

settlement of any violation of Federal law including the the False Claims Act, 31 U.S.C. § 3729.

Performance During Dispute - Unless otherwise directed by the recipient, contractor shall continue performance under this contract while matters in dispute are being resolved.

Claims for Damages - Should either party to the contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within ten days after the first observance of such injury or damage.

Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the recipient and contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the residing State.

Rights and Remedies - Duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the recipient or contractor shall constitute a waiver of any right or duty afforded any of them under the contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

22. DISADVANTAGED BUSINESS ENTERPRISE

Contracts over \$3,000 awarded on the basis of a bid or proposal offering to use DBEs

a. This contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs. The national goal for participation of Disadvantaged Business Enterprises (DBE) is 5%. The recipient's overall goal for DBE participation is listed elsewhere. If a separate contract goal for DBE participation has been established for this procurement, it is listed elsewhere.

b. The contractor shall not discriminate on the basis of race, color, religion, 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 this contract. 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 municipal corporation deems appropriate. Each subcontract the contractor signs with a subcontractor must include the assurance in this paragraph (see 49 CFR 26.13(b)).

c. If a separate contract goal has been established, Bidders/offerors are required to document sufficient DBE participation to meet these goals or, alternatively, document adequate good faith efforts to do so, as provided for in 49 CFR 26.53.

d. If no separate contract goal has been established, the successful bidder/offeror will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.

e. The contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the contractor's receipt of payment for that work from the recipient. In addition, the contractor may not hold retainage from its subcontractors or must return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to this contract is satisfactorily completed or must return any retainage payments to those subcontractors within 30 days after incremental acceptance of the subcontractor's work by the recipient and contractor's receipt of the partial retainage payment related to the subcontractor's work.

f. The contractor must promptly notify the recipient whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without prior written consent of the recipient.

23. PROMPT PAYMENT

Applicability – All contracts except micro-purchases (\$3,000 or less, except for construction contracts over \$2,000)

The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 30 days from the receipt of each payment the prime contract receives from the Recipient. The prime contractor agrees further to return retainage payments to each subcontractor within 30 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 Recipient. This clause applies to both DBE and non-DBE subcontracts.

24. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS

All contracts except micro-purchases (\$3,000 or less, except for construction contracts over \$2,000)

The preceding provisions include, in part, certain Standard Terms & Conditions required by USDOT, whether or not expressly stated in the preceding contract provisions. All USDOT-required contractual provisions, as stated in FTA Circular 4220.1F, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The contractor shall not perform any act, fail to perform any act, or refuse to comply with any request that would cause the recipient to be in violation of FTA terms and conditions.

25. OTHER FEDERAL REQUIREMENTS

The following requirements are not federal clauses.

Full and Open Competition

In accordance with 49 U.S.C. § 5325(a) all procurement transactions shall be conducted in a manner that provides full and open competition.

Prohibition against Exclusionary Or Discriminatory Specifications

Apart from inconsistent requirements imposed by Federal statute or regulations, the contractor shall comply with the requirements of 49 USC 5323(h)(2) by refraining from using any FTA assistance to support procurements using exclusionary or discriminatory specifications.

Conformance with Its National Architecture

Contractor shall conform, to the extent applicable, to the National Intelligent Transportation Standards architecture as required by SAFETEA-LU Section 5307(c), 23 U.S.C. Section 512 and as amended by MAP-21 23 U.S.C. § 517(d), note and follow the provisions of FTA Notice, "FTA National Architecture Policy on Transit Projects," 66 Fed. Reg. 1455 et seq., January 8, 2001, and any other implementing directives FTA may issue at a later date, except to the extent FTA determines otherwise in writing.

Access Requirements for Persons With Disabilities

Contractor shall comply with 49 USC 5301(d), stating Federal policy that the elderly and persons with disabilities have the same rights as other persons to use mass transportation services and facilities and that special efforts shall be made in planning and designing those services and facilities to implement that policy. Contractor shall also comply with all applicable requirements of Sec. 504 of the Rehabilitation Act (1973), as amended, 29 USC 794, which prohibits discrimination on the basis of handicaps, and the Americans with Disabilities Act of 1990 (ADA), as amended, 42 USC 12101 et seq., which requires that accessible facilities and services be made available to persons with disabilities, including any subsequent amendments thereto.

Notification of Federal Participation

To the extent required by law, in the announcement of any third party contract award for goods and services (including construction services) having an aggregate value of \$500,000 or more, contractor shall specify the amount of Federal assistance to be used in financing that acquisition of goods and services and to express that amount of Federal assistance as a percentage of the total cost of the third party contract.

Interest of Members Or Delegates To Congress

No members of, or delegates to, the US Congress shall be admitted to any share or part of this contract nor to any benefit arising therefrom.

Ineligible Contractors and Subcontractors

Any name appearing upon the Comptroller General's list of ineligible contractors for federally-assisted contracts shall be ineligible to act as a subcontractor for contractor pursuant to this contract. If contractor is on the Comptroller General's list of ineligible contractors for federally financed or assisted construction, the recipient shall cancel, terminate or suspend this contract.

Other Contract Requirements

To the extent not inconsistent with the foregoing Federal requirements, this contract shall also include those provisions attached hereto, and shall comply with the recipient's Procurement Guidelines, available upon request from the recipient.

Compliance with Federal Regulations

Any contract entered pursuant to this solicitation shall contain the following provisions: All USDOT-required contractual provisions, as set forth in FTA Circular 4220.1F, are incorporated by reference. Anything to the contrary herein notwithstanding, FTA mandated

terms shall control in the event of a conflict with other provisions contained in this Agreement. Contractor shall not perform any act, fail to perform any act, or refuse to comply with any grantee request that would cause the recipient to be in violation of FTA terms and conditions. Contractor shall comply with all applicable FTA regulations, policies, procedures and directives, including, without limitation, those listed directly or incorporated by reference in the Master Agreement between the recipient and FTA, as may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

Real Property

Any contract entered into shall contain the following provisions: Contractor shall at all times comply with all applicable statutes and USDOT regulations, policies, procedures and directives governing the acquisition, use and disposal of real property, including, but not limited to, 49 CFR 18.31-18.34, 49 CFR 19.30-19.37, 49 CFR Part 24, 49 CFR 5326 as amended by MAP-21, 49 CFR part 18 or 19, 49 USC 5334, applicable FTA Circular 5010, and FTA Master Agreement, as they may be amended or promulgated during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

Access to Services For Persons With Limited English Proficiency

To the extent applicable and except to the extent that FTA determines otherwise in writing, the Recipient agrees to comply with the policies of Executive Order No. 13166, "Improving Access to Services for Persons with Limited English Proficiency," 42 U.S.C. § 2000d 1 note, and with the provisions of U.S. DOT Notice, "DOT Guidance to Recipients on Special Language Services to Limited English Proficient (LEP) Beneficiaries," 70 Fed. Reg. 74087, December 14, 2005.

Environmental Justice

Except as the Federal Government determines otherwise in writing, the Recipient agrees to promote environmental justice by following: (1) Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," February 11, 1994, 42 U.S.C. § 4321 note, as well as facilitating compliance with that Executive Order, and (2) DOT Order 5610.2, "Department of Transportation Actions To Address Environmental Justice in Minority Populations and Low-Income Populations," 62 Fed. Reg. 18377, April 15, 1997, and (3) The most recent and applicable edition of FTA Circular 4703.1, "Environmental Justice Policy Guidance for Federal Transit Administration Recipients," August 15, 2012, to the extent consistent with applicable Federal laws, regulations, and guidance,

Environmental Protections

Compliance is required with any applicable Federal laws imposing environmental and resource conservation requirements for the project. Some, but not all, of the major Federal laws that may affect the project include: the National Environmental Policy Act of 1969; the Clean Air Act; the Resource Conservation and Recovery Act; the comprehensive Environmental response, Compensation and Liability Act; as well as environmental provisions with Title 23 U.S.C., and 49 U.C. chapter 53. The U.S. EPA, FHWA and other federal agencies may issue other federal regulations and directives that may affect the project. Compliance is required with any applicable Federal laws and regulations in effect now or that become effective in the future.

Geographic Information and Related Spatial Data

Any project activities involving spatial data or geographic information systems activities financed with Federal assistance are required to be consistent with the National Spatial Data Infrastructure promulgated by the Federal Geographic Data Committee, except to the extent that FTA determines otherwise in writing.

Federal Single Audit Requirements for State Administered Federally Aid Funded Projects Only

Non Federal entities that expend \$500,000 or more in a year in Federal awards from all sources are required to comply with the Federal Single Audit Act provisions contained in U.S. Office of Management and Budget (OMB) Circular No. A 133, Audits of States, Local Governments, and Non Profit Organizations. Non Federal entities that expend Federal awards from a single source may provide a program specific audit, as defined in the Circular. Non Federal entities that expend less than \$500,000 in a year in Federal awards from all sources are exempt from Federal audit requirements for that year, except as noted in '3052.215(a), but records must be available for review or audit by appropriate officials of the Federal and State agencies.

Catalog of Federal Domestic Assistance (CFDA) Identification Number

The municipal project sponsor is required to identify in its accounts all Federal awards received and expended, and the Federal programs under which they were received. Federal program and award identification shall include, as applicable, the CFDA title and number, award number and year, name of the Federal agency, and name of the pass through entity.

CFDA Number for The Federal Transportation Administration

A Recipient covered by the Single Audit Act Amendments of 1996 and OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations," agrees to separately identify the expenditures for Federal awards under the Recovery Act on the Schedule of Expenditures of Federal Awards (SEFA) and the Data Collection Form (SF-SAC) required by OMB Circular A-133. The Recipient agrees to accomplish this by identifying expenditures for Federal awards made under Recovery Act separately on the SEFA, and as separate rows under Item 9 of Part III on the SF-SAC by CFDA number, and inclusion of the prefix "ARRA" in identifying the name of the Federal program on the SEFA and as the first characters in Item 9d of Part III on the SF-SAC.

26. 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.

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.

27. CONTRACT TYPE

This is a firm-fixed price (FFP) contract. The Contractor shall deliver all items in accordance with the terms and conditions of the contract award.

28. TERM OF CONTRACT

This is a firm-fixed price contract with a completion term through July 31, 2016 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 through the July 31, 2016 deadline.

29. 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.

30. 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 no later than July 31, 2016.

31. 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.

32. PRE-BID CONFERENCE

Prospective bidders are invited to attend a meeting to discuss the proposed work under this contract. The meeting will be held on October 23, 2015 @ 10:00 AM at 55 M Street, S.E. Suite 600, Washington, DC 20003.

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.

33. 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.

34. 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.

35. 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.

36. 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 either 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.

37. 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.

38. 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 Mr. Carl E. Brown, Jr., 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 CA for this contract is:

Name: Ogechi Elekwachi
 Title: ITS/Traffic Division
 Agency: District Department of Transportation
 Address: 55 M Street, SE, 6th Floor
 Washington, DC 20003

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, 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.

39. 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: Carl E Brown, Jr.
District Department of Transportation
Office of Contracting and Procurement
55 M Street SE, 7th Floor
Washington, D.C. 20003

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.

40. 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.

41. 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 and a public space permit shall be required for each individual project. The appendix to this contract provides specific guidance for the preparation and receipt of each. The Contractor shall be required to have sufficient qualified staff for successful completion of the application processes. The Contractor shall be required to 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 and the public space permit and copies of approved submittals shall be in the possession of the Contractor at all times when working in the field.

The project Critical Path Method (CPM) schedule for each intersection shall display as milestones 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.

42. 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.

43. 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.

44. 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 DDOT Transit Signal Priority implementation, including configuration of TSP intersection parameters in the fleet management software, configuration of the traffic controller for TSP operation, configuration of the phase selector central management software, cellular modem configuration, and configuration of the CMS as required. The Contractor shall perform the Work 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.

45. CONSTRUCTION SCHEDULING

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

The Contractor shall submit his construction schedule four (4) weeks prior to the start of construction for the approval of the Engineer. The contractor shall attend a coordination meeting with the DDOT TOA Project Manager to develop project schedule, including verification testing.

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

46. 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. Any electrical work performed by the Contractor shall 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. All work within a DC traffic signal cabinet performed by the Contractor shall have a minimum certification level of IMSA Level II. 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. A DDOT inspector shall oversee in-field labor to ensure compliance.

47. 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.

48. UTILITY PROTECTIVE ALERT

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

The table at the top of Page 74 of the DDOT Standard Specifications, 2013, 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

49. COORDINATION WITH WMATA

The Contractor shall coordinate with WMATA through the completion of implementation, testing, and evaluation as specified in the Scope of Work. It is the contractor's responsibility to schedule activities involving WMATA with sufficient lead time to adjust the schedule as necessary for timely completion of work. All modem SIM cards shall be provided by WMATA. Refer to Section 68 of these Special Provisions for WMATA contact information and additional detail.

50. ACCEPTANCE, GUARANTEE, AND FINAL APPROVAL

Completed On-Site Stand Alone Tests (SAT)
Acceptance of the Contractor's fieldwork shall be given by the Engineer after inspection and verification that all the fieldwork, as defined in the contract documents, special provisions, technical specifications and project plans has been satisfactorily completed. This acceptance can be granted as each individual field site location is completed and tested.

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.

Field Test FSAT can be granted at individual intersection locations, provided TSP performance is conveyed, relevant online systems are accessed, the TMC systems are functional, and system is verified (end-to-end) as accurate and complete in accordance with the System Test Plan (Section 53).

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 30 calendar days within a 40-day window without any type of failure of Contractor supplied equipment (hardware, software, firmware). A failure shall be defined as one that results in the operational loss of one or more components of the 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 53. During the OAT, observation of signal timing performance by the Engineer, or his designee, shall occur. Any TSP location that does not serve low priority calls from a TSP-enabled transit vehicle as expected (i.e., operations 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 TSP performance 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 TSP system. The Contractor shall perform on-site diagnosis and troubleshooting and repair or replacement of failed materials or equipment, as requested by the Engineer.

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 successful 30 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.

51. 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 hardware and software required for operation shall be to repair or replace and make operational all System components within 72 hours of being notified of the condition.

WARRANTY PERIOD. The obligations of Contractor to remedy defects shall extend through the manufacturer's warranty period to a date up to two (2) years after the completion of the contract and approval of testing for all equipment including, but not limited to hardware, software, firmware, materials, systems, subsystems, cabling, and wiring furnished and installed under this Contract.

Contractor shall provide a 2 year minimum warranty on the installation and sealing of the antenna mounting. During this 2 year period, the Contractor shall bare all costs of replacement of any equipment damaged inside the cabinet as a result of any leaking related to antenna mounting. Additionally, any damage to the traffic signal controller, and/or traffic signal cabinet components as a result of system installation, shall be fully replaced, installed, and made operational at the full cost of the Contractor during the warranty period. Any malfunctions and damages within the traffic signal cabinet will be subject to DDOT staff investigation.

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.

52. DATA QUALITY ASSURANCE

The Contractor is responsible for the provision of accurate reporting of performance data. As part of System Testing, described below, 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 as described in Section 53, requirements below are met or exceeded.

DATA PERFORMANCE CRITERIA. All TSP data shall be reviewed and analyzed by the Contractor for valid operation, and documentation, including generation of appropriate TSP request by TSP-enabled transit vehicle simulated TSP request via cellular communication unit for each approach, the accurate location of detection decision points at each approach,

and valid transit vehicle requests and traffic controller responses at each approach. TSP data that do not pass review and approval may be subject to further investigation.

Configuration accuracy and other operational parameters are to be separately verified as required.

Examples of data instances in which operation may not be approved include, but are not limited to, the following:

- TSP request sent by the transit vehicle outside of the approved parameters
- TSP request not sent by the transit vehicle within the approved parameters when a TSP request is the expected outcome
- TSP request not received by the phase selector when recognition of TSP request on the corresponding phase selector channel is the expected outcome
- TSP request not received by the Traffic Controller from the phase selector when recognition of TSP request on the corresponding Low Priority channel is the expected outcome
- Data latency from transit vehicle request to recognition by the traffic controller exceeds 1 second
- Time stamp indications of detection latency or clock drift
- Decision point locations outside of the GPS degree of accuracy
- TSP phase extension/early green varies from manual observation collected during DDOT inspection by more than 10%

If Quality Assurance review indicates invalid operation, reporting or performance data, the Contractor shall be directed to investigate the problem for up to one (1) year. The Project Engineer shall review and consider any Contractor explanation of suspected invalid data. The Project Engineer alone shall make the final determination on the validity of operational performance and reporting as to which data are or are not valid for use.

Any TSP system that generates invalid operational data shall be considered incomplete and shall not 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 data quality assurance shall be reflected, and distributed among the various contract Pay Items.

53. 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 transit signal priority system within the District. All System Testing shall meet requirements outlined in Section 50 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, to be included with submission of the Bid. 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.

No testing shall commence until DDOT has reviewed and approved the testing procedure to be conducted. If any of the tests below fail to conform to the outlined requirements, the Contractor shall identify the point of failure. If failure is the result of defective and/or damaged hardware, the contractor shall replace and reinstall the equipment at no additional cost to prior to retesting.

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. Advance 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 standard procedures outlined by the manufacturer, and approved by the Department.

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 field locations, the Contractor shall conduct field tests at each site 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 and test software in

order to perform local system operations and diagnostic test procedures. The Contractor shall conduct these tests prior to connecting the systems to the Department's 170 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. A sample checklist is provided below. 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 the Department's Engineer or designee. SAT testing shall be conducted in parallel with wayside equipment installation. SAT testing shall be conducted at each location as indicated in the Contract Plans to demonstrate the following for each detection system location:

All hardware and equipment has been installed properly and at the correct location. This includes the phase selector, 14-slot input file rack for model 336 cabinets, cellular modem, cellular antenna and mounting hardware, auxiliary interface panel, and all related wiring for operational implementation.

On-Site Stand Alone Test (SAT) Checklist (SAMPLE)

COMPLETION STATUS	STAND ALONE TEST (SAT) CHECKLIST
Yes/No	
HARDWARE	
	Model 170 traffic signal controller is configured with TSP parameters
	Phase selector card is properly installed on pre-existing card rack, or Model 336 cabinet is retro-fitted, and 14-slot input file rack and phase selector are properly installed, and properly connected to the cellular modem, Auxiliary Interface Panel according to specifications
	Cellular modem (with antenna) is properly installed and connected to the phase selector inside the cabinet with cellular antenna on top of the cabinet
	Auxiliary Interface Panel is properly mounted on the cabinet and connected to the phase selector and green phase outputs according to specifications
Key Configurations	
	Model 170 traffic signal controller is properly programmed with TSP timings. Key parameters include:
	<ul style="list-style-type: none"> • Rest in Walk disabled • Counter disabled on pedestrian countdown signals (to disable countdown during walk) • Coordination plan force offs and offsets adjusted to reflect yield point at start of yellow • "Pre-timed" on for all non-actuated phases • Low priority channels assigned to TSP phases • Phase extension/early green configured • Bus headway configured (if required)
	Phase selector is properly configured. Key parameters in the phase selector include:
	<ul style="list-style-type: none"> • Channel • IP address and other network settings • Time zone • Output mapping (set "Left" output to "None" for approaches/channels with near-side bus stop) • TOD operation
Basic Equipment Verification	
	Status and connection indicators on phase selector display steady green
	Channels A, B, C and D "HIGH" and "LOW" indicators indicate functional operation
	phase selector indicates Ethernet connectivity
	Indicator lights on auxiliary interface panel light up properly when the corresponding phase is green
	Perform the following tests if they have not been performed during installation:
	<ul style="list-style-type: none"> • Place a test call (low priority and high priority, if applicable) for each channel input from phase selector to verify that the correct phases are called in traffic signal controller and the green lights

COMPLETION STATUS	STAND ALONE TEST (SAT) CHECKLIST
Yes/No	
	are displayed correctly.

Final System Acceptance Tests (FSAT)

The Contractor shall conduct the FSAT in the presence of the Department’s Engineer or designee. This test shall be conducted from the Department’s traffic signal controller and phase selector card front panel displays and on-site software interfaces. All software requirements shall be tested as part of the FSAT.

The Contractor shall complete the FSAT for all locations within a 30-day period. 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 a final 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; failure of any SAT tested items; or failure of data transmission within a 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 and WMATA 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. Test Sheets 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 FSAT shall be signed-off after the successful completion of the test by both the Contractor and the appropriate Department personnel or their designee.

Prior to conducting any testing, as per this section, the Contractor must submit 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.

The objective of this Test Plan is to ensure that all TSP equipment provided under the Scope of Work is operational and functional as specified and meets the intended use of the end user(s). This Test Plan also serves the purpose of inspecting the interface between TSP in-cabinet hardware and the existing signal cabinet devices as well as the TSP in-cabinet hardware and the on-board vehicle interface. Attention will be given to the following test areas:

- TSP-enabled Transit Vehicle unit generates the appropriate TSP signal
- Cellular Antenna and phase selector properly detect TSP signals
- phase selector communicates properly with the traffic signal controller
- Conditional Priority based on lateness
- Conditional Priority based on passenger load

Test Boundaries

The test boundaries of FSAT include:

- All TSP hardware equipped intersections included in the Scope of Work
- Intersections locations pre-determined by DDOT
- Processing of AVL lateness information to generate a priority request
- Processing of passenger load information to generate a priority request

Hardware Items

Hardware items included in the Acceptance Test Plan include TSP equipment that will be documented in the Table once the project has been awarded. An example of this is shown below.

ITEMS	QUANTITY	LOCATIONS
Model XXX phase selector	XX	Each intersection
Model XXX Auxiliary Interface Panel	XX	Each intersection
Model XXX Cellular Modem	XX	Each intersection
Model XXX Cellular Antenna	XX	Each intersection
14-Slot Input File Rack for Model 336 Cabinet	XX	Each intersection
Misc. Mounting Hardware	As needed	Each intersection
Misc. Installation Cable	As needed	Each intersection

Test Tools

ITEMS	QUANTITY	PURPOSE
On-site Interface Software	1	System Set-up and Turn-on
CMS Software	1	Remote System Access

Other Required Tools:

ITEMS	QUANTITY	DESCRIPTIONS
Test Vehicle	1	TSP-enabled
Laptop Computer	1	Used along with communication cables (to phase selector and emitter) and loaded with on-site interface software
Server with CMS Loaded	1	Used to remotely interface with TSP hardware
Communication Device	1 set	Communication between vehicle driver and intersection test staff

Test Team Members and Responsibilities

The Test Team members include:

1. WMATA Representative(s),
2. DDOT Representative(s),

3. Prime Contractor and its Subcontractors.
4. AVL vendor representatives

Each member's role and responsibilities are defined in the following sections.

The WMATA representative is responsible for: the designation of the transit vehicle and transit vehicle operators to operate within each approach within a specified number of equipped intersections; assistance in the resolution of any operational issues during the test; certification of completion and Pass/Fail status of each required test within the Acceptance Test Procedure; and the design and implementation, with DDOT, of TSP time plans as well as the priority and preemption routines with DDOT.

The DDOT representative is responsible for designating a signal engineer to: ensure that all intersection equipment is operating per Street Department specifications at the time of the test; assist in resolving any operational issues during the test; monitor the TSP/EVP activity and data monitoring activity for each intersection; certify completion and Pass/Fail status of each required test within the Test Procedure; and ensure that the controllers have the proper TSP firmware configuration

The Contractor is responsible for: planning (to provide adequate notice to all parties), scheduling, coordinating and conducting the Test Plan; documenting and obtaining signatures of all Test results; developing a resolution plan for any/all failures encountered during the Test Plan; and completing the Test Plan report for circulation and final acceptance.

Test Compositions and Sequences

Tests shall be conducted at the specified intersections in the project area. Acceptance Test is composed of the following test sequences:

1. Cellular Communications Test
2. TSP Decision Point Test
3. TSP PRG Test
4. TSP request under lateness conditions
5. TSP request under passenger load conditions
6. TSP request under lateness and passenger load conditions
7. TSP PRG Detection Test

Cellular Communications Test

The objective of the Cellular Communications Test is to ensure that the system is communicating from a transit vehicle unit to the wayside TSP equipment. It also verifies that the controller cycles when a TSP is manually supplied. Information during this test will be recorded on the sample test spreadsheet shown on this test plan.

TSP Detection Test

The objective of the TSP Detection Test is to inspect the TSP parameter settings in the phase selector, verify that the TSP request is received by phase selector through cellular communications, and ensure that a priority request is sent and received by the signal controller for processing. The test shall be conducted on a number of TSP-enabled transit routes specified by the transit agency at the designated test intersections specified by the District. Information during this test will be recorded on the sample test spreadsheet shown on this test plan and the data requirements in Section 52, Data Quality assurance.

Contractor representative shall have an electronic copy of current phase selector parameter settings for each intersection. The settings should include unit setting and channel setting.

TSP Request under Lateness Conditions

The objective of the TSP request under lateness conditions is to ensure that TSP equipment installed on individual transit vehicles is requesting TSP when the defined schedule adherence criteria is reached. The test shall be conducted on TSP-enabled transit vehicles specified by the transit agency at the designated test intersections specified by the District under various schedule adherence conditions. Information during this test shall be recorded on the sample test spreadsheet shown on this test plan. Data logs shall also be checked for receipt of data.

TSP Request under Passenger Load Conditions

The objective of the “TSP request under passenger load conditions” test is to ensure that TSP equipment installed on individual transit vehicles is requesting TSP when a targeted passenger load condition is reached. The test shall be conducted on transit vehicles specified by WMATA at the designated test intersections specified by the District. The test shall be conducted when the targeted passenger load condition is not met and when it is met. Information during this test will be recorded on the sample test spreadsheet shown on this test plan. Data logs shall be checked for receipt of data.

TSP Request under Lateness and Passenger Load Conditions

The objective this test is to ensure that the TSP request is processed for a combination of schedule adherence and passenger load conditions. The test shall be conducted on transit vehicles specified by WMATA at the designated test intersections specified by the District when the schedule adherence and targeted passenger load conditions are not met and when they are met. Information during this test will be recorded on the sample test spreadsheet shown on this test plan. Data logs shall be checked for receipt of data.

Test Criteria and Failure Corrections

Test Criteria

For each test item, the test outcomes agree with the expected results is defined as a “success”. Otherwise, it is a “failure”. Each test item is required to reach either a consecutive “success” or consecutive “failure” before being labeled as a “Pass” or a “Fail” item. If a test result fluctuates between “success” and “failure” and is unable to reach either “Pass” or “Fail” status, it is labeled as an “On-hold” item. On-hold items should be tested at a later date, agreed to by all participating parties, until it can be labeled as either a “Pass” or a “Fail” item. Otherwise, it will be labeled as a “Fail” test item. It is possible to consider a “Conditional Pass” status if mutually agreed upon.

Failure Correction

Each “Fail” test item should be documented and listed into a punch-list as an open-case. Opened case will not be closed until the “Fail” test item is re-tested and passed.

Test Data Recording and Documentation

Test Data Sheets

Data obtained during the FSAT shall be entered into the Test Result Form, to be finalized by the Contractor once the project has been awarded. The Contractor is responsible for completion of the Test Result Form for each test item run.

The Test Result Form shall include the following information:

- Test procedure description
- Date of testing
- Test location
- Components tested
- Input and output measurements
- Detailed test results, including a Pass/Fail statement
- Detailed description and explanation of any test failures, anomalies, or other deviations from the expected results

Test Report

After the completion of the Test Plan activities, a Test Report shall be prepared by the Contractor and submitted for review. Each Test Report shall contain:

- Project History
 - Installation History
 - Installation Issues and Resolutions
- Acceptance Test Results
 - Acceptance Test Overview
 - Misc. Information
 - Issues and Resolutions
- Summary
 - Conclusions
 - Test Records
 - Approvals

30-day Operational Acceptance Test (OAT)

The Contractor shall commence the 30-calendar day OAT following successful completion 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 test for all systems at the same time.

The Contractor shall provide complete operations support as required for the duration of the 30- 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 30-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 calendar days without failure within a 40 day period. DDOT will conduct the 30-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 52.

If any equipment malfunction occurs, the 30-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 30-day OAT. The Contractor shall verify against the records maintained by the Department for accuracy.

If the Contractor does not complete the OAT, within the specified time, liquidated damages, as specified in Section 29 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 30-day test for that specific system. The 30-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 30-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 30-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:

Did the TSP equipment operate, without error, during that particular day?

Identify all equipment on which work is performed.

Cause of equipment malfunction (if any).

A description of the type of work performed.

Necessary labor, materials, and special equipment used.

Time required in completing the activity.

The Contractor shall make the maintenance and activity record log available to the Department upon request.

After the completion of the 30-day OAT, the Contractor shall conduct complete system diagnostics for field equipment as follows:

Equipment testing and adjustment of settings and parameters.

Check component operations with respect to these Special Provisions.

Also, following the completion of 30-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.

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 30-day OAT. This summary shall include the following information:

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.

Cable lists specifying cable, wire pair and connector and pin assignments for all signal, power and ground leads.

Composite drawing of the system and cabinets and racks

An As-Built plan set included.

The Engineer has the right to stop the 30-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 systematic 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 systematic diagnostic features.

Submit all manuals to the Engineer for approval at least 14 calendar days prior to the anticipated start of the 30-day OAT.

TESTING AND TRAINING PLANS. The Contractor shall supply and be approved by DDOT before the beginning of each test (SAT, FSAT, OAT), a specific testing plan that details how each piece of equipment shall be successfully tested. The Contractor shall supply a testing compliance matrix detailing how each system requirement, defined in the contract documents, is being successfully tested. Each test plan shall be submitted to DDOT for approval within 30 calendar days for approval before the start of any testing. No testing shall begin until a test plan has been approved by DDOT.

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 phase selectors, input file racks, cellular modems, cellular antennas, and auxiliary interface panels and software/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.

54. 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)

55. 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

56. 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: