance, and stop bar detection zones – shall be reviewed and analyzed by the Contractor for valid operation, and documentation shall be submitted to DDOT for review and approval. Detection zones that do not pass review and approval may be subject to further investigation. Examples of instances in which zones may not be approved include, but are not limited to, the following:

- A. Periods of zero traffic flow rate for any lane for a period of 5 minutes.
- B. Peak hour flow rate with incorrect directional relationships (normal is morning rush one direction and evening rush the opposite).
- C. Time stamp indications of detection latency or clock drift.
- D. Counts which fall outside of the expected values based on historical data.
- E. Counts with errors in classification data for the location counted.
- F. Counts that vary from manual counts collected during the District's inspection program by more than 5% under the following conditions:
- G. Under free flow conditions, (during off peak hours), count flow rate error should be within 5 % over 15-minute intervals over all the lanes in all sites.

- H. Under stop and go traffic conditions, (during peak hours), count flow rate error should be less than 10 % over 15-minute intervals over all the lanes in all sites.
- I. Vehicle speed under all conditions, given a 15 minutes period, shall be within 10% of the manual detected average.
- J. Lane occupancy under all conditions, given a 15 minutes period, shall be within 10% of the manual detected average.
- K. Data Calculation Criteria The following formula is used to calculate the percentage of error that may have occurred during a manual count.
- L. $\% \text{ Difference} = (\text{Detector Count} - \text{Visual Count}) / \text{Visual Count} * 100$
- M. Detectors used in multi-sensor (“long loop equivalent”) presence detection must sustain a presence output for a minimum of 5 minutes before tuning out the vehicle.

If Quality Assurance review indicates invalid detection count or presence data, the Contractor shall be directed to investigate the problem for up to one (1) year. The DDOT CA shall review and consider any Contractor explanation of suspected invalid data. The DDOT CA alone shall make the final determination on the validity of the counts, speed, and occupancy as to which detector data are or are not valid for use for factor creation purposes.

Any detection system component that generates invalid data shall be considered incomplete and won't be paid until Contractor's investigation results are accepted by DDOT.

MEASURE AND PAYMENT. No direct measure or payment shall be made. The cost of detection quality assurance shall be reflected, and distributed among the various contract Pay Items.

34. SYSTEM TESTING

This section describes the testing procedures that are required to be performed by the Contractor to ensure that the system elements fulfill the requirements of these Special Provisions and are properly integrated to achieve a fully successful traffic adaptive signal system. All System Testing shall meet requirements outlined in Section 29 for Acceptance, Guarantee, and Final Approval. Testing Payment for all system testing is considered incidental to the items being tested. No additional payment shall be made.

GENERAL. Initial equipment submittals are required by the Contractor to demonstrate that the equipment that shall be supplied for the project has the capability to meet the plans and specifications required under this contract. The level of effort required for the submittal material could vary depending on the complexity of the equipment and the degree to which the proposed equipment is off-the-shelf or custom in nature.

Furnish a complete list of equipment and material within 30 calendar days after Notice-to-Proceed. Include the name, manufacturer, part number and material specifications as applicable. This material should include software documentation, including configuration manuals, user manuals, descriptive material, (cut-sheets, drawings, brochures, etc.), for each type of equipment and apparatus proposed for this project to demonstrate that the intended equipment or integration of intended equipment shall meet the functional objectives and specifications of the system. Include in these documents sufficient technical data for

complete evaluation of the proposed system by the Engineer. Provide original manuals or brochures or copies equal to originals.

Within 30 calendar days of the Notice-to-Proceed, furnish for approval all configuration manuals, user manuals, installation manuals, troubleshooting manuals, system configuration manuals, and maintenance manuals for all equipment installed, integrated and configured under this project.

SYSTEM TEST PLAN

Prior to conducting any testing, as per this section, the Contractor must submit a detailed detection testing plan compliant with equipment vendor requirements and gain approval of the SAT, FSAT and OAT procedures. All testing procedures shall provide an overall testing compliance matrix to summarize all the functionalities from these special provisions. All testing procedures shall include, but not limited to, the following:

Specification requirements, as identified in this project, including data quality (see Section 33) that each test shall satisfy.

- A. Description of the test.
- B. Step-by-step procedures on conducting the test and the perceived outcome from each procedure.
- C. A (P)ass or (F)ail box at the end of each procedure to be checked by the tester.
- D. A comments section to capture any notes during the testing.
- E. A signature line and date for the tester.
- F. A signature line and date for the DDOT or Designee.

No testing shall commence until DDOT Engineer or Designee has reviewed and approved the testing procedure to be conducted.

SYSTEM TESTING

The Contractor shall provide a minimum of ten (10) calendar days notification and testing schedule to the Engineer prior to the start of any testing. Advanced notification shall provide the Department time to coordinate the necessary resources required to observe the testing procedures. The testing schedule shall detail the proposed location, anticipated date, time of day, and duration of the test for each site. The Contractor shall provide a weekly testing schedule to the Department for review and approval.

The Contractor shall obtain the services of a site Engineer/technical advisor from the manufacturer to assist in the construction, set up, conditioning, calibration and testing of the complete installation. The manufacturer or manufacturer's representative shall be present during all installation activities and testing.

The Contractor or their representative shall perform calibration and acceptance by running tests and following the procedures outlined by the manufacturer, and approved by the Department. Contractor shall perform manual traffic flow rate counts which must agree with system detector data within standard tolerances (see Section 33).

Conduct the following tests on each piece of equipment and system component, furnished and installed under this contract, in the order indicated:

On-Site Stand Alone Tests (SAT)

Following the installation of equipment at each intersection location, the Contractor shall conduct field tests at each intersection exercising all stand-alone functionalities requirements to verify that components, modules or sub-systems of equipment operate as specified. The Contractor shall provide the required equipment including a portable computer, if required, and test software in order to perform local system operations and diagnostic test procedures. The Contractor shall conduct individual component tests prior to connecting the systems to the Department's 2070E controller. Testing must be conducted with a member of the Department or their designee present at all times to validate that testing is being performed correctly.

The Contractor shall provide a checklist of equipment functionalities, approved by DDOT, listing each requirement to be tested for each field installation. The Contractor shall submit test procedures, checklist, and summary sheets for the Department's approval a minimum of 30 calendar days prior to performing tests. The Contractor shall not begin testing until test procedures have been approved by DDOT. All SAT shall be conducted within the presence of appropriate Department personnel or their designee. All SAT shall be signed-off in the field at the successful completion of the test by both the Contractor and the appropriate Department personnel or their designee.

The Contractor shall conduct the SAT in the presence of DDOT's CA or designated staff person. This test shall be conducted at each location as indicated in the Contract Plans to demonstrate the following for each detection system location:

- A. All hardware and equipment has been installed properly and at the correct location. This includes the Grind-Resistant (deep installation) Pavement Sensor; Repeater (if required); Access Point (AP) and Contact Closure Master Card, or Access Point Controller Card (APCC), APCC Isolator, and Digital Radio (DR); Contact Closure Expansion Card (if required); and outdoor rated CAT- 5e cable.
- B. Demonstrate the power requirements from the traffic signal control cabinet to the AP or DR are within acceptable limits.
- C. Demonstrate that the CAT-5e cable is properly connected and weather tight between the access point or the digital radios and the in-cabinet equipment.
- D. Demonstrate that the cabinet components are neatly installed and labeled.
- E. Demonstrate that each detector zone can provide accurate (as defined in Section 33) occupancy and count data.
- F. After all detection system components are functional, demonstrate using the 2070E traffic signal controller menus the ability to identify and receive calls for all detector zones at the intersection. Identification also includes the ability to add/delete/edit existing or new field elements at each site.

- G. Demonstrate the detector system ability to have power disconnected, then reconnected and being able to automatically function properly.

DDOT CA shall determine if the intersection detection is operating properly by signing-off on the SAT form, for that location. The Contractor shall not be permitted to begin FSAT on a location until the intersection has been approved by DDOT or its designee.

Final System Acceptance Tests (FSAT)

The Contractor shall conduct the FSAT in the presence of the Department's Engineer or designee.

FSAT is a two step process: Field FSAT and TMC FSAT. Step 1, Field FSAT can be granted at individual intersection locations, provided detection is conveyed, accessed, and verified in the 2070E traffic signal controller as accurate and complete in accordance with this System Test Plan. Step 2, TMC FSAT cannot begin until all intersections have had their individual Field FSAT. The TMC FSAT will verify that the detection data accepted at the intersection level is communicated and received at the TMC. Should the TMC FSAT test not be accepted, the contractor shall assist the DDOT CA to identify necessary mitigations to pass the TMC FSAT. The TMC FSAT must be completed before the OAT can begin.

Field FSAT shall be conducted from the Department's traffic signal control front panel display, as required, to verify that the overall system can transmit data that meets the data accuracy requirements in Section 33 of these Special Provisions. In addition, all the user access software shall be tested as part of the FSAT.

The Contractor shall provide and have approved by the Department a Testing Plan and schedule to conduct testing in the order indicated. The Contractor shall not begin a later stage of testing until earlier stage(s) of testing have been successfully completed and approved by the Department. The Contractor shall not be allowed to begin testing until the Test Plan has been approved by the Department.

The acceptance of each stage of testing does not imply that problems found at a later date or stage of testing shall not require the Contractor to return to an earlier stage of testing for a component or sub-system.

In the event that 10 percent of similar equipment malfunctions during the test period, the Department may declare a system defect and require replacement of all similar equipment at no additional cost to the Department. Equipment malfunction shall include inaccurate data, as per Section 33, transfer; failure of any SAT tested items; or failure of a detector card to transmit data within the unit's specified time frame. When a system defect is declared, the Contractor shall restart the test for that specific system. The Contractor shall begin the test period when all similar equipment is replaced and a retest has been successfully completed.

The Contractor shall provide test documentation, including at a minimum, test procedures, checklist, test forms and data summary sheets for each item. The Contractor shall tailor test documentation for each test and for each item. The Contractor shall reference test

procedures, test forms and checklists to these Special Provisions listing each requirement to be tested, for each item.

The Contractor shall submit test documentation for the Department's approval. The Contractor shall resubmit all test documentation, which does not receive the Department's approval. The Contractor shall not begin testing for approval, payment or acceptance until test documentation is approved. After test documentation is approved, the Contractor shall provide at least 10 working days' notice prior to all tests to permit the Department to observe each test.

Testing must be conducted with a member of the Department or their designee present at all times to validate that testing is being performed correctly. The Sensor Test Sheet (included in these specifications) must be completed by both the Contractor and the Department. The Contractor may supply an alternative test form that must be approved by the Department prior to testing.

The results of each test shall be compared with the requirements specified herein. Failure to conform to the requirements of any test shall be considered a defect, and equipment shall be subject to rejection by the Department.

The Contractor shall analyze and categorize all defects as to whether they are limited to the specific unit being tested or could be potential problems in all such units.

If a unit has been modified as a result of a system test failure, the Contractor shall prepare a report and deliver it to the Department for approval. The Contractor shall describe in the report the nature of the failure and the corrective action taken. If a failure pattern, as defined by the Department, develops, the Department may direct that design and construction modifications be made to all similar units without additional cost to the Department.

For the case of problems common to many units, the Contractor shall modify all deliverable units without additional cost to the Department, including design changes required to pass factory tests.

Equipment rejected because of problems limited to the specific unit being tested, may be offered again for retest provided all non-compliances have been corrected and retested by the Contractor and evidence thereof submitted to the Department.

The Contractor shall test equipment in accordance with approved test procedures only. All pertinent quantitative and qualitative test results shall be recorded on data summary sheets for each piece of equipment tested.

The Contractor shall provide certification of test results not witnessed by the Department by a qualified representative. The Contractor shall submit all test records to the Department immediately following the test. The Contractor shall submit dated certification that equipment furnished meets the Special Provisions and has been satisfactorily tested in accordance with this section.

The Contractor shall complete testing for each equipment unit in as few consecutive calendar days as possible. The Contractor shall schedule testing with ample additional time allotted for the Department to request that certain portions of a test be repeated.

If any of the test results fail to conform to the requirements of these Special Provisions, the equipment, sub-system or system failing shall be considered a defective item, and shall be subject to rejection by the Department. Rejected equipment, sub-systems or systems may be offered again for a re-test, provided all the defects have been rectified and the required documentation submitted thereof to the Department. The Contractor shall repeat the test until successful at no additional cost to the Department.

All parts of the FSAT (Field and TMC) shall be signed-off after the successful completion of the tests by both the Contractor and the appropriate Department personnel or their designee prior to beginning the OAT.

60-Day Operational Acceptance Test (OAT)

The Contractor shall commence the 60- day OAT following successful completion of all components of the FSAT conducted by the Contractor and attended by the Department and the training program described in the Special Provision section titled 'Training.' The Contractor shall start the OAT test for all intersections at the same time. The 60-day OAT must be completed within 80 calendar days.

The Contractor shall provide complete operations support as required for the duration of the 60- day test period to the Department's personnel, who shall be exercising the system and performing OAT on the complete system on a day-to-day basis. The Contractor shall provide operational support for all installed equipment including troubleshooting and diagnostics and element and component replacement of system elements not operating as specified.

The Contractor shall provide communications between the Contractor and the Department by means of a local telephone number at which the Contractor can be reached. The Contractor must be available 7-days per week, 24 hours per day, at all times in the event that after hour situations require his immediate attention.

The intent of the 60-day OAT is to have all systems and equipment furnished under this contract operate in a fully functional manner as required by these Special Provisions for a total duration of at least 60 consecutive calendar days. DDOT will conduct the 60-day OAT and notify the Contractor of any malfunction.

The equipment shall be declared to be malfunctioning when any of the following conditions occurs as a result of a failure of the Contractor provided equipment, hardware or software:

Data cannot be retrieved, or the system operated, from the Laptop PC tied into the system.

The data is not accurate within the acceptance levels as specified in Section 33.

If any equipment malfunction occurs, the 60-day OAT duration shall be calculated as follows:

If the equipment malfunction occurs on or before 4:30 p.m., no credit shall be given for that day.

If the equipment malfunction occurs after 4:30 p.m., credit shall be given for that day.

Other occurrences not covered in the above, or challenged by the Contractor shall be reviewed by the Department (or its designee) to determine if credit or no credit shall be given.

The Contractor shall be notified by the Department's Personnel immediately following the occurrence of the equipment malfunction. The Contractor's receipt of notification is defined as when the Contractor's personnel or the Contractor's answering service receives the call.

The Contractor shall restore the malfunctioning equipment to a fully functional and operational condition.

The Contractor shall maintain daily records of stoppages and resumptions of the 60-Day OAT. The Contractor shall verify against the records maintained by the Department for accuracy.

A total of 80 calendar days is provided to complete the 60-day OAT. The 20 calendar day float is provided to accommodate the period for equipment malfunctions and equipment restoration efforts. If the Contractor does not complete the OAT, within the specified time, liquidated damages, as specified in Section 2 shall apply.

In the case where ten percent (10%) of similar equipment malfunctions during the test period, the Department may declare a system defect and require replacement of all similar equipment. When a system defect is declared, the Contractor shall restart the 60-Day test for that specific system. The 60-day test period shall be restarted when all similar equipment is replaced and a system acceptance retest has been successfully completed.

If any of the test results fail to conform to the requirements of these Special Provisions, the equipment, sub-system or system failing shall be considered a defective item, and shall be subject to rejection by the Department. Rejected equipment, sub-systems or systems may be offered again for a re-test, provided all the defects have been rectified and the required documentation submitted thereof to the Department. The Contractor shall repeat the test until successful at no additional cost to the Department. The Department or its designee has the right to stop the OAT, at any time, should the system produce numerous errors, or if they feel the spirit of the specifications are not being demonstrated by the OAT. If the OAT is stopped, the Contractor shall be required to repeat the entire 60-day test only after all errors and malfunctions documented during the OAT have been fixed and tested by the Contractor. The Contractor shall provide written proof to the Department that each error or malfunction that stopped the OAT has been fixed and properly testing as it operating within an acceptable level.

The Contractor shall submit documentation as required, for all activities performed during this test period. The Contractor shall submit to the Department one copy of the activity record within one working day following restoration of normal operations, for approval.

The Contractor shall submit a record keeping form and procedure to the Department for approval. The Contractor shall provide a daily log, which includes every intersection within the Scope of Work. The Department shall approve the Contractor's method of documenting the 60-Day OAT prior to beginning the test. The Contractor shall indicate on the form the date and scope of each activity. As a minimum, the Contractor shall record for each entry the following:

- A. Did the detection equipment operate, without error, during that particular day?
- B. Identify all equipment on which work is performed.
- C. Cause of equipment malfunction (if any).
- D. A description of the type of work performed.
- E. Necessary labor, materials, and special equipment used.
- F. Time required in completing the activity.
- G. The Contractor shall make the maintenance and activity record log available to the Department upon request.

After the completion of the 60-day OAT, the Contractor shall conduct complete system diagnostics for field equipment as follows:

- A. Equipment testing and adjustment of settings and parameters.
- B. Check component operations with respect to these Special Provisions.

Also, following the completion of 60-day OAT, the Contractor shall perform cabinet blowouts, component cleaning and filter replacements.

The Contractor shall submit to the Department within two weeks from the date of final acceptance, five copies of the complete activity record for all systems.

EQUIPMENT MANUALS.

Provide electronic copy and ten (10) hard copies of operating, configuration, maintenance and installation manuals for each type of equipment item to be furnished. Include in the manuals sufficient information to operate and maintain the equipment including schematic wiring and interconnection diagrams; complete instructions for proper installation including equipment outlines, mounting, weight, power and cooling requirements; a complete parts list and a list of recommended spares.

Supply all operational manuals of equipment to be utilized under this contract to DDOT within 30 calendar days of Notice-to-Proceed in electronic PDF format, in addition to the hard copies required above. Also include the systems interface control documents that are XML based. Include text, which completely describes all functional capabilities of the equipment. Explain all adjustments, how they are performed and their effect on equipment operation. Include flow charts, which describe troubleshooting procedures in a logical manner. Define expected signal levels and waveforms at key test points. Describe required test equipment and incorporate descriptions of its use in manual sections dealing with maintenance and repair of equipment items.

Include information necessary for the proper installation, start-up, initialization, operation, and fine-tuning of the equipment item.

Include environmental and operational specifications such as operating temperature range, power requirements, equipment weight, special handling considerations and equipment power dissipation rates, and cooling requirements.

SHOP DRAWINGS.

The provisions of Section 105.02.B of the DDOT Standard Specifications for Highways and Structures, 2013 shall apply to this contract as amended below.

Submit shop drawings on 22 in. (H) x 34 in. (W) sheets. Include, at a minimum the following in shop drawings:

- Wiring Diagrams
- Installation Drawings
- Detail Drawings

All shop drawings must be submitted to the Department for review and approval prior to the commencement of construction. Construction shall not begin until the shop drawings are approved and returned to the Contractor.

CONTROL CABINET AND SERVICE PANEL DRAWINGS. Provide drawings, which show all terminals, terminations and connections within each equipment cabinet. At each terminal, illustrate the terminal designation for the other end of the wire or cable. Cross-reference connections that go to equipment harnesses or connectors to the nomenclature used in that equipment's manual.

Tailor drawings to each individual cabinet.

Submit all drawings to be attached in cabinets to the Engineer for approval at least 30 calendar days prior to the SAT. Supply marked up copies of all cabinet drawings to the Engineer at the time of cabinet installation. Enclose drawings in a clear, plastic, waterproof enclosure.

Do not conduct the SAT if the four (4) draft copies of all drawings are not submitted to the Engineer for approval at least thirty (30) calendar days prior to the anticipated start of the SAT.

INSTALLATION SUMMARY.

Compile and furnish as-built installation summaries within 14 calendar days of the start of the 60-day OAT. This summary shall include the following information:

- A. Equipment inventory including quantities of all equipment supplied under this contract (including all field equipment, hardware, software and firmware), model number, manufacturer, and distributors for all equipment.
- B. Cable lists specifying cable, wire pair and connector and pin assignments for all signal, power and ground leads.
- C. Composite drawing of the system and cabinets and racks
- D. An As-Built plan set included.

The Engineer has the right to stop the 60-day OAT if the installation summaries are not submitted within 14 calendar days of the start of the test.

SYSTEM OPERATIONS AND MAINTENANCE MANUALS.

Develop and deliver comprehensive systems operation and maintenance manuals for all the systems furnished under this contract. The objective of each manual is to present a systems oriented view of the complete installation, operation and maintenance requirements of the system. Include a detailed functional description of the system. Include a description and streamlined step-by-step procedure for all routine operating events. Include equipment preventative maintenance procedures and equipment fine-tuning and adjustment procedures. Ten (10) paper versions and one (1) electronic version (PDF format) of all manuals should be furnished to the Engineer. The systems operations and maintenance manuals shall include hardware, software and firmware installation instructions, configuration procedures, and step by step diagnostic features.

Submit all manuals to the Engineer for approval at least 14 calendar days prior to the anticipated start of the 60-day OAT.

TRAINING PLANS.

The Contractor shall supply to DDOT, before the beginning of FSAT a specific training plan that details how the Contractor shall train operators, supervisors and maintenance personnel on each piece of field equipment and TMC equipment. The Training Plan shall be submitted to DDOT for approval within 30 calendar days for approval before the start of the SAT. No testing shall begin until system training has been provided to DDOT.

DOCUMENTATION OF ALL SERIAL NUMBERS AND FIRMWARE VERSIONS.

The Contractor shall supply to DDOT, before the beginning of OAT, a database in MS Excel, of all equipment serial numbers by each location. Serial numbers shall include all sensor/detectors, access points, digital radios, repeaters, Digital Subscriber Line (DSL) modems and firmware versions for all equipment. The format of the database shall be submitted to DDOT within 20 calendar days from the Notice-to-Proceed date for review and approval.

MEASURE AND PAYMENT.

No direct measure or payment shall be made for system testing. The cost of system testing shall be reflected, and distributed among the various contract pay items and shall include the Contractor creating testing plans for all subsystems (in-pavement magnetic sensors and video detection) and conducting all testing described above.

35. STANDARDS AND GUIDELINES

GENERAL. The publications listed below, of the issue in effect on the date of the bid, form a part of these technical specifications to the extent referenced. The publications are referred to in the text by basic designation only. In the event of a conflict between the publications referenced and the detailed content of the technical specification sections that follow, the latter shall be considered a superseding requirement.

1. National Electrical Manufacturers Association (NEMA): Standards Publications/No. 250 Enclosures for Electrical Equipment (1000 Volts Maximum)

2. Electronics Industries Association (EIA):
 - a. EIA/TIA-232-E Interface between Data Terminal Equipment and Data Circuit Terminating Equipment Employing Serial Binary Data Interchange.
 - b. EIA-310-C Racks, panels, and Associated Equipment.
 - c. EIA-359-A Colors for Color Identification and Coding.
 - d. EIA-422-A Electrical Characteristics of Balanced Voltage Digital Interface Circuits.
3. District of Columbia Standard Specifications for Highways and Structures (2013).
4. National Electric Code.
5. Underwriters Laboratories (UL).
6. US Department of Energy Standards.
7. Federal standard 595B.
8. Federal standard colors.
9. DuPont IMRON specification 31UH.
10. American Society for Testing Materials
11. Manual on Uniform Traffic Control Devices (MUTCD) 2009
12. Traffic Engineering Handbook, Institute of Transportation Engineers
13. National Transportation Communication for ITS protocol (NTCIP)

36. QUALITY ASSURANCE

GENERAL. The Contractor shall develop a quality control program and submit it to the District Engineer for review and approval within ten (10) working days after issuance of a Notice to Proceed (NTP).

The Contractor shall be required to resubmit a quality control program that has not been approved by the District Engineer within seven (7) calendar days for approval, unless otherwise noted.

The Contractor shall follow the approved quality control program for the duration of the contract.

The Contractor shall not order equipment and/or materials without an approved quality control program.

Any deviations from the contract plans shall be submitted for approval by the District Engineer.

At a minimum the quality control program shall include:

1. Key staff for the project, as well as their responsibilities

2. Quality control review milestones
3. Delivery time based on project schedule

37. SHOP AND WORKING DRAWINGS

This Special Provision supplements 105.02(B) of the Standard Specifications.

Shop and Working Drawings for all work shall be submitted to:

Mr. Jason Tao
ITS/Traffic Division
District Department of Transportation
55 M Street, SE, 6th Floor
Washington, D.C. 20003

Materials certifications and laboratory test reports shall be submitted to:

Quality Assurance and Quality Control Division
Materials Testing Branch
D.C. Department of Transportation
55 M Street SE, Suite 400
Washington, D.C. 20003

38. AS-BUILT DRAWINGS

This Special Provision supplements 108.12 of the Standard Specifications.

DDOT AS-BUILT (ITEM 108 004) – During the entire construction period, the Contractor shall maintain one complete record set of Contract Drawings on which he shall annotate daily all deviations, field changes, changes accomplished by change order, as constructed depths of footings and structural elements, horizontal and vertical locations of underground electrical, utility facilities referenced to survey data and temporary construction left in place (if permitted), and GPS coordinates of all installed sensors and pole-mounted detection equipment. The Contractor shall make this annotated record set of Contract Drawings available for review upon the request of the Engineer.

The Engineer will furnish to the Contractor electronic files of the Contract Drawings for Reproduction. The Contractor shall make permanent modifications to the reproducible set by adding the revisions from the annotated record set. The completed as built drawings shall be certified by an officer of the Contractor using a stamp as follows:

AS-BUILT

(Date)

I certify that this drawing accurately depicts the work as constructed.

(An Officer of the Contractor's Company)

Signature _____ Title

CONTRACTOR'S NAME

When the contract is completed and the revisions have all been digitally transcribed to the reproducible set, the Contractor shall copy the electronic files on a CD ROM. The Contractor shall then prepare and deliver to DDOT TOA two CD ROM copies of the electronic files of the final as built drawings, the modified reproducible set, five (5) bound half-size sets on bond paper and one additional CD ROM with as built drawing information of street lighting plans only. All as built drawings shall be submitted in Microstation and PDF formats.

PARTIAL SUBMISSIONS. To facilitate inspections and partial acceptance, the Engineer may request the submission of as built drawings for all or part of the Work and after those work elements have been completed, but prior to contract completion.

MEASUREMENT AND PAYMENT. Unit of measure for As Built Drawings will be the job. No measure will be made for this work. Payment for As Built Drawings will be made at the lump sum price, which payment will include all performance of work as specified herein.

39. CONTRACTOR'S SUBMITTALS

This Special Provision supplements Section 105.02 (B) of the DDOT Standard Specifications for Highways and Structures, 2013.

Selected catalog cuts, material certifications, laboratory test reports, and other required submittals shall be subject to review and approval by the Engineer. The Contractor is encouraged to provide submittals for review as soon as practical after project notice to proceed is issued. Every effort shall be made to respond to these submittals within five (5) working days of receipt by the Engineer. The Contractor shall be required to submit electronic copies (in PDF format) to the email address below. For all submissions that cannot be made electronically, the Contractor shall submit two (2) copies of all submittals to:

Mr. Jason Tao
ITS/Traffic Division
District Department of Transportation
55 M Street, SE, 6th Floor
Washington, D.C. 20003
jason.tao@dc.gov

40. SALVAGED MATERIAL

This Special Provision supplements 106 of the Standard Specifications.

Any salvaged materials considered by the Engineer to be useful to the District shall be delivered to a designated storage yard within the District of Columbia. All other materials shall be removed from the job site and be disposed of properly by the Contractor. No direct measure shall be made for this work. Payment for this work shall be incidental to the other pay items.

41. WORK HOURS

This Special Provision supplements and modifies Section 103, Article 17.C of the General Provisions, and Sections 105.10, 105.11 and 104.02.

The Contractor may not perform any work during peak-hours as defined as between 6:30 AM to 9:30 AM and 3:30 PM to 7:00 PM. The Contractor may not work at more than three (3) sites at one time, unless approved by the Engineer. All construction, configuration and cleanup must occur at each site before the Contractor can receive approval by DDOT to move onto the next site.

All of the Contractor's employees and sub-contractors working on this contract must carry an official DDOT work approval notice to show a public official/officer upon request. Any employee or sub-contractor not possessing the official approval letter shall be immediately removed from the job site until they obtain a copy of the official work letter.

The Contractor is permitted to schedule work after 7:00 PM only after gaining written approval from the COTR five (5) calendar days in advanced of the schedule work.

WORK HOURS.

Work requiring traffic lane closures, other than designated construction zones separated from adjacent traffic using concrete barriers, shall be performed at night between the following hours:

Monday through Friday overnight through to the following morning:
10:00 PM to 5:00 AM.

2. Upon written request and approval of the Engineer, single lane closures may be granted from:

Weekdays: 10:00 AM to 2:30 PM.
Weekends: Saturday 5:00 AM to Monday 5:00 AM

3. Work not affecting the travelling public and separated from adjacent traffic using concrete barriers may proceed outside the above timeframes.

4. Coordinate the work to minimize disruptions to traffic or other construction. Strictly confine all work to the lane closures.

5. Additional traffic lane closure restrictions are as follows:

Lane closures are not permitted on legal holidays nor on the day preceding nor the day following that legal holiday.

Lane closures are not permitted during the following events/holidays:

A. Easter April 17, 2014 at 6 a.m. until April 21, 2014 at 10 p.m.
April 2, 2015 at 6 a.m. until April 6, 2015 at 10 p.m.

B. Memorial Day May 23, 2014 at 6 a.m. until May 27 2014 at 10 p.m.
May 22, 2015 at 6 a.m. until May 26, 2015 at 10 p.m.

C. Independence Day July 2, 2014 at 6 a.m. until July 8, 2014 at 10 p.m.
July 2, 2015 at 6 a.m. until July 8, 2015 at 10 p.m.

D. Labor Day August 29, 2014 at 6 a.m. until Sept. 2, 2014 at 10 p.m.
September 4, 2015 at 6 a.m. until Sept. 7, 2015 at 10 p.m.

E. Thanksgiving Nov. 25, 2014 at 6 a.m. until Dec. 2, 2014 at 10 p.m.
Nov. 24, 2015 at 6 a.m. until Dec. 1, 2015 at 10 p.m.

F. Christmas/ New Years Dec. 23, 2014 at 6 a.m. until Jan. 2, 2015 at 10 p.m.
Dec. 23, 2015 at 6 a.m. until Jan. 4, 2016 at 10 p.m.

G. Special Events must be coordinated with the District of Columbia Department of Transportation.

If all lanes on this project are not fully opened to vehicular traffic in the hours outside the lane closure hours indicated above, the Contractor shall be assessed ROAD USERS LIQUIDATED DAMAGES for each lane that is not available as follows:

TIME PERIOD	ROAD USERS LIQUIDATED DAMAGES
Any time outside the allowed lane closure hours indicated above	\$835.00 per 15 minutes, or part of thereof, for each lane that is not available to vehicular traffic

42. WEEKEND WORK

This Special Provision modifies Section 103, Article 17.C of the General Provisions, and Section 105.10.

Weekend work may be required as determined by the Engineer in congested areas where serious traffic difficulties would result if the work were performed during the normal work week. The Contractor is permitted to schedule weekend work, between the hours of 9:30 AM and 3:30 PM, only after gaining written approval from the COTR.

It is estimated that the amount of weekend work shall not exceed five percent (5%) of total work to be performed under the contract.

Weekend or holiday work shall require prior written approval by the CA before commencing.

43. NIGHT WORK

Night work shall require prior written approval by the CA before commencing.

Requirements of 105.11 apply as modified.

The Contractor shall receive written approval from the COTR to perform night work a minimum of 5 calendar days before the work is to commence.

In addition, the Contractor shall maintain sufficient light illumination levels for safe operations in all active work areas during evening and night work. Temporary lighting for

the Contractor's operations shall comply with OSHA regulations, Section 1926.56, task requirements and as specified elsewhere in these Special Provisions.

Replace table in 105.11(A) with the following:

D.C. MAXIMUM PERMITTED NOISE LEVEL

(as defined in DC Law 2-53, District of Columbia Noise Control Act of 1977)

Zone	Maximum Noise Level, dBA	
	Daytime	Nighttime
Residential, Special Purpose Or Waterfront Zone	60	55
Commercial or Light Manufacturing Zone	65	60
Industrial Zone	70	65

44. PUBLIC SAFETY AND CONVENIENCE

The Contractor shall take every measure necessary to ensure the protection of personnel and property. When in the opinion of the District Engineer, construction operations constitute a hazard to traffic in any area, the Contractor may be required to suspend operations during certain hours to remove equipment from the roadway.

45. CONTRACTOR'S RESPONSIBILITY FOR WORK

This Special Provision supplements 107.15 of the Standard Specifications.

GENERAL.

Portions of the general project site will be open to the public during construction. The Contractor shall take the necessary measures to prevent vandalism and theft of materials, equipment and tools as well as the completed work on the project site. The District Department of Transportation shall not be held liable for any loss or damage resulting there from.

MEASURE AND PAYMENT. No direct measure or payment will be made. The cost of project security shall be reflected, and distributed among the various contract Pay items.

46. PROGRESS PHOTOGRAPHS – ITEM 108 002

DESCRIPTION.

The Contractor shall provide a photographic record showing the conditions existing on the site prior to commencement of work, designated conditions during work operations, and conditions after the completion of the contract. These photographs shall be provided electronically as directed by the Engineer and by CD at the completion of the project.

MEASURE AND PAYMENT. The unit of measure will be the job, with no actual measure taken. Payment for Progress Photographs will be made at the Contract lump sum price,

which payment will include specified requirements stated above and in the Contract Documents. The first partial payment will not be made until all existing conditions have been photographed and electronically received by DDOT.

47. MAINTENANCE OF HIGHWAY TRAFFIC – ITEM 612 002

This Special Provision supplements and modifies 104.02 and 616 of the Standard Specifications.

Supplementing first paragraph of 104.02, reference to the MUTCD shall be to the latest edition, with latest revisions or latest edition.

GENERAL.

Work consists of proper maintenance of vehicular and pedestrian traffic within and adjacent to the project and includes, but is not limited to the following for contract duration: safety officer, flaggers and watchmen; public convenience and safety; furnishing, placing, maintenance, removal and disposal of all traffic control devices as defined in the MUTCD (Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition, U.S. Department of Transportation, Federal Highway Administration and subsequent revisions.

Minimum requirements are presented below. Work includes all operational needs for proper traffic maintenance and coordination with the District of Columbia Department of Transportation (DDOT) traffic requirements outside the project area.

TRAFFIC CONTROLS.

The Contractor shall prepare and submit a proposed Traffic Control Plan (TCP) to the Engineer for approval prior to starting any construction. The TCP will be based upon the requirements and intents of the contract documents, the MUTCD, the Work Area Traffic Control Manual 2000 and the traffic flow restrictions, found in the Special Provisions. These plans shall be submitted as Shop Drawings and shall include the arrangement, size and location of all appropriate warning signs, Type III Barricades, portable PCC Barrier, etc., and any other devices deemed necessary. The Contractor shall schedule an appointment with DDOT TOA to discuss how the plan will be implemented and must receive approval from DDOT to implement the proposed plan. A copy of the approved TCP and permits must be kept on site at all times available for review by DDOT personnel.

During the entire construction period, the Contractor shall minimize interferences, as determined by the Engineer, with the adjacent neighborhood, including pollution, noise, safety and other effects. The Contractor must immediately remedy all interferences determined by the Engineer.

During all phases of construction, at no time shall the project be left unattended. Proper security measures shall be taken to keep unauthorized persons from entering into the construction areas.

Construction work zones shall be made safe for traffic and warning shall be provided by installing electronically illuminated traffic control devices such as flashing arrow panels and warning lights. Portable changeable message signs may be required to give the motoring

public advance notification of road conditions and road work two weeks prior to start of work. These devices shall be used in conjunction with other traffic control devices.

No material or equipment shall be placed or stored on the designated roadway during any phase of construction unless otherwise authorized.

Traffic control devices not in use during the current phase of work shall be removed from the work zone. Construction signs not in use shall be 100% covered. All traffic control devices used for maintenance of traffic shall remain the property of the Contractor and shall be removed from the project site upon completion of work.

TRAFFIC FLOW RESTRICTIONS

1. General

- a) Maintain traffic at all intersections and driveways during construction by sub-phases in accordance with DDOT Design Standard DWG. Nos. 616.12 and 616.14, "Typical Lane Closure – City Streets" and in accordance with the drawings and notes included in the contract documents. It is the ultimate responsibility of the Contractor to refine the details specific to each location and any conflicts in the details shall be resolved before implementation and shall not form as a basis for any claim.
- b) No parking shall be allowed during the construction period within the limits of construction.

2. Traffic flow restrictions are as follows:

- a) During construction traffic both the north and south ends of the project shall be channelized properly for smooth transition to lanes open to traffic in each direction. At each intersection with the side streets, alleys and driveways, traffic shall be maintained, with proper traffic control, by sub-phasing the construction.
- b) RUSH HOUR PERIODS – Rush hour / non-rush hour periods shall be:
 - AM Rush Hour: 6:30 AM to 9:30 AM, Monday through Friday
 - PM Rush Hour: 3:30 PM to 6:30 PM, Monday through Friday
 - Non-Rush Hour: 9:30 AM to 3:30 PM and 7:00PM to 6:30 AM, Monday through Friday.
 - 7:00 PM Friday through 6:30 AM Monday
- c) Maintenance of traffic lane requirements for holidays shall be as determined by the Chief Engineer.
- d) The contractor shall give seventy-two (72) hours prior notice to the Engineer when making a change in traffic flow patterns.

CONSTRUCTION PHASING NOTES.

The entire corridor shall not be closed for any period of time. All construction sequence phasing proposed by the Contractor must be approved by DDOT prior to implementation

and should allow no section of construction to adversely affect surrounding residents and community activities.

PEDESTRIAN SAFETY.

The Contractor shall provide pedestrians with a continuous 6-foot wide walkway past the construction work zone if space permits. A minimum 4-foot wide walkway may be authorized by the Engineer only if a wider space is not possible. The walkway shall be safe, convenient and replicate as nearly as possible the most desirable characteristics of sidewalks or footpaths. Pedestrians shall not be led into direct conflict with the work site operations or mainline traffic moving through or around the work site. All pedestrians including blind, hearing impaired and physically challenged shall be provided protection. All necessary signs and supports for closing sidewalks and detouring pedestrians and providing temporary ramps and/or protective walkways is the responsibility of the Contractor and no additional payment will be made.

FAILURE TO MAINTAIN ENTIRE PROJECT.

Failure on the part of the Contractor, at any time, to comply with the provisions of 104.02, 616 and this Special Provision will result in the immediate notification of the Contractor by the Engineer to comply with the required traffic maintenance provisions. In the event that the Contractor fails to make the needed corrections to unsatisfactory site maintenance so as to conform to the provisions of 104.02 and 616 within 24 hours after receipt of such notice, the Engineer may notify the Contractor to suspend all work at the contract work site until such time that the unsatisfactory site maintenance is corrected. In the event that the Contractor fails to respond to a notice of unsatisfactory site maintenance and correct the deficiency within 24 hours after receipt of such notice, the Engineer may immediately proceed with other forces and equipment to maintain the project. The entire cost of this maintenance by the District will be deducted from monies due the Contractor on the next monthly invoice.

A deduction of \$200.00 will be made from the Contractor's next invoice for each day, or portion thereof, that traffic maintenance deficiencies exist and will continue until the deficiencies are corrected and accepted by the Engineer. Any portion of a day will be considered a full day deduction. The amount of monies deducted will be a permanent deduction and will not be recoverable.

TRAFFIC CONTROL PLAN (TCP). To be provided by Contractor.

TRAFFIC CONTROLS. 104.02(C) applies.

TRAFFIC CONTROL DEVICES. Approved warning signs, channelizing drums, cones, arrow panels, etc., shall be provided to ensure motorists of positive guidance in advance of and through the work zone. Erection of regulatory signs such as stop, speed limit and no parking signs must be specifically authorized. Advance Warning signs shall be 48" x 48" in size and the face sheeting shall be Fluorescent Orange High Performance Wide Angle Retroreflective material or equal. Roll-up signs are approved; however, they also must be 48" x 48" in size and of the same Orange Fluorescent material. Note: Mesh roll-up signs are not approved. Sign Supports shall be of a spring-loaded type or equivalent. Tripod or A-frame sign stands are not approved. All traffic control devices shall be in new or like new condition. All traffic control devices used on this project shall meet the testing and evaluation criteria specified in NCHRP (National Cooperative Highway Research Program)

Report No. 350. Certifications that all traffic control devices meet said criteria shall be submitted to the Engineer for approval prior to use.

The temporary signs and markings placed in or adjacent to the work zone shall be consistent and visible at all times. The existing signs and markings may be covered and/or removed temporarily if the intended functions of these signs and markings will not be applicable during construction. However, they shall be replaced promptly when work is completed. All temporary signs no longer applicable to the work zone shall be removed or turned away from traffic.

NIGHT WORK.

During nighttime hours, the work site shall be made safe for traffic and installing electronically illuminated traffic control devices such as Flashing arrow Panels and warning lights shall provide warning. These devices shall be used in conjunction with other traffic control devices, and their flashing sequence and light intensity shall meet the requirements cited in the MUTCD. All traffic control devices shall be reflectorized during nighttime hours.

FLASHING AMBER WARNING LIGHTS, TYPE B. Two Type B lights shall be placed on the approach end of each row of the temporary barriers or safety barrels. Type B lights shall also be placed on each advanced warning sign and Type III Barricades.

48. GROUNDING AND BONDING:

The Contractor shall furnish all necessary labor, materials, and equipment necessary to furnish and install an electrical grounding system consistent with the requirements of the latest editions of the National Electrical Code and the District of Columbia Electrical Code.

GENERAL.

Grounding shall be accomplished as soon as materials are in place to which the grounding wires are to be attached. Traffic signal controller cabinets, termination cabinets, manholes, hand boxes, poles and transformer bases should be made mechanically and electrically secure to form a continuous system, and shall be effectively grounded. The grounding system shall be installed, connected, tested, and deemed acceptable to the Engineer before energizing current carrying conductors.

MATERIALS. Material used for installation of grounding systems shall meet the following requirements:

Ground Rods

Shall be copper-clad rods conforming to the requirements of UL – 467. Ground rods shall have a diameter of at least $\frac{3}{4}$ inches and a length of at least 10 feet. The length of the ground rod shall be sufficient to ensure that at least 8 feet of the rod is in contact with undisturbed soil, and that the resulting system passes all required grounding tests.

Ground Wires

Shall be at least No. 8 American Wire Gauge (AWG) for streetlight grounding and #6 solid bare copper wire for traffic signals

GROUND CLAMPS

Shall be heavy-duty bronze, brass or galvanized malleable iron conforming to the requirements of American Society for Testing and Materials (ASTM) A220, any grade.

Manholes

All manhole post ground rod connections shall be made using exothermic welding.

The Contractor shall in each District owned manhole bond the neutral conductor and the system ground wire to the manhole grounding electrode.

Any DC Manhole that is worked in under this contract shall be checked to affirm the existence of a existing ground rod, if no ground rod is found, a ground rod must be installed through the floor of the manhole in such a way as to have a minimum soil contact of 8 feet.

The Contractor must make the electrical connections between the GROUND ROD-NEUTRAL CONDUCTOR AND ANY GROUND WIRES in the existing DC manholes.

One solid copper clad ground rod shall be installed in each manhole, hand-box, traffic signal controller cabinet foundation and each traffic signal and street light pole foundation.

Electrode Conductor

The grounding electrode conductor shall be sized in accordance with Section 250 of the National Electrical Code (NEC) and these special provisions. The Contractor shall install ground wires in a continuous length. The Contractor must make the electrical connections between the ground rod- neutral conductor and any ground wires using exothermic welds in District of Columbia manholes. Ground wires shall be installed at the same time as other conductors, when they are pulled. The Contractor shall exercise care when installing the ground wire to avoid damage or kinks to the cable. Damaged or ineffective ground wire shall be removed and replaced by the Contractor at no cost to the District of Columbia.

MEASURE AND PAYMENT. This Special Provision features no measure and payment provision. The cost of the grounding system is covered in special provisions dealing with manholes, hand boxes and foundations. Grounding system costs shall be appropriately distributed over those special provisions.

49. FURNISH AND INSTALL MAGNETIC GRIND-RESISTANT (DEEP INSTALLATION) SENSOR DETECTORS

GENERAL.

The Magnetic grind-resistant (deep installation) Sensor Detectors shall conform to the provisions of Section 613.36 of the District of Columbia Department of Transportation (DDOT) Standard Specifications for Highways and Structures (Standard Specifications) 2013. In the event of a conflict, these Special Provisions shall prevail. This Work shall include all necessary hardware to install the units within any roadway surface (asphalt or concrete) and to convey the data to either an Access Point (AP), Digital Radio (DR), or Repeater (RP) (paid for separately).

SPECIFICATIONS

1. Magnetic grind-resistant (deep installation) Sensor placement – Each sensor shall be installed in the Roadway using the following procedure:

- a. Core drill the asphalt or concrete pavement to provide a 4-inch diameter hole at a depth of approximately 3-inches below asphalt layer, up to a maximum depth of 8-inches below surface. The Contractor shall not drill through steel reinforcement in concrete base for sensor installation.
 - b. The depth of the hole shall be inspected and approved by DDOT or a designated representative of DDOT prior to applying any epoxy after the hole is core drilled.
 - c. A layer of epoxy approximately 1.25-inches shall be applied to the bottom of the cored hole.
 - d. The sensor shall then be placed on top of this layer of epoxy, within a protective plastic housing in the correct orientation as clearly marked on the sensor and as approved by the manufacturer.
 - e. The sensor shall be fully encapsulated with the epoxy.
 - f. Cold patch shall be used to as "filler" material. Approximately 5-inches of unfilled cored hole shall remain.
 - g. Epoxy shall be used to fill the cored hole flush to the Roadway surface.
 - h. The epoxy shall be a two-part poly-urea based joint sealant. It shall have self leveling characteristics. The surface the epoxy will be bonding to shall be free of debris, moisture and anything else which might interfere with the bonding process. The epoxy shall be approved by the manufacturer of the detection system.
2. A magnetic grind-resistant (deep installation) sensor shall be battery-powered with at least an average lifetime of eight (8) years when the sensor is configured for and operating under normal traffic conditions using default settings.
 3. All magnetic grind-resistant (deep installation) sensor components shall be contained within a single housing that conforms to NEMA Type 6P and IEC IP68 standards.
 4. A magnetic grind-resistant (deep installation) sensor shall operate at temperatures from -37 °F / -38.3 °C to +176 °F / +80 °C.
 5. Each magnetic grind-resistant (deep installation) sensor shall communicate by radio to a nearby AP or RP, and shall transmit its detection data within 150 milliseconds of a detected event when the AP or RP is present or powered on and transmitting.
 6. The radio links between each sensor and AP, DR, or RP shall conform to the following:
 - a. The physical layer of the radio links (i.e., the over-the-air data rate(s), modulation type(s), forward error correction, bit interleaving, channel coding, and other aspects of the transmitted signal) shall conform to published standards such as IEEE and ITU Telecommunication Standardization Sector (ITU-T).
 - b. The center frequencies, bandwidths, and transmit power levels of the radio links shall allow operation in an unlicensed frequency band.

- c. Frequency channels shall be employed by the sensors to avoid interference with other devices operating in the unlicensed band. Frequency channels shall be user-configurable.
 - d. The link budget (i.e., transmit power plus transmit antenna gain plus receive antenna gain minus receive sensitivity, where receive sensitivity shall assume a 1% packet error rate) for all radio links shall be 93 dB or greater when installed within the maximum wireless distance from an AP, DR, or RP.
 - e. The maximum wireless distance between a sensor installed in the Roadway and an AP, DR, or RP with a clear line-of-sight between devices shall be:
 - i. At least 150 feet for an AP or RP installed 20 feet above the Roadway
 - ii. At least 100 feet for an AP or RP installed 16 feet above the Roadway
 - f. The maximum geometric range between each sensor and AP, DR, or RP, shall be 120 degrees and in accordance with the Orientation standards as specified in the Contract Plan set.
7. Each magnetic grind-resistant (deep installation) sensor shall transmit a unique identifying code.
 8. Each magnetic grind-resistant (deep installation) sensor shall be properly configured and programmed as shown on plan sheets and per manufacturer's recommendations to achieve an operating condition needed to satisfy the requirements indicated in Section 29 Detection Acceptance Section 33 Data Quality Assurance, and Section 34 System Testing of these Special Provisions.

50. FURNISH AND INSTALL SENSOR REPEATER ON ANY POLE OR STRUCTURE

GENERAL

The Sensor Repeater on Any Pole or Structure shall conform to the provisions of Section 613.37 of the DDOT Standard Specifications 2013, except as modified in these Special Provisions. In the event of a conflict these Special Provisions shall prevail. This Work shall include all necessary hardware (including manufacturer's pole extension hardware) and electrical connections to install the units on an existing metal overhead lighting pole, traffic signal pole, or mast arm and to convey the data from a magnetic sensor detector to a traffic counter control cabinet, via an Access Point or Digital Radio (paid for separately).

SPECIFICATIONS

1. A RP communicating directly to an AP shall support at least 10 sensors.
2. A RP communicating to an AP via an intermediate RP (i.e., tandem operation) shall support at least 6 sensors.
3. The radio links between each RP and AP or another RP shall conform to the following:
 - a. The physical layer of the radio links (i.e., the over-the-air data rate(s), modulation type(s), forward error correction, bit interleaving, channel coding, and other aspects

of the transmitted signal) shall conform to published standards such as IEEE and ITU Telecommunication Standardization Sector (ITU-T).

- b. The center frequencies, bandwidths, and transmit power levels of the radio links shall allow operation in an unlicensed frequency band.
 - c. Frequency channels shall be employed by the sensors to avoid interference with other devices operating in the unlicensed band. Frequency channels shall be user-configurable.
 - d. The link budget (i.e., transmit power plus transmit antenna gain plus receive antenna gain minus receive sensitivity, where receive sensitivity shall assume a 1% packet error rate) for all radio links shall be 93 dB or greater when installed within the maximum wireless distance from an AP, DR or another RP.
 - e. The maximum wireless distance between a RP and an AP, between a RP and a DR, or between a RP and another RP shall be at least 750 feet when both units are installed 18 feet above the roadway and with a clear line-of-sight between devices.
 - f. The maximum geometric range between a RP and any AP, DR, other RP, or magnetic sensor shall be 120 degrees with a clear line-of-sight between devices. Wireless equipment outside of the 120-degree geometric communication range shall not be detected.
4. All sensor DR components and the surge protection and electrical isolation, when used, shall have a minimum of a five (5) year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product or 90 Calendar Days from the date of replacement or repair, whichever provides longer coverage.
 - 5.
 6. Each RP shall be properly configured and programmed as shown on plan sheets and per manufacturer's recommendations to achieve an operating condition needed to satisfy the requirements indicated in Section 29 Detection Acceptance and Section 34 System Testing of these Special Provisions.

INSTALLATION COORDINATION.

The Contractor shall coordinate the installation of all Repeaters onto a metal overhead lighting pole, traffic signal pole, or mast arm with the appropriate authorities (PEPCO and/or the Department) before any work begins. Failure to properly coordinate with PEPCO or the Department, which leads to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASURE AND PAYMENT. Each Repeater shall be paid for at the Contract unit price of each. The price shall include the cost of the Repeater and all required labor equipment and materials to install the Repeater in the field (on an existing metal overhead lighting pole, traffic signal pole,

or mast arm) and render the traffic Detection System operational. This Work includes all mounting hardware, wiring, electrical and data connection to the communication modem within the controller cabinet (if required), surge protection and electrical isolation, calibration, testing, and furnishing documentation to complete the Work.

51. FURNISH AND INSTALL SENSOR ACCESS POINT ON ANY POLE

GENERAL.

The Sensor Access Point on Any Pole shall conform to the provisions of Section 613.38 of the DDOT Standard Specifications 2013, except as modified in these Special Provisions. In the event of a conflict these Special Provisions shall prevail. This Work shall also include all necessary hardware or equipment connecting between an AP and Contact Closure Master Card (CCMC), and between an AP and Communication DSL Modem, or as specified in the plan sheets.

SPECIFICATIONS.

1. Each AP shall be properly configured and programmed as shown on plan sheets and per manufacturer's recommendations to achieve an operating condition needed to satisfy the requirements indicated in Section 29 and Section 34 of these Special Provisions.
2. The maximum geometric range between an AP and any RP or magnetic sensor shall be 120 degrees with a clear line-of-sight between devices. Wireless equipment outside of the 120-degree geometric communication range shall not be detected.
3. All access point (AP) components shall have a minimum of a five (5) year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product or 90 Calendar Days from the date of replacement or repair, whichever provides longer coverage.

INSTALLATION COORDINATION. The Contractor shall coordinate the installation of all Access Points onto a traffic signal pole or mast arm with the appropriate authorities (PEPCO and/or the Department) before any work begins. Failure to properly coordinate with PEPCO or the Department, which leads to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASURE AND PAYMENT. Each Access Point shall be paid for at the Contract unit price of each. The price shall include the cost of the Access Point and all required labor equipment and materials to install the Access Point in the field (on an existing traffic signal pole or mast arm) and render the traffic Detection System operational. This Work includes all mounting hardware, wiring, electrical and data connection to the communication modem within the controller cabinet (if required), surge protection and electrical isolation, calibration, testing, and furnishing documentation to complete the Work.

52. FURNISH AND INSTALL SENSOR DIGITAL RADIO ON ANY POLE

GENERAL.

This Work shall consist of the Contractor furnishing and installing a sensor digital radio (DR) onto a metal overhead lighting pole, traffic signal pole, or mast arm, as specified and as approved by the Engineer. This Work shall include all necessary hardware (including manufactures pole extension hardware) and electrical connections to install the units on an existing metal overhead lighting pole, traffic signal pole, or mast arm, pole and to run Category-5e (CAT-5e) cable to convey the data from the access point to a traffic counter control cabinet. This Work shall include all necessary hardware, equipment, or surge protection and electrical isolation connecting between a DR and Access Point Controller Card (APCC), or as specified in the plan sheets. This Work also includes the trimming of any tree limbs or branches to provide a clear line of sight between the sensor repeater and the access point or another sensor repeater or sensors.

SPECIFICATIONS.

1. A DR shall support the relay of sensor detection data through several interfaces as required by the application.
2. As an option, detection data shall be communicated over TCP/IP via an integrated 10/100BaseT Ethernet interface.
3. A DR, when operating with an APCC, shall be capable of simultaneously communicating detection data via the contact closure interface, optional Ethernet interface, and optional cellular data modem interface.
4. Each DR shall be capable of accepting software and firmware upgrades.
5. The Wireless Battery-Powered Magnetometer Detection System shall provide software operating on conventional notebook/portable PCs to support configuration of a DR to store and retrieve detection data.
6. The maximum geometric range between a DR and any RP or magnetic sensor shall be 120 degrees with a clear line-of-sight between devices. Wireless equipment outside of the 120-degree geometric communication range shall not be detected.
7. A DR shall support at least 48 sensors and shall be powered through the APCC, or as specified in the plan sheets. Surge protection and electrical isolation, if specified in plan sheets, shall be provided between the DR and APCC with up to 1500V surge protection and electrical isolation, and shall conform to manufacturer's recommendations.
8. The surge protection and electrical isolation, when used, shall extend the communication range between the APCC and DR from 33 feet to 2000 feet.
9. A DR shall operate at temperatures from -37 °F / -38.3 °C to +176 °F / +80 °C and shall be contained within a single housing that conforms to NEMA Type 4X and IEC IP67 standards.

10. The Contractor shall provide all materials required to successfully install the Digital Radio units onto an existing metal, traffic signal pole, lighting pole and mast arm, as per the manufacturer's recommendations. The Contractor shall provide a weatherproof permanent name plate identification tag on every Digital Radio with their corresponding 8 digit number, as illustrated on the plan sheets. The identification tag shall be approved by the Department prior to installation by the Contractor.
11. All sensor DR components and the surge protection and electrical isolation, when used, shall have a minimum of a five (5) year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product or 90 Calendar Days from the date of replacement or repair, whichever provides longer coverage.
12. During the warranty period, technical support shall be available from the supplier via telephone within 24 hours of the time a call is made by a user, where this support shall be provided by factory-authorized personnel or factory-authorized installers.
13. Each DR shall be properly configured and programmed as shown on plan sheets and per manufacturer's recommendations to achieve an operating condition needed to satisfy the requirements indicated in Section 29 and Section 34 of these Special Provisions.

INSTALLATION COORDINATION. The Contractor shall coordinate the installation of all Digital Radios onto a traffic signal pole or mast arm with the appropriate authorities (PEPCO and/or the Department) before any work begins. Failure to properly coordinate with PEPCO or the Department, which lead to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASURE AND PAYMENT. Each Digital Radio shall be paid for at the Contract unit price of each. The price shall include the cost of the digital radio and all required labor equipment and materials to install the digital radio in the field (on an existing traffic signal pole or mast arm) and render the traffic Detection System operational. This Work includes all mounting hardware, wiring, electrical and data connection to the communication modem within the controller cabinet (if required), surge protection and electrical isolation, calibration, testing, and furnishing documentation to complete the Work.

53. FURNISH AND INSTALL SENSOR CONTACT CLOSURE CARD INSIDE TRAFFIC SIGNAL CABINET

GENERAL. This Work shall consist of the Contractor furnishing and installing a Contact Closure Master Card (CCMC) with an optional Contact Closure Expansion Card (EX CARD) inside Traffic Signal Cabinet as specified and as approved by the Engineer. This Work shall include all necessary hardware, electrical connections, equipment, wiring and cable(s)

connecting between a CCMC and EX CARD, between an EX CARD and another EX CARD, as specified in the plan sheets.

SPECIFICATIONS

1. A CCMC and EX CARD shall be user-configurable to provide one (1) to four (4) outputs. A CCMC shall be capable of communicating with EX CARD to provide additional outputs.
2. A CCMC and EX CARD shall provide detector data as contact closure signals to the traffic controller, and shall directly plug into standard 170/2070 input files. One or more CCMC or EX CARD shall be capable of providing up to 256 channels of detection data from a single CCMC's supported sensors, where each channel comprises an optically isolated contact closure relay.
3. A CCMC and EX CARD shall provide detector data as traffic count data to the modem and be transmitted to a server to collect and process the data.
4. A CCMC and EX CARD shall be user-configurable to provide contact closure signals in either presence or pulse mode, and to provide delay timing and extension timing.
5. A CCMC and EX CARD shall be powered by the traffic controller backplane via an 11-26 VDC input. Power consumption for a CCMC shall be under 3.5 watts.
6. A CCMC shall be surge protected to GR-1089 standards.
7. A CCMC and EX CARD shall operate at temperatures from -37 °F / -38.3 °C to +176 °F / +80 °C, and in humidity up to 95% (non-condensing).
8. Each CCMC and EX CARD shall be properly configured and programmed per manufacturer's recommendations to achieve an operating condition needed to satisfy the requirements indicated in Section 29 Detection Acceptance and Section 34 System Testing of these Special Provisions.
9. The Contractor shall provide all hardware and materials required to successfully install the CCMC and EX CARD inside the traffic signal cabinet per the manufacturer's recommendations.
10. All CCMC and EX CARD shall have a minimum of a five (5) year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product or 90 Calendar Days from the date of replacement or repair, whichever provides longer coverage.
11. During the warranty period, technical support shall be available from the supplier via telephone within 24 hours of the time a call is made by a user, where this support shall be provided by factory-authorized personnel or factory-authorized installers.

INSTALLATION COORDINATION.

The Contractor shall coordinate the installation of all in-cabinet equipment with the appropriate authorities (PEPCO and/or DDOT TOA) before any work begins. Failure to properly coordinate with DDOT TOA, which leads to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASUREMENT AND PAYMENT. Each CCMC or EX CARD shall be paid for at the Contract unit price of each. The price shall include the cost of the CCMC or EX CARD and all required labor, equipment and materials to install the CCMC or EX CARD inside the traffic signal cabinet and render the traffic Detection System operational. This Work includes all mounting hardware, wiring, configuration, programming, testing, and furnishing documentation to complete the Work.

54. FURNISH AND INSTALL SENSOR ACCESS POINT CONTROLLER CARD INSIDE TRAFFIC SIGNAL CABINET

GENERAL.

This Work shall consist of the Contractor furnishing and installing an Access Point Controller Card (APCC) with an optional Contact Closure Expansion Card (EX CARD) inside Traffic Signal Cabinet as specified and as approved by the Engineer. This Work shall include all necessary hardware, electrical connections, equipment, wiring and cable(s) connecting between an APCC and EX CARD, between an EX CARD and another EX CARD, and between an APCC and Communication DSL Modem, as specified in the plan sheets.

SPECIFICATIONS.

1. An APCC shall be capable of communicating with at least two (2) DR modules.
2. An APCC and EX CARD shall be user-configurable to provide one (1) to four (4) outputs. An APCC shall be capable of communicating with EX CARD to provide additional outputs.
3. An APCC and EX CARD shall provide detector data as contact closure signals to the traffic controller, and shall directly plug into standard 170/2070 input files. One or more APCC or EX CARD shall be capable of providing up to 256 channels of detection data from a single APCC's supported sensors, where each channel comprises an optically isolated contact closure relay.
4. An APCC and EX CARD shall be user-configurable to provide contact closure signals in either presence or pulse mode, and to provide delay timing and extension timing.
5. An APCC and EX CARD shall be powered by the traffic controller backplane via an 11-26 VDC input. Power consumption for an APCC shall be under 3.5 watts.
6. An EX CARD shall be surge protected to GR-1089 standards.
7. An APCC and EX CARD shall operate at temperatures from -37 °F / -38.3 °C to +176 °F / +80 °C, and in humidity up to 95% (non-condensing).

8. Each APCC and EX CARD shall be properly configured per manufacturer's recommendations to achieve an operating condition needed to satisfy the requirements indicated in Section 29 and Section 34 of these Special Provisions.
9. The Contractor shall provide all hardware and materials required to successfully install the APCC and EX CARD inside the traffic signal cabinet per the manufacturer's recommendations.
10. All APCC and EX CARD shall have a minimum of a five (5) year warranty that includes product defects in materials and workmanship under normal use from the date of acceptance. If a hardware defect arises the manufacturer shall exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product. A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by the manufacturer, assumes the remaining warranty of the original product or 90 Calendar Days from the date of replacement or repair, whichever provides longer coverage.
11. During the warranty period, technical support shall be available from the supplier via telephone within 24 hours of the time a call is made by a user, where this support shall be provided by factory-authorized personnel or factory-authorized installers.

INSTALLATION COORDINATION. The Contractor shall coordinate the installation of all in-cabinet equipment with the appropriate authorities (PEPCO and/or DDOT TOA) before any work begins. Failure to properly coordinate with DDOT TOA, which leads to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASUREMENT AND PAYMENT. Each APCC or EX CARD shall be paid for at the Contract unit price of each. The price shall include the cost of the APCC or EX CARD and all required labor, equipment and materials to install the APCC or EX CARD inside the traffic signal cabinet and render the traffic Detection System operational. This Work includes all mounting hardware, wiring, configuration, programming, testing, and furnishing documentation to complete the Work.

55. MAGNETIC SENSOR DETECTOR ACCESS POINT CONTROLLER CARD AND DIGITAL RADIO SYSTEM

The 2-way wireless battery-powered magnetometer vehicle detector shall consist of the following:

1. Battery-powered sensors installed in-pavement in each traffic lane, which can be programmed to eliminate surrounding natural or man-made magnetic forces as to not interfere with its operation. Each sensor shall transmit its detection data within 150 ms of a detected event.
2. Digital Radios (DR) mounted on the side of the Roadway may be utilized as the communications hub for the installation.
3. Repeaters (RPs) mounted on the side of the Roadway, could be utilized to extend the radio range of a DR.

4. Each sensor shall communicate by radio to a nearby DR or RP.
5. An Access Point Controller Card (APCC) plugged into standard 170/2070 input files shall be operated with one or more DRs to collect and process data.
6. Interface between a DR and an APCC, and between an APCC and modem uses an Ethernet communication cable (CAT-5E).
7. The sensors, DRs, RPs, and CCMCs shall be capable of being controlled and configured by software to store and retrieve detection data.
8. 2-way wireless communications between the sensors and the DR or RP and between the RP and DR.

56. MAGNETIC SENSOR DETECTOR ACCESS POINT SYSTEM

GENERAL. The Magnetic Sensor Detector Access Point System shall conform to the provisions of Section 825.29 of the DDOT Standard Specifications 2013, except as modified in these Special Provisions. In the event of a conflict, these Special Provisions shall prevail.

SPECIFICATIONS

1. A Contact Closure Master Card (CCMC) plugged into standard 170/2070 input files shall be operated with an AP to communicate detection data via contact closure interface to the traffic signal cabinet.
2. Interface between an AP and a CCMC, and between an AP and modem uses an Ethernet communication cable (CAT-5E).
3. The sensors, APs, RPs and CCMCs shall be capable of being controlled and configured by software to store and retrieve detection data.

57. TREE TRIMMING

GENERAL. This work shall consist of the Contractor trimming all trees within DDOT Right-of-Way to provide an unobstructed line of sight view between the detectors, Repeaters and Access Points. All tree trimming must be identified by the Contractor and coordinated with the Department as well as the Urban Forestry Administration. The Contractor is responsible for all cleanup and removal of all trimmed materials.

INSTALLATION. The Contractor shall utilize either mechanical or motorized equipment to remove tree branches and limbs, as presented to the Department.

MEASURE AND PAYMENT. Due to the minimal amount of tree trimming anticipated on this project, tree trimming is considered incidental to the project costs. There shall be no separate payment for tree trimming provided to the Contractor.

58. FURNISH AND INSTALL COMMUNICATION CABLE (CAT-5E)

GENERAL. This work shall consist of furnishing and installing communication Category 5 (CAT-5 Extended) cable for outdoor use to connect the sensor access point or digital radio to the traffic signal control cabinet, as specified and as approved by the Engineer. This work shall include all necessary hardware, terminators, connectors, and clearing/dewatering all conduits to install CAT-5e cable in the conduit to successfully connect the traffic counter control cabinet to the access point or digital radio unit.

SPECIFICATIONS. The CAT-5e cable shall conform to EIA/TIA-568 and have the following features:

Jacket Material - High density polyethylene (HDPE) or Polyvinyl chloride (PVC)

Operating Temperature - Minimum -94 °F; Maximum 167 °F

The Contractor shall provide all materials required to successfully retrofit the existing traffic signal controller cabinet to house the detection system in-cabinet equipment (including the Contact Closure Master C.

It is the Contractors responsibility to provide the Communication cable connection within the conduits depicted on the plan set. Under the supervision of DDOT, the cable connection shall also include the clearing of any conduit, repairing any damaged conduits, and removal of water as required.

MEASURE AND PAYMENT. Communication Cable (CAT – 5e) shall be paid for at the contract unit price of Linear Feet. The price shall include the cost of all required labor, equipment (including terminators) to operate the detection system to render the Adaptive Signal Control system operational. This work includes all mounting hardware, cable terminations, repairing any damaged conduit, clearing/dewatering all conduits to install CAT-5e cable and furnishing documentation to complete the work.

59. RETROFIT TRAFFIC CONTROL CABINET

GENERAL.

This work shall consist of retrofitting the existing traffic signal control cabinet to house the proposed in-cabinet detection equipment, as specified and as approved by the Engineer. This work shall include all necessary hardware to retrofit the cabinet to install the Access Box or APCC Isolator in traffic control cabinet.

SPECIFICATIONS. The Contractor shall provide all materials required to successfully retrofit the existing traffic signal controller cabinet.

MEASURE AND PAYMENT. This Special Provision features no measure and payment provision. The cost of retrofit shall be reflected and distributed among the various contract pay items.

60. FURNISH AND INSTALL 336SS TRAFFIC COMMUNICATIONS CABINET

This Special Provision supplements and modifies 825.01.03 of the Standard Specifications.

The proposed 336SS communications cabinet and foundation location shall be in accordance with the Contract Plans and meet the minimum design requirements detailed in

the Standard Specifications. The PCC cabinet foundation shall be installed in accordance with 613.13(B) of the Standard Specifications. The proposed cabinet installation shall meet the grounding and bonding requirements of Section 48 and Section 613.14 of the Standard Specifications.

Remove Section 825.01.03(E) of the Standard Specifications. The proposed cabinet shall function as an auxiliary communications cabinet and shall not house the input file rack for the intersection.

The proposed cabinet shall connect to the traffic signal UPS via proposed 4" PVC electrical conduit line that connects to the existing 336SS traffic controller cabinet. All data cables shall connect to the existing cabinet through a proposed 2" PVC electrical conduit line that runs parallel to the conduit supplying power. All proposed conduit shall be installed in accordance with 613.10. All wiring entering the existing cabinet from the proposed cabinet shall be neatly labeled.

The communications signal interconnect termination panel shall be moved to the proposed cabinet.

Non-traffic elements in the existing 336SS traffic controller cabinet shall be moved to the proposed 336SS cabinet, including the existing Video Encoder and DSL Modem.

INSTALLATION COORDINATION. The Contractor shall coordinate the installation of the 336SS Traffic Communications Cabinet with the appropriate authorities (PEPCO and/or DDOT TOA) before any work begins. Failure to properly coordinate with DDOT TOA, which leads to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASURE AND PAYMENT. Each cabinet shall be paid for at the contract unit price of each. The price shall include the cost of all required labor, equipment and materials to furnish and install cabinet in the field and field equipment operational. This work includes furnishing documentation to complete the work.

61. FURNISH AND INSTALL ENCASED PVC ELECTRICAL CONDUIT

This Special Provision supplements 613.10 of the Standard Specifications.

This work shall consist of furnishing and installing 4" encased PVC electrical conduit lines to connect data cables and power supply from the existing traffic controller cabinet to the proposed 336SS communications cabinet, as specified and as approved by the Engineer in the Contract Plan set.

INSTALLATION COORDINATION. The Contractor shall coordinate the installation of all conduit with the appropriate authorities (PEPCO and/or DDOT TOA) before any work begins. Failure to properly coordinate with DDOT TOA, which leads to Project delays, is the sole responsibility of the Contractor. The Department is not responsible for utility coordination between the Contractor and the utility company.

MEASURE AND PAYMENT. Encased PVC electrical conduit shall be paid for at the contract unit price of Linear Feet. The price shall include the cost of all required labor and equipment to install the conduit to make the proposed 336SS traffic signal cabinet operational.

62. FURNISH AND INSTALL VIDEO TRAFFIC FLOW DETECTION SYSTEM (VTFDS)

This Special Provision supplements 613.39 of the Standard Specifications.

This work shall consist of furnishing and installing Video Traffic Flow Detection System (VTFDS) using a Machine Video Processor (MVP) at the locations shown in the Contract Plan set using color CCD cameras as shown in the Contract Plan set.

GENERAL.

This specification sets forth the minimum requirements for a real-time, wide area video vehicle detection system that monitors vehicles on a roadway via processing of video images and provides detector outputs to a 2070 traffic controller installed in a 336SS cabinet. The system shall include all mounting hardware, cameras, cabling, and processing installed. The number of cameras is as shown on the plans.

The system architecture shall fully support Ethernet networking of system components through DDOT's Ethernet over copper communications network. On the software application side of the network, the system shall be integrated through a client-server relationship. The client applications either shall be hosted on the same PC as the communications server, or may be distributed over a local area network of PC's using the industry standard TCP/IP network protocol. Multiple client applications shall execute simultaneously on the same host or multiple hosts, depending on the network configuration. Additionally, a web-browser interface shall allow use of industry standard internet web browsers to connect to MVP units for setup, maintenance, and playing digital streaming video.

SYSTEM HARDWARE.

The hardware shall consist of the following items to be provided by the system supplier:

- a. Machine vision processor units with color image sensors/cameras in waterproof and dust-tight housing and thermostatically controlled faceplate heater, number as shown on plans
- b. Interface cards for 336SS cabinet
- c. Auxiliary input files if necessary
- d. All necessary cabinet modifications
- e. Installation
- f. All Interconnection cabling

SYSTEM SOFTWARE.

The MVP embedded software shall incorporate multiple applications that perform a variety of diagnostic, installation, fault tolerant operations, data communications, digital video streaming, and vehicle detection processing. The detection shall be reliable, consistent, and perform under all weather, lighting, and traffic congestion levels. An embedded web server shall permit standard internet browsers to connect and perform basic configuration, maintenance, and video streaming services.

There shall be a suite of client applications that reside on the host client / server PC. The applications shall execute under Microsoft Windows XP, Vista, or Windows 7. Available client applications shall include the following.

Master network browser: Learn a network of connected MVP units, display basic information, and launch applications software to perform operations within that system of MVPs.

Configuration setup: Create and modify detector configurations to be executed on the MVP.

Operation log: Retrieve, display, and save field hardware run-time operation logs of special events that have occurred.

Software install: Reconfigure one or more MVP units with a newer release of embedded system software.

Streaming video player: Play and record streaming video with flashing detector overlay.
Data retrieval: Fetch once or poll for traffic data and alarms and store on PC storage media.

Communications server: Provide fault-tolerant, real-time TCP/IP communications to / from all devices and client applications with full logging capability for systems integration.

MVP HARDWARE. The MVP shall be rack mountable. The MVP shall be capable of being mounted in a standard DDOT 170/2070 input file. The MVP shall also meet the following hardware requirements:

- a. 1.4 Color Zoom Camera
- b. Lens: 10x or better zoom
- c. Imaging device: Color CCD

HOUSING AND SUNSHIELD. Zoom lens image sensor sealed in waterproof and dust-tight housing with thermostatically controlled faceplate heater. Adjustable weather and sunshield with drip guard. Hydrophilic lens coating.

FUNCTIONAL CAPABILITIES. The real-time, detection performance of the MVP shall be optimized to meet the detection objective of the traffic application when mounted at 25 minimum height.

REAL-TIME DETECTORS. The video shall be digitized MPEG4. Different detector types shall be selectable via software. All of the following Detector Types shall be supported for each camera input. Detector types shall include the following: Count Detector, Presence Detector, and Speed Detector.

Multiple detector outputs can be combined together via OR, AND, NAND, and NOR, logical functions. In addition, the MVP shall be able to condition the detector outputs based on the state of the associated traffic signals.

Detectors shall accurately detect approaching, receding, speeding, or stopped vehicles in multiple traffic lanes via processing of video images, make the detections available to a variety of parallel or serial outputs that reflect the current real-time detector state, provide detector outputs to a traffic controller (contact closure) format. The MVP shall be able to detect the absence of a valid video signal on each image sensor input, and upon detecting the absence of a valid video signal, the MVP shall place all detector outputs associated with the failed image sensor input on maximum recall.

The MVP shall also be able to detect when the quality of the video input from the image sensor is not sufficient to enable vehicle detection. (e.g., when environmental conditions obscure the sensor view) Use of this video loss detection capability shall be selectable by the user. If a video loss failure is detected, the MVP shall place the detector outputs associated with the failed sensor on recall, maximum recall, or fixed time recall as selected by the user.

Once the MVP has been properly set up using the supervisor computer, it shall be possible to disconnect the supervisor computer. Thereafter, the MVP shall perform vehicle detection as a standalone unit.

INTERVAL TRAFFIC DATA. The MVP shall count vehicles in real-time and compute the average of traffic parameters over user-defined time intervals (or time slices), as follows: Volume and Occupancy.

The time-interval data shall be retained in non-volatile flash memory within the MVP for later transfer to the supervisor computer for analysis. The following time-intervals shall be supported: 10, 20, 30 seconds, 1, 5, 10, 15, 30, 60 minutes and by intersection cycle. In addition, "fill and stop" or circular buffer options shall be available for each detector that is storing data.

EXTERNAL INTERFACE. It shall be possible for the MVP to output the detection signal directly to 170/2070 controller cabinets. It shall be possible to selectively disable and re-enable any or all of the detection outputs. . The manufacturer of the MVP shall have a communications server software package available to allow the polling of the MVPs for data.

The MVP shall provide up to 16 contact closure inputs and 24 contact closure outputs to a 170 input file.

DETECTOR TYPES. The MVP shall be able to be programmed with a variety of detector types that perform specific functions. The general functions performed by the detectors shall include performance of traffic counts by user-specified time period and vehicle presence detection.

DETECTION ZONE PLACEMENT. The video detection system shall provide flexible detection zone placement at any orientation within the field of view of the camera. Preferred detector configurations shall be to place detection zones across lanes of traffic for optimal count accuracy and to place detection zones parallel to lanes of traffic for optimal presence detection accuracy of moving or stopped vehicles. The system shall be capable of detecting both approaching and receding vehicles, with similar accuracies.

Detection zones shall be able to be overlapped for optimal road coverage. In addition, selective groups of detectors shall be able to be logically combined into a single output and further modified by using optional delay and extend timing and signal state inputs if available.

DETECTION ZONE PROGRAMMING. Placement of detection zones shall be by means of a PC with a Windows XP, Vista, or Windows 7 operating system, a keyboard, and a mouse. The PC monitor shall be able to show the detection zones superimposed on images of traffic scenes.

The detection zones shall be created by using a mouse to draw detection zones on the PC monitor. Using the mouse and keyboard it shall be possible to place, size, and orient detection zones to provide optimal road coverage for vehicle detection. It shall be possible to download detector configurations from the PC to the MVP sensor and cabinet interface module, to retrieve

the detector configuration that is currently running in the MVP sensor, and to back up detector configurations by saving them to the PC fixed disks or other removable storage media.

The supervisor computer's mouse and keyboard shall be used to edit previously defined detector configurations to permit adjustment of the detection zone size and placement, to add detectors for additional traffic applications, or to reprogram the MVP sensor for different traffic applications or changes in installation site geometry or traffic rerouting.

DETECTION ZONE OPERATION VERIFICATION. The MVP, real-time detection operation shall be verifiable through the following means: View the video output of the MVP, with overlaid detection zones, with any standard NTSC/RS-170 analog video display device (monitor). View assigned contact-closure pinouts from the unit front panel LED output display. An LED shall be ON when its assigned detector output or signal controller phase input is ON. An LED shall be OFF when its assigned detector or signal controller input is OFF. The MVP shall display 16 LED indicating local and external inputs, outputs, and phase colors selectable by rotary switch.

DEMAND PRESENCE DETECTION PERFORMANCE. Using color CCD camera mounted at 25 feet for intersection control traffic applications, the system shall be able to accurately provide demand presence detection. The demand presence accuracy shall be based on the ability to enable a protected turning movement on an intersection stop line, when a demand exists. The probability of not detecting a vehicle for demand presence shall be less than 1% error under all operating conditions. In the presence of artifact conditions, the MVP shall minimize extraneous (false) protected movement calls to less than 7%.

To ensure statistical significance, the demand presence accuracy and error shall be calculated over time intervals that contain a minimum of one hundred, protected turning movements. Vehicle lane change anomalies will be excluded from the calculations. These performance specifications shall be achieved with a minimum of 2 presence detectors coupled with a single detector function to provide adequate road coverage to sample the random arrival patterns of vehicles at the stop line. The calculation of the demand presence error shall not include turning movements where vehicles do not pass through the presence detectors, or where they stop short or stop beyond the combined detection zones. Vehicle lane change anomalies will be excluded from the calculations.

VIDEO PROCESSING. The analog video output shall provide graphics overlay that indicates the current real-time detector state. The MVP shall process a maximum of ninety-nine (99) virtual detection zones placed anywhere in the field of view. The MVP shall process a maximum of ninety-nine (99) detection zones from each camera being processed by the MVP. While not strictly a detector, an operator-defined label, visible in the processed video, shall be able to show a label identifying location of the camera field of view, various operational system parameters such as time of day, date, IP address, baud rate, processing load index, the state of any detector output, and the state of any detector interface card (detector port master) (if one is used).

Snapshot images shall be transferred using one of the following options: a. Uncompressed black and white bitmap, b. JPEG black and white image, c. Uncompressed color bitmap, d. JPEG color bitmap. The quality of snapshot images transferred shall be user selectable. It shall be possible to stream video from one or more MVP units. It shall be possible to save the streamed video files to a network computer hard drive. The video stream shall also contain the detector state information that can be overlaid on the video at the operator's request. A single workstation shall be able to access and view the compressed digital video stream.

MVP ENVIRONMENTAL. The MVP shall be designed to operate reliably in the adverse environment found in the typical roadside traffic cabinet. It shall meet the environmental requirements set forth by the NEMA (National Electrical Manufacturers Association) or Caltrans TEES. Operating temperature shall be from -34 C to +74 degrees C (-29 F to +165 F) at 0% to 95% relative humidity, non-condensing.

ELECTRICAL. The MVP shall be powered by 110/220 volts 15 watts max, 10 watts being to support an enclosure heater. The MVP shall include transient protection. Power supply to be provided.

Communications shall be via RJ45 connector for Ethernet 10/100MB/s communications on the front of the unit. This port shall be able to download traffic data stored in non-volatile memory as well as the real-time detection information to show detector actuations.

The MVP shall be equipped with one (1) NTSC composite video input, (color or monochrome), so that a signal from one (1) image sensor can be processed in real-time. The use of miniature video connectors shall not be acceptable.

The MVP software shall be stored in flash memory within the MVP. This software shall be capable of being updated without the removal of modules or memory devices. The MVP software and/or the supervisor shall include diagnostic software to allow testing of the MVP functions. This shall include the capability to set and clear individual detector outputs and display the status of inputs to enable setup and troubleshooting in the field.

MVP OPERATIONS LOG. The MVP shall maintain a non-volatile operations log, which minimally contains: revision numbers for the current MVP hardware and software components; title and comments for the detector configuration; date and time the last detector configuration was downloaded to the MVP; date and time the operations log was last cleared; date and time communications were opened or closed with the MVP; date and time of last power-up; and time-stamped, self-diagnosed, hardware and software errors that shall aid in system maintenance and troubleshooting. The MVP processor will reboot itself automatically when software or hardware functions are not operating properly.

INSTALLATION AND TRAINING. The supplier of the video detection system will supervise the installation and testing of the video detection system and computer equipment as required by DDOT. The video detection supplier will also provide training as required by DDOT.

WARRANTY, MAINTENANCE AND SUPPORT. For a minimum of three (3) years, the supplier shall warrant the video detection system. Ongoing software support by the supplier shall include software updates of the MVP sensor, modular cabinet interface unit, and supervisor computer applications. These updates shall be provided free of charge during the warranty period.

MEASURE AND PAYMENT. Video Traffic Flow Detection System shall be paid for at the contract unit price of per each MVP and all in cabinet material, and each color CD camera and associated material and supplies to make the camera functional back to the MVP. The price shall include the cost of all required labor and equipment to make the system operational.

63. DDOT TITLE VI ASSURANCE

During the performance of this Contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

(1) COMPLIANCE WITH REGULATIONS

The Contractor shall comply with the Regulations relative to Non-Discrimination in Federally Assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, (hereinafter referred to as the "Regulations"), as they may be amended from time to time, which are incorporated by reference and made a part of this contract.

(2) NON-DISCRIMINATION

The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, gender or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. A contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) SOLICITATIONS FOR SUBCONTRACTORS, INCLUDING PROCUREMENTS OF MATERIALS AND EQUIPMENT

In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, gender, or national origin.

(4) INFORMATION AND REPORTS

The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts and other sources of information, and its facilities as may be determined by DDOT or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to DDOT, or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) SANCTIONS FOR NON-COMPLIANCE

In the event of the Contractor's non-compliance with non-discrimination provisions of this contract, DDOT shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

- Withholding of payments to the Contractor under the contract until the Contractor complies, and/or
- Cancellation, termination, or suspension of the contract in whole or in part.

(6) INCORPORATION OF PROVISIONS

The Contractor shall include the provisions of paragraphs (1) through (6) of this Assurance in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The Contractor shall take such action with respect to any subcontract or procurement as DDOT or FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor supplier as a result of this direction, the Contractor may request DDOT to enter into such litigation to protect the interests of DDOT, and in addition, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

64. RECORD OF MATERIALS, SUPPLIES AND LABOR (FHWA 47 SUBMISSION)

This Special Provision Supplements the Appendix Entitled REQUIRED CONTRACT PROVISIONS, FEDERAL AID CONSTRUCTION CONTRACTS.

For contracts of \$1,000,000.00 or more, the completion and submission of the FHWA 47 report is a contract requirement. The form must be completed and submitted as soon as fieldwork is completed. Final payment will not be made until the contractor files this report.

SUBCONTRACTOR APPROVAL REQUEST FORM

SUBCONTRACTOR APPROVAL REQUEST

(1) Project Name		(2) Invitation No.	
(3) Prime Contractor's Name		(4) Address	
(5) Estimated Starting Date		(6) Estimated Completion Date	(7) F.A.P. #
(8) Subcontractor's Name, Address & Phone No.		(9) Number of Subcontractor Employees in Workforce	(10) Number of DC Residents employed
(11) Pay Item	Item Description	Dollars	Cents
Check Items listed below (13-16) that are included in subcontract agreement		(12) See Attached For Additional Descriptions or Remarks	
(13) (All Projects)		Yes	No
Contract Wage Schedule		<input type="checkbox"/>	<input type="checkbox"/>
DBE/MBE Policy Statement		<input type="checkbox"/>	<input type="checkbox"/>
(14) (Federal-Aid Projects) Form FHWA-1273 (Required Contract Provisions)		<input type="checkbox"/>	<input type="checkbox"/>
(Non-Federal Aid Projects) (Required Contract Provisions)		<input type="checkbox"/>	<input type="checkbox"/>
(15) (Federal-Aid Projects When Subcontractor Will Receive Over \$10,000) On-Site Work Force Affirmative Action Requirements for Women and Minorities-Special Conditions		<input type="checkbox"/>	<input type="checkbox"/>
(16) Subcontractor's Certification of Nondiscrimination in Employment (Form Included in Bid Proposal)		<input type="checkbox"/>	<input type="checkbox"/>
(17) FHWA On-The-Job Training (To Be Provided by Subcontractor)		<input type="checkbox"/>	<input type="checkbox"/>
(18) I Request the Contracting Officer's Approval of this Subcontract and Certify that the Organization which will Perform this Work is Capable, has not been Debarred and that the Work will be Performed in Accordance with the Contract Specifications. I Further Certify that all Required Contract Provisions are Physically Included as Part of the Subcontract Agreement.			
_____ PRIME CONTRACTOR'S REPRESENTATIVE		_____ TITLE	_____ DATE
THE INFORMATION BELOW IS COMPLETED BY THE DEPARTMENT			
REVIEW AND DISTRIBUTION AFTER APPROVAL		APPROVAL OF SUBCONTRACT IS HEREBY GIVEN	
_____ CONTRACT COMPLIANCE	_____ DATE	_____ CONTRACTING OFFICER DC DEPARTMENT OF TRANSPORTATION	_____ DATE
_____ PROJECT ENGINEER/MANAGER	_____ DATE		

REQUIRED CONTRACT PROVISIONS

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

SPECIFIC EEO RESPONSIBILITIES (APPENDIX A) AND TRAINING SPECIAL PROVISIONS (APPENDIX B)

APPENDIX A - - SPECIAL PROVISIONS

SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

1. **General**

- a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (FHWA -1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.
- b. The Contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in the review of his/her activities under the contract.
- c. The Contractor and all his/her subcontractors holding subcontracts not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors). The Contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make then binding on the subcontractor.

2. **Equal Employment Opportunity Policy.** The Contractor will accept as his/her operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color or national origin. Such action shall include: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training.

3. **Equal Employment Opportunity Officer.** The Contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. **Dissemination of Policy.**

- a. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees or who recommend such action or who are substantially involve in such action, will be made fully cognizant of, and will implement, the Contractor's equal employment in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.
 - (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the Contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the Contractor.
 - (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Contractor's procedures for locating and hiring minority group employees.
- b. In order to make the Contractor's equal employment opportunity policy know to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:
 - (1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - (2) The Contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbook, and other appropriate means.

5. **Recruitment**

- a. When advertising for employees, the Contractor will include all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b. The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the Contractor will, through his EEO

Officer, identify sources of potential minority group applicants may be referred to the Contractor for employment consideration.

In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with equal employment opportunity contract provisions. (The US Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the Contractors to do the same, such implementation violates Executive Order 11246, as amended).

- c. The Contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

6. **Personnel Actions.** Wages, working conditions, and employee benefits shall be established and administered and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex or national origin. The following procedures shall be followed:

- a. The Contractor will conduct periodic inspections of project sites to ensure that working conditions and employees facilities do not indicate discriminatory treatment of project site personnel.
- b. The Contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The Contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with his obligations under this contract, will attempt to resolve such some complaints, and will take appropriate corrective action within a persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform every complainant of all of his avenues of appeal.

7. **Training and Promotion.**

- a. The Contractor will assist in locating, qualifying and increasing the skills of minority group and women employees, and applicants for employment.
- b. Consistent with the Contractor's work force requirements and as permissible under Federal and State regulations, the Contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25% of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Training Special Provision is provided under this contract, this subparagraph will be superseded as indicated in Attachment 2.

- c. The Contractor will advise employees and applicants for employment of available training programs and entrance requirements of each.
 - d. The Contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employee to apply for such training and promotion.
8. Unions. If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the Contractor either directly or through a Contractor's association acting as agent will include the procedures set forth below:
- a. The Contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
 - b. The Contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex or national origin.
 - c. The Contractor is to obtain information as to the referral practices and policies of the labor union except that the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the Contractor, the Contractor shall so certify to the State highway department and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the Contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the Contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The US Department of Labor has held that it shall be no excuse that for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such Contractor shall immediately notify the State highway agency.
9. **Subcontracting.**
- a. The Contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from State highway agency personnel.
 - b. The Contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. **Records and receipts.**

- a. The Contractor will keep such records as are necessary to determine compliance with the Contractor's equal employment opportunity obligations. The records kept by the Contractor will be designed to indicate.
- (1) The number of minority and non-minority group members and women employed in each work classification on the project.
 - (2) The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to Contractors who rely in whole or in part on unions as a source of their workforce).
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - (4) The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. All such records must be retained for period of three (3) years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State highway agency and the Federal Highway Administration.
- c. The Contractors will submit an annual report to the State highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required on-the-job training is being required by "Training Special Provision", the Contractor will be required to furnish Form FHWA 1409.

(40 FR 28053, July 3, 1975, as amended at 43 FR 19386, May 5, 1978. Correctly redesignated at 46 FR 21156, April 9, 1981.)

Revised 8/88

APPENDIX B - - TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled Specific Equal Employment Opportunity Responsibilities, (Appendix A), and is in implementation of 23 U.S.C. 140(a).

As part of the Contractors equal employment opportunity affirmative action program training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyworkers in the type of trade or job classification involved.

The number of trainees to be trained under the special provision will be 0.

In the event that a Contractor subcontracts a portion of the contract work, he/she shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractors needs and the availability of journeyworkers in the various classifications with a reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the State highway agency for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee employed by him/her on the contract work that is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyworker status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that he/she has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employee as a trainee in any classification in which he/she has successfully completed a training course leading to journeyworker status or in which he/she has been employed as a journeyworker. The Contractors should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the State highway agency and the Federal Highway Administration. The State highway agency and the Federal Highway Administration shall approve a program if is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for

journeyworker status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the US Department of Labor, Bureau of Apprenticeship and Training or with a State Apprenticeship Agency recognized by the Bureau and Training programs approved but not necessarily sponsored by the US Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some off-site training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

The Contractor will be reimbursed in the amount indicated in the unit price column of the Pay Item Schedule in the Bid Form and Proposals for each hour of training given an employee on this contract in accordance with an approved training program. As verified by the engineer, reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for off-site training indicated above may only be made to the Contractor where he/she does one or more of following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainees wages during the off-site training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyworker, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his/her training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his/her work classifications or until he/she has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his/her responsibilities under this Training Special Provision if he/she has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyworkers rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Department of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he/she will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The Contractor will provide for the maintenance of records and furnish period reports documenting his/her performance under this Training Special Provision.

(40 FR 28053, July 3, 1975. Correctly redesignated at 46 FR 21156, April 9, 1981.)

Revised 8/88

EQUAL OPPORTUNITY/ AFFIRMATIVE ACTION REQUIREMENTS

EQUAL EMPLOYMENT OPPORTUNITY/AFFIRMATIVE ACTION REQUIREMENTS

AFFIRMATIVE ACTION PROGRAM:

Submission by the contractor and all subcontractors of an Affirmative Action Plan in compliance with the requirements of Mayor's Order 85-85, is a requirement of this contract. These Affirmative Action Plans must be received by the Contracting Officer, DDOT, Office of Contracting and Procurement, 2000 14th Street, NW, 6th Floor, Washington, DC 20009 within five (5) working days subsequent to the bid opening. Failure to comply in a timely manner may render the bid non-responsible.

MINORITY AND FEMALE UTILIZATION:

A minority utilization rate of forty-two percent (42%) for each craft and a female utilization rate of six and nine/tenths percent (6.9%) in the contractor's and subcontractors' aggregate construction workforce is applicable to this project.

APPRENTICESHIP PROGRAM

All prime Contractors and subcontractors who contract with the District of Columbia Government to perform construction or renovation work with a single contract or cumulative contracts of a least \$500,000.00 let within a twelve (12) month period, shall be required to register an apprenticeship program with the District of Columbia Apprenticeship Council. (D.C. Code 36-404 (1988)).

APPRENTICES AND TRAINEES

This S.P. supplements APPRENTICES AND TRAINEES, Article 3 of STANDARD CONTRACT PROVISIONS FOR USE WITH SPECIFICATIONS FOR DISTRICT GOVERNMENT CONSTRUCTION PROJECTS, DATED 1973; as amended by the Transmittal Sheet No. 5.

- (1) In Items A, B and C, except for subparagraph C5, wherever the words "Apprenticeship Council, DC Department of Labor" appear, add immediately after: "and/or U.S. Department of Labor."

The Contractor and all subcontractors shall furnish to the Contracting Officer written evidence of the registration of his/her program and apprentices as well as the appropriate ratios and wage rates for the areas of construction, prior to using any apprentice on the contract.

EMPLOYMENT OF THE HANDICAPPED:

The contractor and all subcontractors agree not to discriminate against any handicapped person who is qualified to perform the job and also agrees to take Affirmative Action to hire, recruit, train and upgrade qualified handicapped persons without discrimination.

UTILIZATION OF MINORITY BANKING INSTITUTIONS:

All prime and subcontractors are encouraged to use the services of banks and other financial institutions owned and controlled by minorities and females.

MONTHLY EMPLOYMENT UTILIZATION REPORTS:.

Submission of Monthly Employment Utilization Reports (Form AARU-102) to the Contracting Officer is a requirement of this contract. These reports are due on the last working day of each month at the following address:

District of Columbia Government
Department of Transportation
Office of Contracting and Procurement
2000 14th Street, NW, 6th Floor
Washington, DC 20009

Prime contractors are responsible for timely submission of these reports from all their subcontractors. Failure to comply with this requirement may delay partial payment voucher processing

PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISE AND NON- DISADVANTAGED BUSINESS ENTERPRISE FIRMS

**PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISE AND
NON-DISADVANTAGED BUSINESS ENTERPRISE FIRMS**

Policy: The District Department of Transportation (DDOT) has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the U.S. Department of Transportation (DOT), 49 CFR Part 26. The District Department of Transportation (DDOT) has received Federal financial assistance from the Department of Transportation, and as a condition of receiving this assistance, the District Department of Transportation (DDOT) has signed an assurance that it will comply with 49 CFR Part 26.

It is the policy of the District Department of Transportation (DDOT) to ensure that DBEs are defined in part 26, have an equal opportunity to receive and participate in DOT-assisted contracts. It is also our policy:

- To ensure nondiscrimination in the award and administration of DOT - assisted contracts;
- To create a level playing field on which DBEs can compete fairly for DOT-assisted contracts;
- To ensure that the DBE Program is narrowly tailored in accordance with applicable law;
- To ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are permitted to participate as DBEs;
- To help remove barriers to the participation of DBEs in DOT assisted contracts;
- To assist the development of firms that can compete successfully in the market place outside the DBE Program.

Lisa Gregory, Esq., Chief Office of Civil Rights has been delegated as the DBE Liaison Officer. In that capacity, the Chief Office of Civil Rights is responsible for implementing all aspects of the DBE program. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations incurred by the District Department of Transportation (DDOT) in its financial assistance agreements with the U.S. Department of Transportation.

The District Department of Transportation (DDOT) has disseminated this policy statement to the DDOT's Executive Team and all of the components of our organization. We have distributed this statement to DBE and non-DBE business communities that perform work for us on DOT-assisted contracts on The District Department of Transportation (DDOT) website and on the agency bidders' document.

Sincerely,

Terry Bellamy
Director, District Department of Transportation

Definitions -The following definitions apply to this contract:

- A. **“Disadvantaged business”** means a small business concern, (a) which is at least fifty-one percent (51%) owned by one or more socially and economically disadvantaged individuals or in the case of any publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.
- B. **“Small business concern means”**, with respect to firms seeking to participate as DBEs in DOT-assisted contracts, a small business concern as defined pursuant to section 3 of the Small Business Act and Small Business Administration regulations implementing it (13 CFR part 121) that also does not exceed the cap on average annual gross receipts specified in § 26.65(b).
- C. Socially and economically disadvantaged individual means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is—
- Any individual who a recipient finds to be a socially and economically disadvantaged individual on a case-by-case basis.
 - Any individual in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:
 - “Black Americans,” which includes persons having origins in any of the Black racial groups of Africa;
 - “Hispanic Americans,” which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
 - “Native Americans,” which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
 - “Asian-Pacific Americans,” which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong;
 - “Subcontinent Asian Americans,” which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
 - Women;

- Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

The Contracting Officer shall make a rebuttable prerogative that individuals in the above groups are socially and economically disadvantaged. This prerogative shall be based on criteria set forth in 49 CFR Part 26. The Contracting Officer also may determine, on a case-by-case basis, that individuals who are not members of one of the above groups are socially and economically disadvantaged.

Prompt Payment: The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than **no later than 7 days** from the receipt of each payment the prime contract receives from The District Department of Transportation (DDOT). The prime contractor agrees further to return retainage payments to each subcontractor within **no later than 7 days** after the subcontractors work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the DDOT. This clause applies to both "DBE and non-DBE subcontracts." **Failure to do so shall be a ground for appropriate action against the party involved (e.g.: findings of non-responsibility for future contracts and/or suspension and debarment).**

To obtain additional information on DBE Compliance, please contact the Office of Civil Rights

Mohammed Kabir, PHR/Sr. EO Local and Federal Compliance Officer

Office of Civil Rights
District Department of Transportation
55 M Street, SE, 3rd floor
Washington, DC 20003
(202) 299-2190
Mohammed.Kabir@dc.gov

CONTRACT ASSURANCE / CONTRACT GOALS:

CONTRACT ASSURANCE

The Contractor, Sub-recipient, Sub-consultant or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out all the applicable requirements of 49 C.F.R. Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as DDOT deems appropriate.

Furthermore, Title VI of the Civil Rights Act of 1964 assures that no person or group of persons may, on the grounds of race, color, national origin, sex, age, handicap or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any and all programs or activities administered by DDOT. For further information regarding Title VI, please contact the Office of Civil

Rights, 55 M Street S.E. 3rd Floor. Washington, DC 20003. Our telephone number is: (202) 299-2190

The above information is applicable to every Contractor including every tier of sub-consultants, subcontractors, supplier or service providers on this project. It is the responsibility of the prime Contractor, and all sub-consultants, subcontractors, suppliers and service providers to ensure equal opportunity for all firms to participate on this project.

RACE/GENDER NEUTRAL GOAL

There is no specific numerical DBE goal assigned to this project. While no numeric DBE goal is assigned to this contract, the Contractor, sub-recipient, sub-consultant or subcontractor should make every reasonable effort to solicit DBE firms to participate as sub-consultants, subcontractors, service providers and suppliers on this project.

The Contractor may find DBE firms certified by the DDOT Unified Certification Program in DDOT's Disadvantaged Business Enterprise (DBE) Directory. The DBE Directory can be found at the following website:

DBE Directory:

Our DBE Directory is a great resource for our Prime Contractors to identify partners that are DBE Certificated with District Department of Transportation and Washington Metropolitan Area Transit Authority. Our DBE Directory is updated daily.

<http://ddotfiles.com/db/DBE/dbe.php>

If a proposed partner from the Prime Contractors is not in the DDOT DBE Directory. Please contact our office.

Luisa Portillo, Equal Opportunity/DBE Program Specialist

DDOT Office of Civil Rights
55 M Street, S.E., 3rd Floor
Washington, D.C. 20003
(202) 671-0630
Luisa.Portillo@dc.gov

Ms. Tammy Paige-Sterling, DBE Program Assistant

Washington Metropolitan Area Transit Authority (WMATA)
600 Fifth Street, NW
Washington, DC 20001
Office: (202) 962-2409

DEPARTMENT OF LABOR GENERAL WAGE DECISIONS

General Decision Number: DC140001 05/30/2014 DC1

Superseded General Decision Number: DC20130001

State: District of Columbia

Construction Types: Heavy (Heavy and Sewer and Water Line) and Highway

County: District of Columbia Statewide.

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines);
HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/03/2014
1	01/24/2014
2	01/31/2014
3	04/11/2014
4	04/25/2014
5	05/09/2014
6	05/16/2014
7	05/23/2014
8	05/30/2014

* ASBE0024-001 10/01/2013

	Rates	Fringes
Asbestos Worker/Heat and Frost Insulator Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.....	\$ 33.13	13.76

* ASBE0024-002 10/09/2013

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems.....	\$ 20.86	5.46

* ASBE0024-005 10/01/2013

	Rates	Fringes
Fire Stop Technician.....	\$ 26.06	5.90

Includes the application of materials or devices within or around penetrations and openings in all rated wall or floor assemblies, in order to prevent the passage of fire, smoke of other gases. The application includes all components involved in creating the rated barrier at perimeter slab edges and exterior cavities, the head of gypsum board or concrete walls, joints between rated wall or floor components, sealing of penetrating items and blank openings.

 BOIL0193-001 01/01/2014

	Rates	Fringes
Boilermakers:.....	\$ 38.07	22.58

 BRDC0001-001 05/04/2014

	Rates	Fringes
Bricklayer.....	\$ 29.17	8.61

 BRMD0001-004 05/04/2014

	Rates	Fringes
BRICKLAYER Refractory (Firebrick).....	\$ 36.08	8.78

 CARP0132-001 05/01/2013

	Rates	Fringes
Carpenter/Lather.....	\$ 26.81	8.13
Piledriver.....	\$ 26.62	8.15

 CARP1831-001 04/01/2013

	Rates	Fringes
MILLWRIGHT.....	\$ 31.59	8.58

 CARP2311-002 05/01/2013

	Rates	Fringes
DIVER TENDER.....	\$ 29.00	8.15
DIVER.....	\$ 37.74	8.15

 ELEC0026-001 11/04/2013

	Rates	Fringes
--	-------	---------

Electricians.....\$ 40.95 14.63

ELEC0070-001 05/06/2013

	Rates	Fringes
Line Construction:		
Cable Splicers.....	\$ 33.00	19%+5.00
Equipment Operators.....	\$ 33.00	19%+5.00
Groundman.....	\$ 15.35	19%+5.00
Linemen.....	\$ 33.00	19%+5.00
Truck Driver.....	\$ 17.45	19%+5.00

ENGI0077-001 05/01/2013

	Rates	Fringes
Power equipment operators: (HEAVY AND HIGHWAY CONSTRUCTION)		
GROUP 1.....	\$ 33.96	8.45+a+b
GROUP 2.....	\$ 32.89	8.45+a+b
GROUP 3.....	\$ 32.40	8.45+a+b
GROUP 4.....	\$ 31.65	8.45+a+b
GROUP 5.....	\$ 29.50	8.45+a+b
GROUP 6.....	\$ 24.68	8.45+a+b
GROUP 7.....	\$ 34.34	8.45+a+b

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Tower Cranes and Cranes 100 ton and over.

GROUP 2: 35 ton cranes & above, tower & climbing cranes, derricks, concrete boom pump, drill rigs (equivalent to L & Double L), mole.

GROUP 3: Backhoes, cableways, cranes, cherry pickers, elevating graders, hoists, paving mixers, power shovels, tunnel shovels. batch plants, shields, tunnel mining machines, gradalls, front end loaders, 3 1/2 cu. yds. and above, power driven wheel scoops and scrapers (50 cu. yds. struck capacity or above), rail tamper, draglines, boomcat, mucking machines, graders in tunnels, pile driving engines.

GROUP 4: Front end loaders below 3 1/2 cu. yds, boom trucks, hydraulic backhoes 1/2 yds. capacity or below rubber or track mounted, tug boats, power driven wheel scoops & scrapers, blade graders, motor graders, bulldozers, trenching machines, concrete mixer, speed swing pettibone, ballast regulator, concrete pump, mechanic, welder, mechanic welder, shotcrete machines, Hoeram, locomotive (standard, narrow gauge), tuggers.

GROUP 5: High lifts above 10 feet, boilers (skelton), asphalt spreaders, bullfloat finishing machines, concrete finishing

EMPLOYEE TRAINING REQUIREMENTS

EMPLOYEE TRAINING REQUIREMENTS

23 CFR, Part 230, Subpart A, Appendix B applies to this contract, except as modified below. Prior to commencing, the contractor shall submit to the DC Department of Transportation Contracting Officer for approval, the number of trainees to be trained in each selected and classification and providing the prospective trainee's home address(es) and social security number(s). The number of trainees to be trained under this contract is (0) shall be in the following classifications:

<u>CRAFT</u>	<u>NUMBER</u>

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Contracting Officer, DC Department of Transportation and the Division Engineer, Federal Highway Administration.

For purposes of this requirement, a trainee is defined as a person who is registered and receiving on-the-job training in a construction or construction management occupation under a program which has been approved and certified in advance by the U.S. Department of Labor, Employment and Training Administration or by the Division Engineer, Federal Highway Administration.

A trainee differs from an apprentice in that an apprentice means (1) a person employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or (2) a person in the first 90 days of probationary employment in an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where applicable) to be eligible for probationary employment as an apprentice.

Contractors are encouraged to utilize the resources of the District of Columbia, Department of Employment Services, Employer Services Center and the District of Columbia, Department of Transportation to recruit and hire prospective trainees. Prospective trainees who are not enrolled in any approved program may be selected from among the contractor's construction workforce, subject to the approval of the Contracting Officer.

The District Department of Transportation-Construction Contract Branch will monitor your training program closely during the life of the project to ensure that the training program is being administered in compliance with the applicable Federal regulations and that the assigned number of trainees are enrolled and receiving

training. Contractors are reimbursed only for training actually given and carefully documented by the Project Engineer and verified by the District Department of Transportation-Construction Contract Branch.

APPRENTICESHIP PROGRAM:

All prime Contractors and subcontractors who contract with the District of Columbia Government to perform construction or renovation work with a single contract or cumulative contracts of at least \$500,000.00, let within a twelve (12) month period, shall be required to register and apprenticeship program with the District of Columbia Apprenticeship Council. (D.C. Code 36-409((1981))).

APPRENTICES AND TRAINEES:

This S.P. supplements APPRENTICES AND TRAINEES, ARTICLE 3 of STANDARD CONTRACT PROVISIONS FOR USE WITH SPECIFICATIONS FOR DISTRICT GOVERNMENT CONSTRUCTION PROJECTS, DATED 1973; as amended by the Transmittal Sheet No. 5.

- (1) In Items A, B and C, except for subparagraph C5, wherever the words "Apprenticeship Council, D.C. Department of Labor" appear, add immediately after: "and/or U.S. Department of Labor."
- (2) In Item B. Trainees, add the following: "Training programs approved under the requirements of Article IV; Section 4 and 5 of Required Contract Provisions, Federal Aid Construction Contracts (Form FHWA-1273) will satisfy the requirements of this item.

The contractor and all subcontractors shall furnish to the Contracting Officer written evidence of the registration of his/her program and apprentices as well as the appropriate ratios and wage rates for the areas of construction, prior to using any apprentice on the contract.

GOVERNMENT OF THE DISTRICT OF COLUMBIA

**DEPARTMENT OF
TRANSPORTATION**

TRANSPORTATION OPERATIONS ADMINISTRATION



BID FORM AND PROPOSALS

INVITATION NO.: DCKA-2014-B-0052

**PROJECT: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM
- PHASE 1 DETECTION SYSTEM**

F.A.P. NO: STP-8888 (453)

Bids will be publicly opened by the District Department of Transportation, Office Of Contracting and Procurement, 55 M Street, SE, Suite 400 Washington, D.C. 20003

Bids Will Be Opened On **JULY 14, 2014** At 2:00 P.M.

**GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION**

TITLE PAGE – BID FORMS AND PROPOSALS

-
1. DEPOSIT BID AT:
District Department of Transportation
Office of Contracting and Procurement
55 M Street, SE, Suite 400
Washington, DC 20003
2. PROSPECTIVE BIDDERS: Detach bid and proposals, fill out and execute all forms as required, then submit to the office under No. 1 prior to the time of Bid Opening.
DO NOT STAPLE EXECUTED BID BOND IN WITH BID PACKAGE. ENCLOSE SEPARATELY.

-
3. All bids are to be submitted to the District Department of Transportation, Office of Contracting and Procurement, 55 M Street, Suite 400, Washington, DC 20003.

TABLE OF CONTENTS

Bid Bond

Bid Form

Pay Item Schedule consisting of **2** Pages

Non-Collusion Affidavit

Certification of Eligibility

Disclosure of Lobbying Activities (2 Pages)

Certification Regarding Debarment

Equal Employment Opportunity Certificate – Nonsegregated Facilities Certificate

Payment to Subcontractors and Suppliers Certificate

Certification For Grants, Loans And Cooperative Agreements District Of Columbia Department Of Transportation

Tax Certification Affidavit

District Department of Transportation Disadvantaged Business Enterprise Certification
Subcontractor (DBE & Non-DBE) Information

FAP (OM)

Department of Transportation	BID BOND (CONSTRUCTION)		Date Bond Executed (Must Not be later Than Bid Opening Date)		
Bid Bond Period Ninety (90) Calendar Days After Bid Opening	TYPE OF ORGANIZATION ("X")				
PRINCIPAL Name(s) and Address(es)	Y INDIVIDUAL	Y PARTNERSHIP			
	Y JOINT VENTURE	Y CORPORATION			
	STATE OF INCORPORATION				
	PENAL SUM OF BID				
	AMOUNT NOT TO EXCEED				
SURETY (IES) Name(s) and Address(es)	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)	5%
					OF BID
	BID IDENTIFICATION				
	BID OPENING DATE		INVITATION NO.: DCKA-2014-B-0052		

KNOW ALL MEN BY THE PRESENTS. That we, the Principal and Surety(ies) hereto, are firmly bound to the District of Columbia Government, a municipal corporation, hereinafter called the District, in above penal sum for the payment of which we bind ourselves, our heirs, executors and successors, jointly and severally Provided, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the bid identified above.

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within ninety (90) calendar days after said opening, and shall within the period specified therefore, or, if no period be specified, within ten (10) days after being called upon to do so, furnish Performance & Payment bonds with good and sufficient surety, as may be required, for the faithful performance and proper fulfillment of the Contract, and for the protection of all persons supplying labor specified, or the failure to furnish such bond within the time specified, if the Principal shall pay the District the difference between the amount specified in said bid and the amount for which the District may procure the required work and/or supplies, if the latter amount be in excess of the former, then the above obligations shall be void and of no effect, otherwise to remain in full force and virtue.

Each Surety executing this bond hereby agrees that its obligation shall not be impaired by extension(s) of time for acceptance of the bid that the Principal may grant to the District, notice of which extension(s) to the Surety(ies) being hereby waived; provided that such waiver of notice shall apply only with respect to extensions aggregating not more than ninety calendar days in addition to the period originally allowed for acceptance of the bid.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this bid bond and have affixed their seals on the date set forth above.

PRINCIPAL		
1. Signature	1. Attest	Corporate Seal
Seal		
Name & Title (Typed)	Name & Title (Typed)	
2. Signature	2. Attest	Corporate Seal
Seal		
Name & Title (Typed)	Name & Title (Typed)	

PRINCIPAL (Continued)

CERTIFICATE AS TO CORPORATION

I, _____ Secretary of the Corporation named _____ as Principal herein, that _____ who signed this bond on behalf of the Principal was then _____

Of said corporation; that I know this signature, and his signature thereto is genuine; that said bond was duly signed and sealed for and on behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Secretary of Corporation

SURETY(IES)

1. Name & Address (typed)		State of Inc.	Liability Limit	Corporate Seal
Signature of Attorney-In-Fact	Attest (Signature)			
Name & Address (typed)	Name & Address (Typed)			
2. Name & Addressed (typed)		State of Inc.	Liability Limit	Corporate Seal
Signature of Attorney-In-Fact	Attest (Signature)			
Name & Address (typed)	Name & Address (typed)			

INSTRUCTIONS

1. This form shall be used whenever a bid guaranty is required in connection with construction, alteration and repair work.
2. Corporation's name should appear exactly as it does on Corporate Seal and inserted in the space designated "Principal" on the face of this form. If practicable, bond should be signed by President or Vice President; if signed by other official, evident of authority must be furnished. Such evidence should be in the form of an Extract of Minutes of a Meeting of the Board of Directors, or Extract of Bylaws, certified by the Corporate Secretary, or Assistant Secretary and Corporate Seal affixed thereto. CERTIFICATE AS TO CORPORATION must be executed by Corporate Secretary, or Assistant Secretary.
3. Corporations executing the bond as sureties must be among those appearing on the US Treasury Department's list of approved sureties and must be acting within the limitations set forth therein, and shall also be listed with the "Insurance Administration, Department of Consumer and Regulatory Affairs", to do business in the District of Columbia. The surety shall attach hereto an adequate Power-of-Attorney for each representative signing the bond.
4. Corporations executing the bond shall affix their Corporate Seals. Individuals shall sign full first name, middle initial and last name opposite the work "seal", two witnesses must be supplied, and their addresses, under the word "attest". If executed in Maine or New Hampshire, an adhesive shall be affixed.
5. Names of partners must be set out in body or bond form, with the recital that they are partners composing a firm, naming it, and all members of the firm shall execute the bond as individuals. Each signature must be witnessed by two persons and addresses supplied.

BID FORM
(CONSTRUCTION CONTRACT)

Read Instructions to Bidders (See Standard Contract Provisions as amended)	Invitation No.: DCKA-2014-B-0052 Issue Date:
---	--

TO: CONTRACTING OFFICER, GOVERNMENT OF THE DISTRICT OF COLUMBIA

In compliance with above Invitation, the undersigned proposes to furnish all plant, labor and materials and perform required work per provisions as set forth in the Standard Contract Provisions, as amended, specifications, addenda, drawings, for the consideration of:

PROJECT TITLE: **CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1 DETECTION SYSTEM**

The undersigned agrees that if he is awarded the Contract within 90 calendar days after bid opening date and he is notified thereof, he will within 10 days after the prescribed forms are forwarded for execution, or within any authorized extension of time, execute and deliver a Contract on Form No. DC 2640-6 and furnish performance and payment bonds on Form No. DC 2640-7 and Form No. DC 2640-8 with good and sufficient survey; and that if he falls or refuses, required bid guaranty shall be applied as specified in Instructions to Bidders.

Undersigned acknowledges receipt of the following addenda. Failure to acknowledge receipt of all addenda may result in rejection of bid.
--

Addendum No.	1	2	3	4	5	6	7	8
Received								

Enclosed is bid guaranty consisting of 5% of the total bid ∨ Bid Bond ∨ Certified Check ∨ Other
Name of bidder must be shown in full if an individual; and if a partnership, full names of all partners must be shown. If bidder is a corporation, impress corporate seal and furnish name of State where incorporated. If joint venture, all parties must sign.

Bidder represents that he operates as an individual, joint venture, corporation

Incorporated in State of _____	Telephone No. _____
Name of Bidder (Type or print)	Corporate Seal
DUNS or RUBS NO _____	
Business Address (Type or print)	
By (Signature in ink)	Attest
Title of Person Signing	Title of Person Attesting

Envelopes containing bid, guaranty, etc., must be sealed, marked and addressed as follows:

Mark envelope in upper left corner as follows: Invitation No.: DCKA-2014-B-0052 To be opened (date): 07/14/2014 At 2:00 P.M. Envelopes available from DDOT-Office of Contracting and Procurement	Address as follows: District Department of Transportation Construction Procurement Support Branch 55 M Street, SE, Suite 400 Washington, DC 20003
--	---

SCHEDULE OF ITEMS

CONTRACT ID: DCKA2014B0052

PROJECT(S): STP-8888(453)

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS

SECTION 0001 PHASE 1 ADAPTIVE DESIGN - DETECTION ESTIMATE

0010	612991 Traffic Control Special Item - LS - MAINTENANCE OF HIGHWAY TRAFFIC	LUMP		LUMP		
0020	612993 Traffic Control Special Item - EACH - DETECTION CAMERA - PRICE INCLUDES FURNISH AND INSTALL	EACH	2.000			
0030	612997 Traffic Control Special Item - LF - 12-PAIR 19 AWG UNDERGROUND COMMUNICATIONS CABLE	LF	10.000			
0040	612997 Traffic Control Special Item - LF - CAT5E PE CABLE - FURNISH AND INSTALL	LF	6080.000			
0050	613040 Furnish&Install Four 4 In PVC Encased Electrical Conduits	LF	20.000			
0060	613086 F&I Magnetic Sensor Detectors	EACH	281.000			
0070	613088 F&I Sensor Repeater On Any Pole Or Structure	EACH	30.000			
0080	900007 Equipment Special Item - EACH - AP SYSTEM - FURNISH AND INSTALL	EACH	12.000			

SCHEDULE OF ITEMS

DATE:

REVISED:

CONTRACT ID: DCKA2014B0052

PROJECT(S): STP-8888(453)

CONTRACTOR :

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0090	900007 Equipment Special Item - EACH - APCC SYSTEM - ACCESS POINT CONTROLLER CA RD, 2 RADIOS 2 APCC ISOLATORS 2 BRACKETS	EACH 11.000				
0100	900007 Equipment Special Item - EACH - MODEL 336SS TRAFFIC CONTROLLER CABINET - FURNISH AND INSTALL	EACH 1.000				
0110	900007 Equipment Special Item - EACH - PCC TRAFFIC CONTROLLER CABINET FOUNDATION - FURNISH AND INSTALL	EACH 1.000				
	SECTION 0001 TOTAL					
	TOTAL BID					

INVITATION NO.: DCKA-2014-B-0052

CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM

NON-COLLUSION AFFIDAVIT

I, the undersigned depose and certify that I am the _____
TITLE

_____ Of the _____
COMPANY

That I am authorized to make this affidavit on behalf of said company; and that said company has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive proposal submittal in connection with proposed contract.

Signature of Official

Date

CERTIFICATION OF ELIGIBILITY

INVITATION NO.: DCKA-2014-B-0052

**CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM**

_____, being
(President or Authorized Official of Bidder)
duly sworn (or under penalty of perjury under the laws of the United States), certifies that, except as noted below, (the Company) or any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds):

is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility under any Federal, District or State statutes;

has not been suspended, debarred, voluntarily excluded or determined ineligible by an Federal, District or state agency within the past three (3) years;

does not have a proposed debarment pending; and

has not been indicted, convicted, or had a civil judgment rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years.

Exceptions will not necessarily result in denial of award, but will be considered in determining acceptability of offeror. For any exception noted, indicate below to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Contractor

Date

President or Authorized Official

Title

The penalties for making false statements are prescribed in the Program Fraud Civil Remedies Act of 1986 (Public Law 99-509, 31 U.S.C. 3801-3812).

Subscribed and sworn before me this ____ day _____

At _____
City and State

Notary Seal

Notary Public

**DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET**

Approved by O
0346-01

Reporting Entity: _____

Page ____ of ____

**CERTIFICATION REGARDING DEBARMENT
SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION
LOWER TIER COVERED TRANSACTION**

INVITATION NO.: DCKA-2014-B-0052

CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM

_____, being
(President or Authorized Official of Bidder)

duly sworn (or under penalty of perjury under the laws of the United States), certifies that, except as noted below, (the Company) or any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of federal funds):

is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility under any Federal, District or State statutes;

has not been suspended, debarred, voluntarily excluded or determined ineligible by an Federal, District or state agency within the past three (3) years;

does not have a proposed debarment pending; and

has not been indicted, convicted, or had a civil judgment rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years.

Exceptions will not necessarily result in denial of award, but will be considered in determining acceptability of offeror. For any exception noted, indicate below to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Contractor

Date

President or Authorized Official

Title

The penalties for making false statements are prescribed in the Program Fraud Civil Remedies Act of 1986 (Public Law 99-509, 31 U.S.C. 3801-3812).

Subscribed and sworn before me this _____ day _____

At _____
City and State

Notary Seal

Notary Public

INVITATION NO.: DCKA-2014-B-0052

CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATE

Bidder represents that he [] has [] has not participated in a contract or subcontract subject to in substance either the equal opportunity provisions in Article 6 of LABOR PROVISIONS, STANDARD CONTRACT PROVISIONS, 1973, or Section 202 of Executive Order 11246 of 3 CFR; that he [] has [] has not filed all required compliance reports under any such contract or subcontract; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to subcontract awards.

NONSEGREGATED FACILITIES CERTIFICATE

Bidder represents that he does not and will not maintain or provide for his employees any segregated facility at any of his establishments; that he does not and will not permit his employees to perform their services at any location under his control where segregated facilities are maintained; and that he will obtain and retain identical certifications from proposed subcontractors prior to award of subcontracting exceeding \$10,000.00.

"Segregated facilities" shall mean any waiting room, work area, wash and rest room, eating area, time clock, locker room and other storage or dressing area, parking lot drinking fountain, recreation or entertainment area, transportation and housing facility, provided for employees which is segregated by explicit directive or is segregated on the basis of race, creed, color, or national origin, because of habit, local custom or otherwise.

Penalty for violations or making false statements is prescribed in 18 USC 1001.

Company

Signature of Official

Date

Title

INVITATION NO.: DCKA-2014-B-0052

**CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM**

PAYMENT TO SUBCONTRACTORS AND SUPPLIERS CERTIFICATE

The Contractor, prior to receiving a progress payment, shall submit to the Contracting Officer, certification that the contractor has made and will make timely payments to his subcontractors and suppliers within seven (7) business days of receipt of such payment by DC DOT for work performed by subcontractors/suppliers.

The certification must be accompanied by a list of all subcontractors and suppliers who will receive payment from the invoice and the dollar amount. Payment will not be made until the Prime Contractor submits this information.

Certification shall be made on the following standard form.

To: Contracting Officer
District Department of Transportation
55 M Street, SE, Suite 700
Washington, DC 20003

I hereby certify:

I have made, or will make payments to all my subcontractors/suppliers within seven (7) business days of receipt of such payment by DC DOT for work performed by the subcontractors/suppliers. The subcontractors and suppliers are listed herein:

Contractor/Company Name

Signature of Official

Date

Title

FAP
DC

**CERTIFICATION
FOR GRANTS, LOANS
AND COOPERATIVE AGREEMENTS
DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION**

INVITATION NO.: DCKA-2014-B-0052

CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM

The undersigned certifies, to the best of his or her knowledge and belief, that:

No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, and contracts and subcontracts under grants, subgrants, loans, and cooperative agreements) which exceed \$100,000, and that all such subrecipients shall certify and disclose accordingly.

This certification is material representation of fact upon which reliance was placed when this award was made. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file that required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Title of Official

Company

Date

Signature of Official

A bidder's failure to submit this certification or submission of a false certification may render his/her bid non-responsive.

(FAP)

Revised 8/03
(FAP-OM)

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Office of the Chief Financial Officer
Office of Tax and Revenue



TAX CERTIFICATION AFFIDAVIT

THIS AFFIDAVIT IS TO BE COMPLETED ONLY BY THOSE WHO ARE REGISTERED TO CONDUCT BUSINESS IN THE DISTRICT OF COLUMBIA.

Date

Name of Organization/Entity
Business Address (include zip code)
Business Phone Number(s)

Principal Officer Name and Title
Square and Lot Information
Federal Identification Number
Contract Number
Unemployment Insurance Account No.

"I hereby authorize the District of Columbia, Office of the Chief Financial Officer, Office of Tax and Revenue; consent to release my tax information to an authorized representative of the District of Columbia agency from which I am seeking to enter into a contractual relationship. I understand that the information released under this consent will be limited to whether or not I am in compliance with the District of Columbia tax laws and regulations as of the date found on the government request. I understand that this information is to be used solely for the purpose of determining my eligibility to enter into a contractual relationship with a District of Columbia agency. I further authorize that this consent be valid for one year from the date of this authorization."

I hereby certify that I am in compliance with the applicable tax filing and payment requirements of the District of Columbia.

The Office of Tax and Revenue is hereby authorized to verify the above information with the appropriate government authorities. The penalty for making false statements is a fine not to exceed \$5,000.00, imprisonment for not more than 180 days, or both, as prescribed by D.C. Official Code § 47-4106.

Signature of Authorizing Agent

Title

**DISTRICT DEPARTMENT OF TRANSPORTATION
DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION
SUBCONTRACTOR (DBE & Non-DBE) INFORMATION**

INVITATION NO.: DCKA-2014-B-0052

CAPTION: CONSTRUCTION OF DDOT ADAPTIVE SIGNAL CONTROL SYSTEM – PHASE 1
DETECTION SYSTEM

49 CFR PART 26

The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.

I hereby submit the names of any firm, both DBE and Non-DBE from which quotations were received or discussions were held in conjunction with this project. The following information is being provided: name, address of firm, proposed area of work, and proposed dollar amount.

Name	Address	Area of work	Proposed \$ amount

Additionally, I certify that, I will submit a complete DBE Plan in accordance with the Special Provisions entitled **“Participation by Disadvantaged and Non-Disadvantaged Business Enterprise Firms”** within five (5) days subsequent to the bid opening. Said plan will contain the name, address of DBE firm, amount of award and area of work. **A bidder’s/offeror’s failure to submit this certification or submission of a false certification may render his/her bid non-responsive.**

_____ Title of Official

_____ Company

_____ Signature of Official

_____ Date