

**GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DISTRICT DEPARTMENT OF TRANSPORTATION  
TRAFFIC SERVICES ADMINISTRATION**



**SPECIFICATIONS**

**INVITATION NO. DCKA-2012-B-0112**

**PROJECT:  
FY 2013 CITY-WIDE LED TRAFFIC SIGNAL REPLACEMENT  
CONTRACT**

**Federal Aid Project No. NH-STP-8888(433)**

Bids Will Be Publicly Opened By The Office Of Contracting and Procurement Bid Room  
located at 55 M Street SE 4th Floor, Washington, D.C. 20003

Bids Will Be Opened On \_\_\_\_\_ At 2:00 P.M.

**GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF PUBLIC WORKS**

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**TITLE PAGE - - SPECIFICATIONS**

**ISSUING OFFICE:**

Department of Transportation  
Office of Contracting and Procurement  
55 M Street SE 4<sup>th</sup> Floor  
Washington, DC 20003

Requests for clarification or interpretation of Bid Documents prior to date of Bid Opening:

**ADDRESS TO:** Contracting Officer  
DEPARTMENT OF TRANSPORTATION  
Office of Contracting and Procurement  
55 M Street SE  
Washington, DC 20003

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**Prospective Bidders:**

To bid this contract, detach the Bid Form package which is bound to the back of this book, fill out all forms along with the Bid Guaranty as required, and submit it to the Issuing Office prior to the time of bid opening.

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LIGHT EMITTING DIODE (LED) TRAFFIC SIGNAL MODULES (10 pages)

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SCHEDULE OF LED TRAFFIC SIGNAL REPLACEMENT AT INTERSECTIONS (38 pages)

REQUIRED CONTRACT PROVISIONS (12 PAGES)

APPENDIX A – SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES  
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DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (4 PAGES)

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The “STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES, 2009” and amendments thereto are incorporated herein by reference and are made part of the requirements of this contract.

## SPECIAL PROVISIONS

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

FY-13 City-Wide LED Traffic Signal Replacement Contract

Invitation No.:  
F.A.P. No.: NH-STP-8888 (433)

This document consists of:

SPECIFICATIONS: - Pages 1 through 30 and, the LED technical details are presented as Appendices

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

This is a Federal-Aid Contract; Article 105, FEDERAL-AID PROJECT PROVISIONS, applies.

This document supplements and modifies STANDARD CONTRACT PROVISION, for use with specifications for the District of Columbia Government Construction Project; STANDARD SPECIFICATION FOR HIGHWAYS AND STRUCTURES, 2009.

ADDENDA, issued prior to bid opening date, further supplement and modify the proposed contract.

Reference to Division Numbers, Section Numbers, and Article Numbers refers to STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES, 2009.

In PAY ITEM SCHEDULE, the first three-digit portion of each pay item number, when used, refers to the section of the STANDARD SPECIFICATIONS in which the item is further described.

1. SCOPE OF WORK:

The contractor shall furnish all necessary labor, materials and equipment necessary to replace all listed vehicular and pedestrian signal head with Light Emitting Diode (LED) modules at signalized intersections and at midblock flashing signals or warning devices in the District of Columbia. Work is to be performed at approximately eight hundred (800) signalized intersections on the Federal-aid Surface Transportation System. Work to be performed under this contract includes:

- Replacement LED modules in existing 12-inch vehicular and pedestrian signal heads.
- Replacement of existing pedestrian signal heads with new 2 Section pedestrian signal heads featuring LED modules
- Replacement of existing LED pedestrian signal heads with new 12-inch vehicular and pedestrian signal head featuring LED Modules.
- Replacement of damaged 12-inch LED vehicular and pedestrian signal heads with new 12-inch vehicular and pedestrian signal head featuring LED modules.
- Replacement of 12-inch vehicular signal heads containing unnecessary, redundant right or left turn arrow display with conventional 12-inch vehicle signal heads containing LED modules
- Installation of tunnel visors for 12-inch vehicular and pedestrian signal head at locations where they are missing or damaged
- Replacement of Model 200 switch pack in controller cabinets.
- Project management to include computerized tracking of project milestones, development and implementation of a computerized inventory system and preparation of lightning adjustment documents for the electricity provider.

2. CONTRACT TYPE:

This is an indefinite-quantity contract for the supplies and/or services specified, and effective for the period stated. The quantities of supplies and/or services specified in the Schedule are estimates only. Individual bid items must not be unbalanced since precise Quantities and locations are unknown at this time.

Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering Clause. The Contractor shall furnish to the District Government, when and if ordered, the supplies and/or services up to an including the maximum amount specified in the bid price of the successful bidder. The District Government will order at least the minimum amount of one hundred thousand dollars (\$100,000.00). The minimum and maximum will be the same for all option years.

There is no limit on the number of orders that may be issued. The District Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and District's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period.

#### ORDERING CLAUSE

Any supplies and services to be furnished under this contract must be ordered by issuance of delivery orders or task orders by the Contracting Officer. Such orders may be issued during the term of this contract.

All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of a conflict between a delivery order or task order and this contract, the contract shall control. If mailed, a delivery order or task order is considered "issued" when the District deposits the order in the mail. Orders may be issued by facsimile or by electronic commerce methods.

#### 3. Pre-Award Approval

Any contract in excess of \$1,000,000 shall not be binding or give rise to any claim or demand against the District until approved by the Council of the District of Columbia and signed by the CO.

#### 4. SPECIFICATIONS AND DRAWINGS:

The District of Columbia Department of Public Works, Standard Specifications for Highways and Structures (2009) and amendments thereto are incorporated by reference into this contract. In case of discrepancy:

1. The Contracting Officer shall be promptly notified, in writing, of any error, discrepancy or omission, apparent or otherwise.
2. Applicable Federal and D.C. Code requirements have priority over: the Contract form, General Provisions, labor Provisions, Change Orders, Addenda, Contract Drawings, Special Provisions and Specifications.
3. The Contract form, General Provisions and labor Provisions have priority over: Change Orders, Addenda, Contract Drawings, Special Provisions and Specifications.
4. Change Orders have priority over: Addenda, Contract Drawings, Special Provisions and Specifications.
5. Addenda have priority over: Contract Drawings, Special Provisions and Specifications. A later dated Addendum has priority over earlier dated Addenda.
6. Special Provisions have priority over: Contract drawings and other Specifications
7. Shown and indicated dimensions have priority over scaled dimensions.

8. Original scale drawing and details have priority over other different scale drawing and details.
9. Large scale drawing and details have priority over small scale drawings and details.

Any adjustment by the Contractor without a prior determination by the Contracting Officer shall be at his/her 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.

5. COORDINATION WITH OTHERS:

The Contractor is alerted that other contractors either associated with this project or of a different scope either 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. The Contractor shall perform his lane closings and reopening so as not to cause interference with others or to be in conflict with performance of traffic maintenance by others. The District assumes no liability for contracts delays or cost resulting from performance or non-performance of others.

The Contractor is further alerted that work crews will be working in the field at functioning traffic signals. The contractor shall make no attempt to start work at or perform repairs at a malfunctioning traffic signal. For purpose of this contract, a malfunctioning traffic signal shall be one flash, completely dark (all out) or partially all out. The contractor shall immediately report the existence of a malfunctioning, vacate the intersection, and return only when informed that repairs have been completed. Specific procedures will be discussed with the contractor at the pre-construction meeting.

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

6. CONTRACTOR IDENTIFICATION:

All Contractors doing business with the District of Columbia Government shall have a DUNS (Data Federal Identification Number)

Please refer any question regarding this matter to Office of Controller, (202) 671-2270 of the District Department of Transportation.

7. BID GAURANTY:

The Bid Guaranty period shall be ninety (90) calendar days after opening of the bids. 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.

8. TERM OF CONTRACT:

The term of the contract shall be for a period of one year from the award date subject to the District's option to extend the term of the contract in accordance with paragraph 1 and 2 below.

**1. Option Period:** The government may extend the term of the contract for up to three (3) one year periods.

**2. Option to Extend the term of the Contract**

- a. The government may extend the term of this contract for a period of one year, or a fraction thereof, or multiple successive fractions thereof, by written notice of the Contractor before expiration of the contract; provided that the government shall give the Contractor a preliminary written notice of its intent to extend at least thirty (30) days before the contract expires. The preliminary notice does not commit the government to an extension. The exercise of this option is subject to the availability of funds at the time of the exercise of this option.
- b. The prices for the option period shall be as specified in the contract.
- c. If the government exercises this option, the extended contract shall be considered to include this option provision.
- d. The total duration to this contract, including the exercise of any options under these provisions, shall not exceed five (5) years.

9. EVALUATION OF OPTIONS

The government will evaluate bids for awards purposes by adding the total price of all options to the total price for the base year requirements. Evaluation of options will not obligate the government to exercise the option(s).

The government may reject an offer as non-responsive if it is materially unbalanced as to price for the basic requirements and the option requirement. An offer is unbalanced when it is based on prices significantly less that cost for some items and prices that are significantly overstated for other items.

A prospective contractor shall be determined non-responsive if he or she fails to bid on the option year requirements.

10. BASIS OF AWARD

Bidder shall provide quotes for the base year period and for each of three one-year option periods. Failure to provide quotes for all four years will result in rejection of the bid. Award will be made to the lowest bidder based upon the Base Year and all three option years, as totaled by the Contracting Officer.

11. CONTRACTOR'S QUALIFICATIONS

The prime contractor shall be an electrical contractor licensed and bonded on the District of Columbia. The contractor's employees must be under the direction of a Master Electrician or an Electrical Engineer licensed in the District of Columbia. Additionally, each subcontractor shall also be an electrical contractor licensed and bonded in the District of Columbia.

12. APPLICABLE WAHE DECISION/WAGES RATES:

In accordance with the applicable provisions of 29 CFR Part 1 which require that the correct wage determination and the appropriate wage rates therein be incorporated into this contract, General Wage Decision No. DC130001 is bound herein and contains the specific applicable wage rates, which are:

HEAVY CONSTRUCTION

In accordance with 29 CFR, Part 1, Section 1.6 (c)(3)(IV), if the intent to award letter is not issued within ninety (90) days of bid opening, the executed contract will include all intervening modifications. The contractor will be reimbursed this added labor cost.

13. INFORMATIONAL DRAWINGS:

The contractor is advised that the Department of Transportation maintain records of traffic signal sequences of operation currently in service at each intersection in the city. Although no specifically required for the successful completion of this project, these records are available for the contractor's review and/or duplication at his expense. The contractor should contact the Traffic Signal Design Branch, 55 M Street, S.E., 6<sup>th</sup> floor, Washington, D.C. 2009, (202) 671-2270.

14. WORK AND STORAGE SPACE:

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

15. MAINTENANCE OF HIGHWAY TRAFFIC:

This S.P. modifies 104.02 and 616

(A) TRAFFIC FLOW RESTRICTIONS:

The actual duration of construction at each work site shall be minimized to reduce exposure to potential hazards. The Contractor's operation shall present no interference to traffic during the peak traffic hours of 6:30 a.m. to 9:30 a.m. and 3:30 p.m. to 7:00 p.m., Monday thru Friday, except holidays. The contractor may occupy one 10 foot lane adjacent to the construction site during the off peak hours and on weekends from 7:00 p.m. Friday to 6:30 a.m. Monday morning.

When working in entrance or exit ramps of the freeway system, the contractor shall maintain a minimum of one 11 foot-lane ramp traffic and, wherever possible, shall not work on the traveled portion of the ramp.

(B) TRAFFIC CONTROLS:

The Contractors shall submit to the engineer for approval, a traffic control plan or may submit typicals from the MUTCD that are applicable to perform the work prior to starting any construction. The plan shall include but not be limited to, the arrangement, size and location of such items as appropriate warning signs, traffic cones, and arrow panels. These traffic control devices shall conform to the most recent version of the MUTCD and D.C. Design Standards. The Contractor shall be responsible for furnishing, installing, maintaining and removing all required traffic control devices. All devices shall be in new or like new condition.

Lane Closures

When closing a lane, the Contractor shall furnish, install and maintain the necessary signs, traffic cones, and arrow panels, to effect the lane closure as outlined in paragraph 104.02(C) of the Standard Specifications and these Special Provisions. All flashing arrow panel for lane closures shall be Type "C" units and shall contain a noiseless type power source.

Traffic Control Devices

Approved warning signs, traffic cones, arrow panels, etc. shall be provided to ensure motorists positive guidance in advance of and through the work zone. Erection of

regulatory signs such as stop, speed limit and no parking must be specifically authorized.

Advance Warning signs shall be 48" x 48" in size and the face sheeting shall be Florescent Orange High Performance Wide Angle Retroreflective material or equal. Roll-up signs are approved, but they also must be 48" x 48" in size and of the same Orange Florescent material. Note: Mesh roll-up signs are not approved.

Sign supports shall be a spring loaded type or equivalent. Tripod or A-frame sign stands are not approved. The temporary signs and marking placed in or adjacent to the work zone shall be consistent and visible at all times. The existing signs and marking may be covered and/or removed temporarily of the intended functions of these signs and markings will not be applicable during construction. However, they shall be replaced promptly when work is completed. All temporary signs no longer applicable to the work zone shall be removed or turned away from traffic.

- (C) TRAFFIC SAFETY OFFICER – The Contractor shall have a competent, full time Traffic Safety Officer in accordance with the requirements of 616.02(B)(1).
- (D) MEASURE AND PAYMENT – No measure or payment will be made. The cost for maintenance of traffic safety services shall be reflected and distributed evenly over Pay Item No. 9 through 20 inclusive and No. 23.

16. PRE-BID CONFERENCE:

Prospective bidders are invited to attend a meeting to discuss the proposed work under this contract. Bidders will be notified of location, date and time by addendum. Representative 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 data 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 of conflicts identified prior to bid should be brought out during this meeting.

17. INSURANCE

This S.P. supplements 107.13 – (2009 blue book)

All policies and certificates shall be sent to the Contracting Officer, DDOT 55 M Street SE, 7<sup>th</sup> Floor Washington, DC 20003.

The United States of America shall be named as an additional insured on all such policies. All such policies shall specify that the insured shall have no right of subrogation against the United States for payments of any premiums or deductibles there under and such insurance policies shall be assumed by, be for the account of, and be at the sole risk of the insurer.

The insured shall pay the United States the full value for all damages to the lands or other property of the United States caused by him or by his employees, contractors, or employees of the contractors.

A. **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 shall 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 shall be given thirty (30) days prior written notice via certified mail in the event coverage is substantially changed, canceled or not renewed.

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

3. 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 shall be primary and non-contributory and shall include the District of Columbia as an additional insured.

4. Workers' Compensation Insurance.

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: \$1,000,000.00 per accident for injury; \$1,000,000.00 per employee for disease; and \$ 1,000,000.00 for policy disease limit.

5. Umbrella or Excess Liability Insurance. The Contractor shall provide umbrella or excess liability insurance as follows: \$ 10,000,000.00 per occurrence, with the District added as an additional insured.

- B. DURATION. 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 shall be given thirty (30) days prior written notice via certified mail in the event coverage is substantially changed, canceled or not renewed.
- C. 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.
- D. 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

18. CONTRACTOR'S SUBMITTALS:

This S.P. Supplements 105.02 (B)

Selected catalog cuts, materials certifications, laboratory test reports, and other required submittals will be subject to review and approval by the Engineer. The contractor is encouraged to provide submittals for review as soon as practical after project notice to proceed is issued. Every effort will be made to respond to these submittals with five (5) working days of receipts by the Engineer. The contractor shall be required to submit two (2) copies of all submittals to:

Mr. William McGuirk  
Traffic Signal System Division  
Traffic Services Administration  
District Department of Transportation  
55 M Street, S.E.  
Washington, D.C. 20003

19. CONTRACTORS WORK SCHEDULE:

This SP supplements and modifies Articles 17C of the General Provisions, 105.10 and 105.11.

Work shall be performed in the field at times of the day in accordance with SP 13(A) TRAFFIC FLOW RESTRICTIONS. Work including the fabrication of signal heads for field installation, disposal of removed equipment and administrative matters relating to the conduct of this contract may be performed all the contractor's facility during the times the contractor is working in the field.

Work in the field shall be canceled and/or suspended if already in progress during period of inclement weather featuring precipitation. Electrical work in the field will be prohibited during rain and/or snow due to the potential for electrical shock and/or damage to sensitive solid state controller components. Decisions to terminate field work for a day shall be made the Chief of the D.C. Traffic Signal Construction Branch. The contractor shall factor inclement weather in the overall schedule to ensure compliance with yearly production goals.

Work in the field on Saturdays, Sundays, and holidays is discouraged, but will be entertained with the written request of the contractor to the Engineer fourteen (14) calendar days prior to the day which work is to be performed. The Engineer shall respond to such requests with seven (7) calendar days of the receipt of the request.

The contractor must keep illuminated at least one signal head controlling a specific movement. A signal head may be taken out of service to perform required work for a period of time not to exceed thirty (30) minutes as long as the contractor is actively working on that intersection corner and as long as proper maintenance of traffic practices are followed.

The contractor shall be permitted to perform work at more than one intersection on any particular day. Several crews may work at different intersection simultaneously. These working conditions are subject to the following stipulations:

- All work must be completed by 3:30 p.m. on weekdays at all work site in the field
- Only contractor employees with IMSA Level II Certification and

documented Type 170 Controller expertise are authorized to enter controller cabinets for the purpose of disconnecting field cable at the terminal (if necessary), and replacing Model 200 switch packs in the controller cabinet.

- Only DC DPW technicians scheduled two (2) days in advance are authorized to modify the traffic signal sequence of operation to support the contractors work (if necessary)
- Several crews may work simultaneously at different corners of the same intersection as long as proper maintenance of traffic practices are followed, and as long as only one of the two signal indications for a given approach are disabled at only one time.

The Contractor shall not initiate any field task, which cannot be completed prior to 3:30 p.m., the end of the weekday work day. Furthermore, the contractor shall ensure that the signal operates in compliance with the approved traffic signal sequence of the operation before vacating the intersection.

## 20. EMPLOYEE TRAINING REQUIREMENTS:

The training specified in this SP is in addition to that detailed in 103.04, which is accounted for in Pay Item No. 000 003.

The Traffic Signal System Division will conduct mandatory training for the contractor's technical employees. The contractors shall be required to videotape and audiotape the entire training session. Any new employee hired by the contractor to work on this project will be required to view and understand the training as a prerequisite for participation in this project. The Training will be conducted by the Traffic Signal System Division personnel and feature demonstrations of the accepted method for performing the following tasks:

- Working with the Type 170 controller.
- Properly aligning and tightening vehicular and pedestrian signal heads.
- Disconnecting cable from and removing existing signal heads
- Connecting cable to and installing proposed signal heads.
- Signal head mounting techniques.
- Retrofitting signal heads with LED module inserts.

Training will be conducted on the District of Columbia premises and will be scheduled to occur at a mutually agreeable time and date within 10 working days following contract notice to proceed. Videotape and audiotape costs are to be borne by the contractor. The contractor shall furnish to the District of Columbia written confirmation that employees retained after the training date view the tape training prior to working in this project. One copy of the tape training session shall be provided to the District of Columbia. Videotape shall be in VHS format.

There will be no measure of payment made for training not covered under Pay Item 000.003. The cost of this additional, specified training shall be reflected and

distributed equally among unit price for Pay Item No.9 through 20 inclusive, and no. 23

21. COORDINATION WITH POTOMAC ELECTRIC POWER COMPANY:

Since this contact involves no underground construction and contains no requirement for the contractor to enter an electrical manhole or to coordinate the installation or removal of electrical services to the controller, the contractor shall have no need to develop a contractual relationship with PEPCO. Payment from the contractor to PEPCO will not be required

22. CONTRACTOR'S EMPLOYEES:

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

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

A minimum of one of the contractor's employees must have demonstrated experience in the installation of traffic signal heads. This employee must be at least Level II IMSA Certified, and have experience working in and around the Type 170 microprocessor based solid state traffic signal controller. Proof of certification shall be a requirement for consideration as a responsive bidder. A copy of the employee's Level II IMSA certification shall be submitted with the contractor's bid. The contractor will be required to retain an employee with these minimum credentials during the entire contract. This is the only contractor employee who will be permitted access to the controller cabinet

23. FAILURE TO COMPLETE ON TIME:

This S.P supplements 108.07

When the Contractor fails to perform work as stipulated in the contract, deductions will be made from his monthly requisition as noted below. The Contract Administrator will prepare a list of proposed liquidated damages each month for review by the Contractor. Explanation will be considered by the Contract Administrator for each item before the list is completed. Failure to complete all requirements of the Contract by the end of contract year will result in the delay of the final payment until all such work has been completed. Liquidated damages will be assessed against the contractor in accordance with the following schedule:

- Accessing controller cabinet by unauthorized personnel - \$500.00 per

occurrence

- Utilizing untrained personnel on the project- 100.00 per occurrence
- Failure to comply with Work Zone Safety requirements -\$100.00 per occurrence
- Vacating intersections without displaying approved sequence of operation- \$100.00 per occurrence
- Failure to maintain one operating vehicle signal head per approach -\$100.00 per occurrence
- Observing open signal head door after work completed- \$25.00 per occurrence
- Observing mis-aligned signal head after work completed-\$50.00 per occurrence

The District will notify the contractor in writing of violations resulting in a payment deduction. Payment deductions shall be accumulated throughout each month and subtracted from the contractor's monthly invoice.

#### 24. VALUE ENGINEERING PROPOSALS BY THE CONTRACTOR:

The provisions of 104.03 apply to this contract.

#### 25. PERMITS:

The contractor shall be required to obtain public space and electrical permits prior to the 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 will not be compensated. Likewise, the contractor shall, without expense to the District of Columbia, be responsible for obtaining public space permits. The contractor shall be responsible for becoming familiar with all aspects of obtaining a public space permit in the District of Columbia. All costs associated with this effort shall be incidental to the contract.

The electrical permit, 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.

#### 26. SCHEDULE AND RECORDKEEPING:

The contractor shall maintain an office within the District of Columbia staffed with an adequate number of people and equipped with sufficient office furniture, communications equipment and computer hardware and software to efficiently administer this contract. The contractor shall be required to perform, as a minimum, the following tasks in support of this contract:

- The contract shall use an off the shelf software product such as "Microsoft Project 2000", or an approved equivalent product, to maintain accurate historical records, financial records, inventory records, and other pertinent milestones relating to all aspects of this project. A report shall be transmitted on the first workday of each month to the project manager detailing current monthly and cumulative milestones.

- The contractor shall provide a schedule on the last work day of each week showing which intersections are scheduled to be visited during the next week. This schedule shall be transmitted to the project manager, and shall be provided not less than one hour before the end of the workday.
- The contractor shall provide a daily summary to the project manager of work completed in the field on that day. This listing shall be provided as soon as practical after the end of the work day, so that this information can be made available to other contractors who may need to respond to reported malfunctions prior to the start of the next work day
- Access to the controller cabinet by the IMSA Level II certified employees shall be documented with a separate Daily Work Report delivered to the project manager on the next workday. The employee must use the standard 2-sided 8 ½” x 14” form used by District of Columbia employees. D.C. will supply the contractor with blank forms.
- The contractor shall maintain voice and data communications with the project manager at all times. Telephones, facsimile machine, and email accounts shall be employed. Voice communications shall be maintained at all times between the contractor and field crews. The contractor is not required to purchase communications equipment specifically for this project.
- The District of Columbia is required to provide the Potomac Electric Power Company (PEPCO) with written notification of all lighting changes at signalized intersections in the District of Columbia. These lighting changes are documented in the form of two letters for each intersection, each of which is one 8 ½” x 11” page in length and a standard format. One letter documents equipment removed and the other documents equipment installed. The contractor shall furnish to the project manager two lighting change original letters for each completed intersection on the first work day of each week documenting all lighting changes completed during the previous week. The District of Columbia will provide the contractor with a sample format before work is begun.
- The contractor shall utilize existing electronic mail (e-mail) accounts as the primary medium for transmitting to the District of Columbia project engineer and other identified parties writing data pertinent to this project. E-mail accounts shall also be used to request information or informally communicate. E-mail account numbers shall be shared at the pre-construction meeting.

Costs relating to administrative efforts in support of this contract shall be equitably distributed over Pay Item 9 through 20 inclusive and No. 23. No direct measure or separate payments shall be authorized.

## 27. PROJECT LOCATIONS:

The Appendix contains a listing of all intersections on the Federal-aid National Highway System (NHS). Signalized intersections not on one of these roadways are on the Surface Transportation System (STP) routes. With relatively few exceptions, the

contractor will perform work at all existing signalized intersections and midblock flashers designated STP corridors. Intersections currently or imminently under construction are not included in this contract. The contractor will be given specific guidance throughout the contract by the Engineer with regard to intersections not included. The contractor is expected to become familiar with each corridor before submitting a bid.

It is further noted that work has already been completed at all NHS intersections and on a significant number of STP intersections. Approximately 50% of all signalized intersections in the city have been completed. This contract covers the remaining 50% of the city. The contractor will be provided with a listing of all completed intersections at the pre-construction meeting.

The quantities listed on the pay item schedule represent a reasonable approximation of what the contractor should expect to find in the field when the work is performed. Due to changing field conditions, the District of Columbia cannot guarantee payment for the estimated number of items on the pay item schedule. In all instances, the contractor shall be paid for the exact quantity of work performed at the contract unit price. Precise quantities will be made available to the selected contractor at the pre-construction conference.

28. DEFAULT:

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

- A. Liquidated damages assessed in excess of 15% of total monthly payment for any two consecutive months throughout the life of the contract.
- B. Contractor's performance is deficient and requires completion by others.
- C. Falsification of independent laboratory reports; or
- D. Falsification of performance reports.

29. DISPUTES:

- A. All disputes arising under or relating to this contract shall be resolved as provided herein.
- B. Claims by a Contractor against the District.

Claims, 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 adjustment 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 a 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 the claim;
  - (3) A brief description of the Contractor's effort 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 with 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 issue a decision within ninety (90) calendar days of receipt of the claim. Whenever possible, 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 decision 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 not required and, if made, shall not be binding in any subsequent proceedings;
  - (5) 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;
  - (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 by 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.
- (g) (1) If a Contractor is unable to support any part of his or her claim it is determined that the inability is attributable to a material misrepresentation of 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 costs to the District attributable to the cost of reviewing that part of the Contractor's claim.

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

- (h) 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 as authorized by D.C. Official Code 2-309.04.
- (i) 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 as 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 a contract clause that provides for the relief sought by the claimant.
  - (b) (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 reasons 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 proceeding;
    - (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 by appealing the decision to the Contract Appeals Board.
  - (3) The decision shall be supported by the 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 the penalties or forfeitures prescribed by 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.\
- (c) 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.

- (d) 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.

30. PAY ITEM NO. 1 THROUGH NO. 8 INCLUSIVE AND PAY ITEM NO. 21 AND 22: FURNISH LED MODULE

After receiving Traffic Signal System Division approval of catalog cuts, the contractor shall procure LED modules conforming to the technical specifications contained in the Appendix of this contract. The contractor shall be responsible for safe keeping and storage of the modules upon receipt of the materials from the vendor at the contractor's facility. Payment to the contractor by the city shall be authorized only after the module has been delivered to and remains within the District of Columbia.

MEASURE AND PAYMENT: Each individual LED Module will be measured and paid at the contract unit price.

31. PAY ITEM NO.9: RETROFIT EXISTING SIGNAL HEAD SECTION WITH LED MODULE

The contractor shall remove the incandescent bulb, socket, reflector, lens and supporting hardware from the existing 12 inch vehicular or pedestrian signal section and install the appropriate replacement LED module. This work is performed entirely in the field. The contractor shall make appropriate electrical connections at the terminal block of the signal head to ensure that the replacement LED module operates consistent with the approved traffic signal sequence of operation. In general, the contractor will be expected to perform the following tasks to complete this pay item.

- Disconnect internal wiring at the terminal block of the signal head. Disconnect wire for one section at a time so as to have only one section per signal head inoperable at any one time. Do not disconnect the cable running between the signal head terminal block and the controller cabinet.
- Remove the bulb, socket, reflector, lens and miscellaneous hardware from the inside of the signal head section.
- Insert and affix the appropriate LED module inside the signal head section, being careful to ensure the correct orientation of the LED module within the signal head housing.
- Connect the wire from the LED module to the signal head terminal block as to ensure the proper operation of the traffic signal in accordance with the approved traffic signal sequence of operation.

All of the materials removed from the signal head section are to be discarded by the contractor. In no case will the contractor disable any existing signal section unless the LED replacement insert is on hand at the job site and prepared for immediate installation.

MEASURE AND PAYMENT: Each individual LED module retrofitted into an existing signal head will be measured and paid at the contract unit price. The contractor is advised that a typical signalized intersection featuring eight – 3 Section vehicle signal heads and eight -2 Section pedestrian signal heads has forty (40) signal head sections to be retrofitted.

### 32. PAY ITEM NO.10: REMOVE EXISTING SIGNAL HEAD

The contractor shall be required to remove signal heads conforming to one of the following characteristics:

- 1 Section pedestrian signal heads featuring the DON'T WALK and the WALK message in the same section.
- 3, 4, or 5 Section vehicle signal heads featuring one or more sections with 8 inch diameter lenses
- 3, 4, or 5 Section vehicle signal heads with all lenses 12", but the signal head is determined to be damaged beyond repair and incapable of accepting an LED Module. Potentially damaged signal heads will be identified by the contractor and verified by the District of Columbia inspector before removal and subsequent replacement is undertaken.
- 3, 4 or 5 Section vehicle signal heads with all lenses 12" featuring one or more indications for a left turn or right turn movement considered redundant to the primary left turn signal so as to achieve compliance with the Manual on Uniform Traffic Control Devices by displaying only one indication for the non-primary movement. The District will identify these for the contractor prior to issuance of the Notice to Proceed.
- 1 Section yellow beacons used for flashing warning signals with 8" lenses.
- 1 Section yellow beacons used for flashing warning devices with 12" lenses, damaged beyond repair and incapable of accepting an LED Module or identified for replacement

The contractor shall disconnect internal wiring at the terminal block of the signal head after identifying the function of each conductor to ease subsequent reinstallation. The end of each conductor shall be taped to avoid accidental contact with a metallic surface during the removal and reinstallation processes. On pole mounted signal heads, the contractor shall cut the banding material or disassemble the mounting brackets to detach the signal head, upper and lower mounting brackets, universal pole plate and banding material/brackets from the pole. On mast arm mounted signal heads, the contractor shall cut the banding material and detach the bracket, banding material, and signal head from the mast arm. The contractor shall route the existing cable carefully through and free of the signal head assembly. At the conclusion of the removal process, only the cable shall remain protruding through the hole in the pole or mast arm.

For the purpose of this pay item, no distinction shall be made by number of signal sections in the signal head, mounting arrangement or type of mount. All materials removed from the pole or mast arm shall be discarded by the contractor EXCEPT

the red incandescent bulbs from the 1 Section pedestrian signal heads. These red bulbs are needed elsewhere. They are to be carefully removed from the pedestrian signal head and delivered to the Traffic Signal Maintenance Branch at DDOT.

Under no circumstances will contractor perform any work on optically programmable vehicular or pedestrian signal heads.

MEASURE AND PAYMENT: The contractor shall furnish all necessary labor, material and equipment necessary to remove and dispose signal heads, as described herein. Each individual signal head removed will be measured and paid at the contract unit price.

**33. PAY ITEM NO.11 THROUGH NO.15 INCLUSIVE: FURNISH AND INSTALL VEHICULAR OR PEDESTRIAN TRAFFIC SIGNAL HEAD ON ANY POLE**

In general, the contractor shall replace vehicular and pedestrian signal heads removed under pay item No.10. No more than 30 minutes shall transpire between the time a signal head is removed from service and the replacement signal head is installed and operational. The work to be performed under this pay item is as follows:

- The contractor shall prepare the signal head for attachment to the pole prior to arriving in the field at the intersection. The contractor shall construct each signal head as described in the traffic signal sequence of operation. The appropriate LED modules shall be inserted and affixed into the housing and wired to the signal head terminal block, in accordance with manufacturer's instructions. Tunnel visors may be attached at this time or after the signal head is erected and placed into service.
- Pole mounted one, two, three, four and five section signal heads shall feature sections mounted vertically one above the other. Connections between signal head sections shall be watertight and contain an opening through which cable can pass.
- Pole mounted signal heads shall be outfitted with upper and lower mounting brackets. This assembly shall feature serrated locking washers at the signal head to prevent misalignment. This assembly shall be attached to the signal head and to the pole such that a watertight barrier results. This shall be accomplished through the use of washers and/or sealing compound at the pole. The assembly shall consist of 1 ½ inch diameter steel tubes (nipples) threaded to fit into the pole plate and into the 90 degree ell leading to the signal head. The other end of the assembly shall be affixed to a universal pole plate into which the 1 ½ inch diameter steel nipple can be screwed. The universal pole plate may be constructed from cast aluminum and shall be constructed to accept 1 inch wide stainless steel banding strapping above and below the nipple where the plate sits next to the pole. The 1 ½ inch steel nipple shall be of sufficient length and configuration to match the hardware arrangement of the signal display being replaced and to situate the signal head equidistant from the pole as the signal display being replaced.

- The existing field cable protruding through the hole in the pole is to be carefully routed through the mounting hardware into the signal head and connected to the proper terminals in the terminal block of the signal head. The contractor will have to remove protective tape from the conductor after the cable has been positioned near the terminal block. The contractor shall make the proper electrical connections of the field cable to the terminal block and ascertain that the connections are secure and consistent with the approved traffic signal sequence of operation. The field cable shall be fitted with terminal lugs for attachment to the terminal block.
- The contractor shall mount the signal head assembly to the pole after carefully aligning the universal pole plate to the pole without damaging or crimping field cable. Each new signal head will be mounted so that the bottom of the signal head is at a height above grade equal to the signal head being replaced. The universal pole plate shall be affixed to the pole utilizing 1 inch wide stainless steel banding strapping at two points on each pole plate, one above and one below where the nipple screws into the pole plate. The mounting shall be accomplished with banding tools specifically intended for securing banding strapping and with standard tools.
- The contractor shall ensure a secure fit of the assembly and confirm that the signal head operates in compliance with the approved traffic signal sequence of operations

MEASURE AND PAYMENT: Each individual traffic signal head installed will be paid at the contract unit price. The price will include the signal head housing, the upper and lower mounting brackets, universal pole plate, all miscellaneous hardware including terminal lugs, tunnel visors, stainless steel banding materials, and all labor, equipment and materials. The price shall also include insertion, affixing and wiring of the LED module into the signal head following the procedure outlined in Special Provision No.28. The cost of the LED module is not included in this pay item, as it was previously covered in Special Provision No.27.

**34. PAY ITEM NO. 16 THROUGH NO. 18: FURNISH AND INSTALL VEHICULAR TRAFFIC SIGNAL HEAD ON ANY MAST ARM**

In general, the contractor shall replace vehicular signal heads removed under pay item No. 10. No more than 30 minutes shall transpire between the time a signal head is removed from service and the replacement signal head is installed and operational. The work to be performed under this pay item is as follows:

- The contractor shall prepare the signal head for attachment to the mast arm prior to arriving in the field at the intersection. The contractor shall construct each signal head as described in the plans. The appropriate LED modules shall be inserted and affixed into the housing and wired to the signal head terminal block, in accordance with manufacturers' instructions; Tunnel visors may be attached at this time or after the signal head is erected and placed into service.
- Mast arm mounted one, three and four section traffic signal head shall feature

sections mounted one above the other. Mast arm mounted five section traffic signal heads shall feature two adjacent columns of two sections each mounted one above the other and one section mounted directly above the other two so that the total assembly is three sections tall and two sections wide and so that the center of the top section coincides with the line vertically dividing the two columns.

- Mast arm mounted signal heads shall feature a back plate affixed to the signal head, Back plates are to be procured in accordance with the technical specifications contained in Appendix A of this contract. The back plate shall be secured to the signal head utilizing hardware shown in the technical specifications and in accordance with the manufacturers' instructions.
- Mast arm mounted signal heads shall be mounted to the mast arm at the point where the field cable exits the mast arm with a standard bracket assembly procured in accordance with the technical specifications contained in the Appendix of the contract.
- All mounting hardware shall be affixed to the signal head to form a watertight joint in compliance with the manufacturers' installation instructions.
- The existing field cable protruding through the hole in the mast arm is to be carefully routed through the mounting hardware into the signal head completely within the assembly and connected to the proper terminal in the terminal block of the signal head. The contractor will have to remove protective tape from the conductors after the cable has been positioned near the terminal block. The field cable shall be fitted with terminal lugs for attachment to the terminal block. The contractor shall make proper electrical connections of the field cable to the terminal block and ascertain that the connections are secure and consistent with the approved traffic signal sequence of operation.
- The contractor shall mount the signal head assembly to the mast arm after carefully aligning the mast arm mount signal bracket to the pole without damaging or crimping field cable. Each new signal head shall be mounted so that the bottom of the signal head is a height above grade equivalent to the signal head being replaced. The contractor shall tighten the stainless steel bands on the signal brackets to the mast arm to ensure a tight, secure fit utilizing specific banding tools and/or standard tools.
- The contractor shall make adjustments after the assembly is affixed to the mast arm to ensure proper adjustment of the signal head.
- The contractor shall ensure a secure fit of the assembly and confirm that the signal head operates in compliance with the approved traffic signal sequence of operation.

MEASURE AND PAYMENT: Each individual traffic signal head installed will be paid at the contract unit price. The price will include the signal head housing, the complete mast arm mount signal bracket, the back plate, tunnel visor, terminal lugs, stainless steel banding materials, all miscellaneous hardware and all labor, equipment and materials. The price shall also include insertion, affixing and wiring of the LED module into the signal head following the procedure outlined in Special Provision No. 29. The cost of the LED module is not included in this pay item, as it was previously covered Special Provision No. 27.

35. PAY ITEM NO. 19 AND 20: FURNISH AND INSTALL TUNNEL VISOR

The contractor shall procure tunnel visors for both 12" vehicular traffic signal sections and 12" pedestrian traffic signal sections compliant with the specifications contained in Appendix A. Visors are to be installed only on vehicular and pedestrian signal heads scheduled for LED module retrofit in the field when it has been identified either in the plans or in the field that the visor is missing from an existing signal section. New vehicular or pedestrian signal heads installed under pay item 11 through 18 are to be installed with new visors intact and will not be considered for visor replacement under this pay item.

The contractor shall affix new visors to signal heads using standard tools and stainless steel mounting screws if required, as prescribed in the signal head manufacturers' instructions.

MEASURE AND PAYMENT: Each individual signal head visor will be measured and paid at the contract unit price. The price will include the signal head visor and all necessary labor, equipment, and materials for installation.

36. PAY ITEM NO. 23: FURNISH AND INSTALL MODEL 200 SWITCH PACKS

The contractor shall procure Model 200 Switch Packs compliant with the specifications Contained in Appendix A.

The contractor shall remove all existing switch packs connected to each vehicular and Pedestrian Light Emitting Diode (LED) module and replace each with a new Model 200 Switch pack. The contractor shall verify the proper operation of each LED module controlled by the new switch packs before leaving the intersection. Each LED module shall display a consistent operating pattern without flicker, distortion, degradation or otherwise faulty operation when controlled by a new switch pack. The old switch packs removed from the controller by the contractor shall be delivered to the Traffic Signal Maintenance Branch at DDOT.

MEASURE AND PAYMENT: Each individual switch pack will be measured and paid at the contract unit price. The price shall include the Model 200 switch pack, the cost to dispose the old switch pack, and all necessary labor, equipment and materials for installation.

37. PROTESTS

Any actual or prospective bidder, offeror or contractor who is aggrieved in connection with the solicitation or award of a contract, must file with the DC Contract Appeals Board (Board) a protest no later than ten (10) business days after the basis of 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 the time set 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, 441 4<sup>th</sup> Street, N.W., Suite 350N, Washington, D.C. 20001. The aggrieved person shall also mail a copy of the protest to the Contracting Officer for the solicitation.

38. CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR):

The term COTR is synonymous with the term District's Engineer. The District's Engineer for this contract is:

Name: William McGuirk  
Title: Traffic Signal System Division  
Agency: District Department of Transportation  
Traffic Services Administration  
Address: 55 M Street SE, 6<sup>TH</sup> Floor  
Washington, DC 20003  
Telephone: 202-671-1493

39. 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 is the Agency Chief Contracting Officer, Department of Transportation, 55 M Street SE, 7<sup>TH</sup> Floor, Washington, DC 20003, telephone number (202) 671-2270.

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 Officer's Technical Representative (COTR): The COTR is Mr. William McGuirk, 55 M Street SE, 6<sup>TH</sup> Floor, Washington, DC 20003; Phone number (202) 671-1493.

The COTR 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 COTR will act as the contracting officer's 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 COTR fully informed of any technical or contractual difficulties encountered during the performance period and advising the ACCO 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 deliverables 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, and equipment) and invoices/vouchers.

It is understood and agreed, in particular, that the COTR 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 ACCO 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 of 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 Department of Transportation.

Invoices shall be submitted in duplicate to the District Department of Transportation, Office of the Chief Financial Officer, 2000 14<sup>th</sup> Street NW 6<sup>th</sup> Floor Washington, DC 20009

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.

### 40. TWO-SECTION PEDESTRIAN SIGNAL HEADS

The contractor is alerted to the fact that the scope of work features countdown pedestrian signals in addition to the standard conventional pedestrian signals featuring the Portland orange raised hand LED module in the top section and the lunar white walking person LED module in the bottom section. The countdown pedestrian signal-heads shall be configured with the overlay lunar white walking person and Portland orange raised hand LED module in the top section and the lunar white countdown LED module in the bottom section. The techniques to be employed for installing all pedestrian signal LED modules are covered in Special Provision Number 28. The same level of effort is required for both conventional pedestrian signal head displays and for countdown pedestrian signal head displays.

This contract will call for the installation of countdown pedestrian signals at

approximately 100 to 125 signalized intersections. The remainder of the intersections will be retrofitted with conventional pedestrian signal displays. The contractor will be notified after contract award which intersections shall be outfitted with countdown pedestrian signal displays.

#### 41. SUBCONTRACTING

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

Attention:  
Contracting Officer Transportation  
Office of the Agency Chief Contracting Officer  
55 M Street SE, 7<sup>TH</sup> Floor  
Washington, DC 20003

Copies of these forms are available upon request.

Copies of subcontracts shall be made available for review at any time by representatives of the District Department Transportation and Federal Highway Administration.

#### 42. DDOT TITLE VI ASSURANCE

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

##### (1) COMPLIANCE WITH REGULATIONS

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

##### (2) NON-DISCRIMINATION

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

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

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

### (4) INFORMATION AND REPORTS

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

### (5) SANCTIONS FOR NON-COMPLIANCE

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

- withholding of payments to the contractor under the contract until the contractor complies, and/or
- cancellation, termination, or suspension of the contract, in whole or in part.

### (6) INCORPORATION OF PROVISIONS

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

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

43. DBE ASSURANCE

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

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## SUBCONTRACTOR APPROVAL REQUEST FORM

**SUBCONTRACTOR APPROVAL REQUEST**

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

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**LIGHT EMITTING DIODE (LED) TRAFFIC SIGNAL  
MODULES**

## **LIGHT EMITTING DIODE (LED) TRAFFIC SIGNAL MODULES TECHNICAL SPECIFICATIONS**

1. The purpose of this is to describe the minimum acceptable design and operating requirements for 12 inch (300 mm) Light Emitting Diode (LED) vehicle signal modules. The specific items covered under this specification include the red ball, the yellow ball, the green ball, the red arrow, the yellow arrow, and the green arrow.

### **2. GENERAL DESCRIPTION**

- 2.1 This specification covers "red ball", "yellow ball", "green ball", "red arrow", "yellow arrow" and "green arrow" LED modules to be used in place of the incandescent lamp, reflector, socket, gasket and lens assembly of the vehicle signal sections. Each LED module shall consist of an assembly that utilizes LEDs as the light source in lieu of an incandescent lamp for use in vehicle signal sections.
- 2.2 All vehicle signal LED modules shall be engineered to fit into all ITE compliant conventional vehicle signal housings. They shall fit in the conventional polycarbonate vehicle signal head housing as used in the District of Columbia, and as described in detail in this technical specification.
- 2.3 The LEDs utilized in the modules shall be AllnGap technology for red and yellow indications or InGaN for green indications. The LED's shall be the ultra bright type rated for 100,000 hours of continuous operation from  $-40^{\circ}$  C to  $+74^{\circ}$  C.
- 2.4 Each LED module shall be rated for a minimum useful life of 48 months. All LED modules shall meet all parameters of this specification during this period.
- 2.5 Each individual LED module shall be wired such that a catastrophic loss or the failure of one LED will result in the loss of not more than 5% of the signal module light output.
- 2.6 Each "red ball" and "green ball" module shall be in full compliance of all provisions of the July, 1998 Institute of Transportation Engineers Interim LED Purchase Specification, Vehicle Traffic Control Signal Heads, Part 2.

### **3. ELECTRICAL REQUIREMENTS**

- 3.1 Power Consumption
  - 3.1.1 The maximum power consumption requirements measured in watts for each module are as follows:

MODULE	25°C	74°C
Red Ball	11.0 W	17.0 W
Yellow Ball	22.0 W	25.0 W
Green Ball	15.0 W	15.0 W
Red Arrow	9.0 W	12.0 W
Yellow Arrow	10.0 W	12.0 W
Green Arrow	11.0 W	11.0 W

3.1.2 All LED Modules except the yellow ball shall be U.S. EPA Energy Star compliant at 25°C. Power consumption of these LED Modules shall not exceed that maximum allowed by the EPA.

### 3.2 Operating Voltage

- 32.1 Each module shall operate from a 60HZ  $\pm$  3HZ AC line over a voltage ranging from 95 volts to 135 volts. Fluctuations of line voltage shall have no visible effect upon the luminous intensity of the indications.
- 3.2.2 The operating voltage of the modules shall be 120 Volts AC. All operating parameters shall be measured at this voltage.
- 3.2.3 LED circuitry shall prevent perceptible flicker to the unaided eye over the 95 to 135 voltage range.
- 3.3 The LED module shall have a power factor of 0.90 or greater at a nominal rated voltage at 25° C after 60 minutes of operation.
- 3.4 Total harmonic distortion (current and voltage)-induced into an AC power line by an LED signal shall not exceed 20 percent at the rated voltage at 25°C.
- 3.5. The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.6 of the NEMA Standard TS-2, dated 1992.
- 3.6 Each LED module and associated on-board circuitry shall be in compliance with Federal Communications Commission (FCC) noise regulations and must meet FCC Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise.
- 3.7 All wiring and terminal blocks must meet the requirements of Section 13.02 of the ITE Publication: Equipment and Material Standards, Chapter 2, Vehicle Traffic Control Signal Heads.
- 3.8 Each LED module shall be operationally compatible with controller assemblies and peripheral equipment including solid state load switches; flashers, and conflict monitors-currently used in the District of Columbia. Current controller specifications are available for review at the specific request of the contractor or vendor.

- 3.8.1 When a current of 20 mA AC or less is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.
- 3.9 Each LED module shall feature control circuitry to prevent current flow through the LED module in the off state to avoid any false indication as may be perceived by the human eye during the daylight and evening hours.
- 3.10 Two secured, color-coded, 600 V, 16 AWG minimum jacketed wires conforming to the National Electrical Code, rated for service at + 105° C, are to be provided for electrical connections for each LED signal module. Section 5.5 of these specifications includes more detail relevant to these conductors.
- 3.11 Transient voltage suppression rated at 1500 watts for 1 millisecond and fusing with a maximum rating of 2 amps shall be provided to minimize the effect and repair cost of an extreme over-voltage situation of other failure mode.

#### **4. ENVIRONMENTAL REQUIREMENTS**

- 4.1 Each LED module shall be rated for use in operating temperatures in the range of -40° C (-40° F) to +74° (+165° F). Each LED module shall meet all specifications throughout this temperature range.
- 4.2 Each LED module shall be protected against dust and moisture intrusion in conformance with NEMA Moisture Resistant Standard 250-1991 for Type 4 enclosures to protect all internal components.

#### **5. CONSTRUCTION**

- 5.1 Each LED module shall be a single, self-contained sealed unit, not requiring on-site assembly for installation into an existing traffic signal housing.
- 5.2 The power supply for the LED module shall be integral to the unit.
- 5.3 The circuit board and the power supply shall be contained inside the module.
- 5.4 Each LED module shall incorporate a printed circuit board containing all required LED's and circuit components. The LED's shall be mounted and soldered to the printed circuit board.
- 5.5 Each LED module shall feature two 39 inch long 20 AWG wire leads with strain relief and spade terminals for connection to the terminal block of the signal head. One of the conductors shall contain white insulation to signify neutral. The color of the other conductor shall be different and shall be used to differentiate between the red ball, yellow ball, 'green ball, red arrow, yellow arrow and green arrow LED module. Conductor colors shall be unique and different for those used for pedestrian signal indications also.
- 5.6 Each LED module shall feature a rigid housing for protection in shipping, handling, and installation, and a one-piece neoprene gasket. Screw-in type products are expressly prohibited for LED modules.
- 5.7 The assembly and manufacturing process for the LED signal assembly shall be designed to ensure that all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

- 5.8 Each LED module shall be watertight when properly installed in a traffic signal housing. Each LED module shall utilize the same mounting hardware used to secure the incandescent lens and gasket assembly, and shall only require a screwdriver or a standard installation tool to complete the mounting.
- 5.9 Each LED module shall weigh less than 5 pounds.
- 5.10 Each LED module shall be designed to be installed in the doorframe of a standard traffic signal housing. Each LED module shall be capable of being sealed in the doorframe with a one piece EPDM (ethylene, propylene rubber) gasket.
- 5.11 Each LED module shall be weatherproof after installation and connection.

## 6. MATERIALS

- 6.1 Materials used for the lens and signal module shall conform to the appropriate ASTM specifications for the materials.
- 6.2 Enclosures containing either the power supply or electronic components of the signal module shall be made of UL94VO flame retardant materials. The module lens does not need to conform with this requirement.
- 6.3 The lens of the LED module shall be integral to the unit, shall be convex with a smooth outer surface and shall be made ultraviolet stabilized plastic material.
- 6.4 Each LED module lens shall be capable of withstanding ultraviolet (direct sunlight) exposure for a minimum period of 5 years without exhibiting evidence of deterioration.
- 6.5 A surface coating or chemical surface treatment shall be applied to each outer polymeric lens to provide front surface abrasion resistance.
- 6.6 Each LED module shall incorporate an inner Fresnel lens sealed to the lamp housing to collimate the light emitted by the LED engine. The outer lens shall focus the collimated light to meet ITE intensity and distribution standards,
- 6.7 Each LED module shall almost perfectly approximate to the motorist the appearance of a 12 inch standard incandescent signal. The surface of the LED module shall appear to the motorist to be nearly totally uniform in illumination, and have a wide viewing angle making it suitable for installation on wide boulevards.
- 6.8 The external lens surface for all LED modules shall be smooth with no raised surfaces so as to minimize the collection of dirt, debris, and other particulate contaminants, which may impact luminous intensity, and to facilitate periodic cleaning. External lens facets are prohibited.
- 6.9 The lens for the red ball and the red arrow shall be tinted red or may use transparent film materials with similar characteristics to enhance on/off contrasts.
- 6.10 The lens for the yellow ball and the yellow arrow shall be tinted yellow or may use transparent film materials with similar characteristics to enhance

- on/off contrasts.
- 6.11 The lens for the green ball and the green arrow shall be clear. No tinting or transparent film materials shall be used.
  - 6.12 The use of tinting or other materials to enhance on/off contrasts shall not affect chromaticity and shall be uniform across the face of the lens.

## **7. MODULE IDENTIFICATION**

- 7.1 Each LED Module shall have the manufacturers name, trademark, model number, serial number, date of manufacture (month and year) and lot number as identification permanently marked on the back of the module. This identification is required, and is in addition to any other identification that may be required in contract special provisions by the District of Columbia.
- 7.2 Rated voltage and rated power in Watts and Volt-Amperes shall also be permanently marked on the back of each LED module.
- 7.3 Each LED module shall have prominent and permanent markings for correct indexing and orientation within a signal head housing. The markings shall consist of an up arrow, or the word "UP" or "TOP" to ensure that the LED module is inserted into the signal head housing with the correct orientation.
- 7.4 As detailed in Section 5.5 of this specification, conductors connecting the LED module to the signal head housing terminal block shall be color coded to differentiate between the red ball, red arrow, yellow ball, yellow arrow, green ball, and green arrow LED module.
- 7.5 Each LED module shall have a symbol of the type of module (circular ball or arrow) in the color of the module. The symbol shall be one inch in diameter, and the color shall be written in one half inch letters next to the symbol

## **8. PHOTOMETRIC REQUIREMENTS**

- 8.1 The minimum initial and maintained minimum intensities for red ball, yellow ball, and green ball LED modules measured in candela (cd) at 25° C shall be as follows:

Angle (v, h)	MINIMUM INITIAL			MAINTAINED MINIMUM		
	INTENSITIES (cd)			INTENSITIES (cd)		
	Red	Yellow	Green	Red	Yellow	Green
2.5 ± 2.5	399	798	798	339	678	678
2.5 ± 7.5	295	589	589	251	501	501
2.5 ± 12.5	166	333	333	141	283	283
2.5 ± 17.5	90	181	181	77	154	154
7.5 ± 2.5	266	532	532	226	452	452
7.5 ± 7.5	238	475	475	202	404	404
7.5 ± 12.5	171	342	342	145	291	291
7.5 ± 17.5	105	209	209	89	178	178
7.5 ± 22.5	45	90	90	38	77	77
7.5 ± 27.5	19	38	38	16	32	32
12.5 ± 2.5	59	119	119	50	101	101
12.5 ± 7.5	57	114	114	48	97	97
12.5 ± 12.5	52	105	105	44	89	89
12.5 ± 17.5	40	81	81	34	69	69
12.5 ± 22.5	26	52	52	22	44	44
12.5 ± 27.5	19	38	38	16	32	32
17.5 ± 2.5	26	52	52	22	44	44
17.5 ± 7.5	26	52	52	22	44	44
17.5 ± 12.5	26	52	52	22	44	44
17.5 ± 17.5	26	52	52	22	44	44
17.5 ± 22.5	24	48	48	20	41	41
17.5 ± 27.5	19	38	38	16	32	32

8.2 The minimum initial and minimum maintained intensities for red arrow, yellow arrow, and green arrow LED modules measured in candelas per square meter (cd/m<sup>2</sup>) shall be as follows:

MODULE	MINIMUM INITIAL INTENSITIES	MINIMUM MAINTAINED INTENSITIES
Red Arrow	5,500	5,500
Yellow Arrow	11,000	11,000
Green Arrow	11,000	11,000

- 8.3 The red ball, red arrow, green ball, and green arrow LED module shall meet or exceed the illuminations values as shown in Section 8.1 and 8.2 throughout the useful life based upon normal use in traffic signal operations over the operating temperature.
- 8.4 The yellow ball and yellow arrow LED module shall meet or exceed the illumination values as shown in Section 8.1 and 8.2 throughout the useful life based on normal use in a traffic signal operations at 25°C.
- 8.4.1 Within 5 minutes of turn-on, the initial luminous intensity of yellow ball LED modules shall meet that of ITE compliant green ball LED modules at 25°C, 120 Volts A.C. Yellow ball LED modules shall be compliant with CALTRANS specifications. CALTRANS laboratory compliance certificates shall be furnished prior to product acceptance.
- 8.5 The intensity of red ball and green ball LED modules shall not vary by more than 10% over the allowable voltage range.
- 8.6 Red ball and green ball LED Modules shall, meet the July, 1998 ITE VTCSH Part II standards and measurements criteria for LED modules. Test data to verify compliance of these LED modules with this standard, including all tests listed in Section 6.4 of this standard, shall be provided from either:

Lighting Services  
7630 East Evan Road  
Scottsdale, Arizona 85260

-or-

ETL Testing Laboratories  
3933 U.S. Route 11  
Cortland, New York 13045-0950

- 8.6.1 In addition, red ball and green ball LED modules shall be compliant with Caltrans specifications. Caltrans laboratory compliance certificates shall be furnished prior to product acceptance.
- 8.7 Red ball, red arrow, yellow ball and yellow arrow LED modules shall utilize AlInGaP technology exclusively, either AS (Absorbing Substrate) or TS (Transparent Substrate), and shall not exhibit degradation of more than 30% of the initial light intensity following accelerated life testing (operating at 85 Degrees C and 85% humidity for 1000 hours). AlGaAs technology shall be not be acceptable.
- 8.8 Green ball and green arrow LED modules shall utilize Indium gallium nitride (InGaN) technology. Green ball and green arrow LED modules shall not be illuminated when the applied voltage is less than or equal to 35 volts A.C. Illumination of green ball and green arrow LED modules shall be in compliance with the July, 1998 ITE VTCSH Part II when the applied voltage is between 80 and 135 Volts A.C.
- 8.9 The measured chromatically coordinates of the LED modules shall conform to the following chromatically requirements.

RED:	Y:	not greater than 0.308 or less than 0.998-x
YELLOW:	Y:	not less than 0.411, not less than 0.995 - x, not less than 0.452
GREEN:	Y:	<i>not less than 0.506-0.519 x, nor less than</i> 0.150 + 1.068x, not more than 0.730- x 8.9.1

- 8.9.1 Chromaticity requirements shall pertain to both ball and arrow LED modules.
- 8.9.2 Chromaticity requirements shall be satisfied throughout the useful life of the LED modules over the operating temperature range.
- 8.10 Red arrow, yellow arrow, and green arrow LED modules shall contain not less than two (2) rows of LEDs forming the shape of the arrow.
- 8.10.1 Each LED arrow module shall meet the specifications stated in Section 9.01 of the ITE Publication Equipment and Materials Standards, Chapter 2 (Vehicle traffic Control Signal Heads) for arrow indications
- 8.10.2 LEDs shall be spread and arranged evenly across the illuminated portion of the arrow area.

## 9. QUALITY ASSURANCE

- 9.1 The modules shall be manufactured in accordance with a manufacturer quality assurance (QA) program. The QA program shall include two types of quality assurance: (1) design a quality assurance and (2) production quality assurance. The production quality assurance shall include statistically controlled routine tests to ensure minimum performance levels of the modules built to meet this specification, and a documented process of how problems are to be resolved.
- 9.2 QA process and test results documentation shall be kept on file for a minimum period of seven years.
- 9.3 LED signal module designs not satisfying design qualification testing and the production quality assurance testing performance requirements described below shall not be labeled, advertised, or sold as conforming to this specification.
- 9.4 Design Qualification Testing
  - 9.4.1 Design Qualification Testing shall be performed by the manufacturer or an independent testing lab hired by the manufacturer on new LED module designs, and when a major design change has been implemented on an existing design.
  - 9.4.2 A major design change is defined as a design change (electrical or physical) which changes any of the performance characteristic of the module, results in a different circuit configuration of the power supply, or changes the layout of other individual LED's in the module.
  - 9.4.3 A quantity of two units for each design shall be submitted for Design Qualification Testing.
    - 9.4.3.1 Test units shall be submitted to the District of Columbia after the manufacturer testing is complete.
    - 9.4.3.2 Manufacturer's testing data shall be submitted with test units for District of

Columbia verification of Design Qualification Testing data.

#### 9.4.4 Burn In

- 9.4.4.1 The sample modules shall be energized for a minimum of 24 hours, at 100 percent on-timed duty cycle, at a temperature of +74°C (+165°F) before performing any design qualification testing.
- 9.4.4.2 Any failure of the module, which renders the unit non-compliant with the specification after burn-in, shall be cause for rejection.

9.4.5 For Design Qualification Testing, all specifications will be measured including, but not limited to:

- 9.4.5.1 Rated Initial Luminous Intensity: Measured over the operating temperature range.
- 9.4.5.2 Chromaticity (Color): Measured over the operating temperature range.
- 9.4.5.3 Electrical: All specified parameters shall be measured and used for quality comparison of production quality assurance on production modules (rated power, etc.).
- 9.4.5.4 Equipment Compatibility  
Modules shall be tested for compatibility with the controller unit, conflict monitor, and load switch. Each signal modules shall be connected to the output of a standard load switch connected to an AC voltage supply between the values of 95 and 135 VAC with the input to the load switch in the "off" position. The AC voltage developed across each LED signal module so connected shall not exceed 10 Vrms as the input AC voltage is varied form 95 Vrms to 135 Vrms.
- 9.4.5.5 Mechanical vibration testing shall be as per MIL-STD-833, Test Method 2007, using 3 four minute cycles along each x, y, and z axis, at a force of 2.5 Gs, with a frequency sweep from 2 HZ to 120 HZ. The loosening of the lens, of any internal components, or other physical damage shall be cause for rejection.
- 9.4.5.6 Temperature cycling-shall-be performed as-per MIL-STD-833, Test method 1010. The temperature range shall be per "Environmental Requirements". A minimum of 20 cycles shall be performed with a 30 minute transfer time between temperature extremes and a 30 minute dwell time at each-temperature. Module(s) being tested shall be energized and functioning throughout the duration of the test. Failure of a module to function properly or any evidence of cracking of the module lens or housing after temperature cycling shall be cause for rejection.
- 9.4.5.7 Moisture resistance testing shall be performed on all modules mounted in a standard polycarbonate vehicle signal head housing as specified for use in the District of Columbia per NEMA Standard 250-1991 for Type 4 enclosures. Any evidence of internal moisture after testing shall be cause for rejection.

#### 9.5 Production Quality Control Testing

- 9.5.1 The following Production Quality Assurance tests shall be performed on' each new module prior to shipment. Failure to meet requirements of any of

- these tests shall be cause for rejection. Test results shall be retained by the manufacturer for seven years (except for yellow LED modules).
- 9.5.2 Burn-in period shall consist of each signal module being energized at a rated voltage for a 30 minute stabilization period before the measurement is made.
- 9.5.3 Each module shall be tested for rated initial intensity after burn-in.
- 9.5.3.1 A single point measurement, with a correlation to the intensity requirements of Section 1.04 of the VTCSH for circular modules, may be used: .
- 9.5.3.2 The ambient temperature for this measurement shall be +25<sup>0</sup>C (+77<sup>0</sup>F)
- 9.5.3.3 Each LED Module failing to meet minimum luminous intensity requirements specified in Section 8.1 of these specifications shall be cause for rejection.
- 9.5.4 Each module shall be tested for required power factor after bum-in.
- 9.5.5 Each module shall be measured for current flow in amperes after burn-in. The measured current values shall be compared against rated values resulting from design qualification measurements under "Design Qualification Testing". The current flow shall not exceed the rated value.
- 9.5.6 Each module shall be visually inspected for any exterior physical damage or assembly anomalies. Careful attention shall be paid to the surface of the lens to ensure there are no scratches (abrasions), cracks, ships, discoloration, or other defects. Any such defect shall be cause for rejection.
- 9.6 The manufacturer shall be required to undertake Design Qualification and Production Quality Control testing as specified in Section 9.4 and 9.5 of these specifications and report all results to the District of Columbia through the contractor. Procurement and installation of LED modules prior to the receipt and acceptance of test results by the District of Columbia is done at the contractors risk.

## 10. WARRANTY

- 10.1 The manufacturer shall provide a written warranty against defects in materials and workmanship for a minimum period of 60 months.
- 10.2 The warranty period shall begin on the date the LED module is energized and placed into service at the intersection, or ninety (90) days after delivery of the module to the District of Columbia, whichever occurs first.
- 10.3 Replacement LED modules shall be provided on a one for one basis promptly after receipt of LED modules that have failed. Replacement shall occur at no cost to the District of Columbia prior to random sample testing.
- 10.4 All warranty documentation shall be submitted to the District of Columbia prior to random sample testing.
- 10.5 Red ball and green ball LED modules shall be warranted to be in compliance with the July, 1998 TTE VTCSH, Part II specifications for luminous intensity for a period of 5 years, consistent with the provisions of Section 10.2.

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**TECHNICAL SPECIFICATIONS FOR LIGHT  
EMITTING MODE (LED) PEDESTRIAN SIGNAL  
MODULES**

**TECHNICAL SPECIFICATIONS FOR  
LIGHT EMITTING DIODE (LED) PEDESTRIAN SIGNAL MODULES**

1. The purpose of this specification is to describe the minimum acceptable design and operating requirements for 12-inch (300-mm) Light Emitting Diode (LED) pedestrian signal modules. The specific items included in this specification include the "RAISED HAND" and the "WALKING PERSON" in separate modules. The "RAISED HAND" and the "WALKING PERSON" shall not be combined into a single module.

**2. GENERAL DESCRIPTION**

- 2.1 This specification covers LED "RAISED HAND" and the "WALKING PERSON" modules to be used in place of the incandescent lamp, reflector socket, gasket and lens assembly of the pedestrian signal section. Each LED module shall consist of an assembly that utilizes LEDs as the light source in lieu of an incandescent lamp for use in pedestrian signal sections.
- 2.2 Pedestrian LED modules shall be engineered to fit in all ITE-compliant conventional pedestrian signal housings. They shall fit in the conventional polycarbonate pedestrian signal head housing, as used in the District of Columbia, and as described in detail in an accompanying technical specification.
- 2.3 Each LED Module shall utilize appropriate technology to achieve the required color and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40°C to +74°C.
- 2.4 Each LED module shall be rated for a minimum useful life of 48 months. All modules shall meet all parameters of this specification during this period.
- 2.5 Each individual LED module shall be wired such that a catastrophic loss or failure of one LED will result in the loss of not more than 5 percent of the signal module light output.

**3. ELECTRICAL REQUIREMENTS**

3.1 Power Consumption

3.1.1 The maximum power consumption requirements measured in watts for each module are as follows:

<b>MODULE</b>	<b>25°C</b>	<b>74°C</b>
"RAISED HAND"	10.0 W	12.0 W
"WALKING PERSON"	12.0 W	15.0 W

3.2 Operating Voltage

- 3.2.1 Each module shall operate from a  $60\text{ Hz} \pm 3\text{ Hz}$  AC line over a voltage ranging from 95 volts to 135 volts. Fluctuations of line voltage shall have no visible effect upon the luminous intensity of the indications.
- 3.2.2 The operating voltage of the modules shall be 120 Volts AC. All operating parameters shall be measured at this voltage.
- 3.2.3 LED circuitry shall prevent perceptible flicker to the unaided eye over the 95 to 135 voltage range.
- 3.3 The LED signal module shall have a power factor of 0.98 or greater at a nominal rated voltage at  $25^{\circ}\text{C}$  after 60 minutes of operation.
- 3.4 Total harmonic distortion (current and voltage) induced into an AC power line by an LED signal shall not exceed 20 percent at the rated voltage at  $25^{\circ}\text{C}$ .
- 3.5 The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.6 of the NEMA Standard TS-2 dated 1992.
- 3.6 Each LED module and associated on-board circuitry shall be in compliance with Federal Communications Commission (FCC) noise regulations and must meet FCC Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise.
- 3.7 The "RAISED HAND" and the "WALKING PERSON" LED modules shall be U.S. EPA-Energy Star compliant. Power consumption of these LED modules shall not exceed the maximum allowed by the EPA.
- 3.8 All wiring and terminal blocks must meet the requirements of Section 13.02 of the ITE Publication Equipment and Material Standards; Chapter 2 (Vehicle Traffic Control Signal Heads).
- 3.9 Each LED module shall be operationally compatible with controller assemblies and peripheral equipment including solid state load switches.

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LIGHT EMITTING DIODE (LED) COUNTDOWN  
PEDESTRIAN SIGNAL MODULES

## LIGHT EMITTING DIODE (LED) COUNTDOWN PEDESTRIAN SIGNAL MODULES

1. The purpose of this specification is to describe the minimum acceptable design and operating requirements for 12-inch (300-mm) Light Emitting Diode (LED) pedestrian signal modules intend for use where countdown displays are required. The specific items included in this specification include the 12-inch overlay lunar white walking person and Portland orange raised hand LED module and the 12-inch Portland orange countdown LED module.

### 2. GENERAL DESCRIPTION

- 2.1 This specification covers two separate LED Modules. The first type features the Portland orange raised hand overlaid on the lunar white walking person arrayed in a module. The second type features the Portland orange countdown display.
- 2.2 Each module is to be used in place, of the incandescent lamp, reflector, socket, gasket, and lens assembly of the standard 12-inch (300mm) pedestrian signal section. Each LED module shall consist of an assembly that utilizes LED's as the light source in lieu of an incandescent lamp for use in pedestrian signal sections.
- 2.3 Pedestrian LED modules shall be engineered to fit in all TTE compliant conventional pedestrian signal housings. They shall fit in the conventional polycarbonate pedestrian signal head housing, as used in the District of Columbia, and as described in detail in an accompanying technical specification. Unless otherwise note, pedestrian signal sections are 12 inch square.
- 2.4 Each LED Module shall utilize appropriate technology to achieve the required color and, shall be the ultra bright type rated for 100,000 hours of continuous operation from -40°C to +74°C.
- 2.5 Each LED module shall be rated for a minimum useful life of 48 months. All modules shall meet all parameters of this specification during this period
- 2.6 Each individual LED module shall be wired such that a catastrophic loss or failure of one LED will result in the loss of not more than 5 percent of the signal module light output.
- 2.7 The "WALKING PERSON" and the "RAISED HAND" symbols shall conform to all applicable requirements of the Manual on Uniform Traffic Control Devices (MUTCD).
- 2.8 The "WALKING PERSON" and the "RAISED HAND" shall be overlaid in a special configuration which centers both within the module and provides clear and distinct illumination when either symbol is in use.
- 2.9 The "WALKING PERSON" and the "RAISED HAND" overlaid module shall feature internal circuitry and wiring which prevent both from being illuminated at the same time.
- 2.10 The countdown module shall conform to the following minimum requirements
  - 2.10.1 The countdown numbers shall feature 2 digits. Two rows of LED's shall be provided for each digit
  - 2.10.2 Countdown logic circuitry uses A.C. power to derive timing

data from the intersection traffic signal controller. The timer shall be microprocessor based.

- 2.10.3 The unit shall feature a mechanism such as a multi-position dip switch to enable the user to select specific modes for countdown functions. The unit shall be capable of displaying countdown numbers during the WALK and pedestrian clearance intervals and/or during the pedestrian clearance interval only.
- 2.10.4 The unit shall feature a test switch which displays "8" for 2 seconds before going blank.
- 2.10.5 The unit shall automatically adjust to the programmed intervals of the traffic signal controller. During transition between timing plans, the unit shall be dark for NO MORE than two (2) signal cycles while the unit adjusts to the new timing patterns. The WALK and DON'T WALK displays in the adjacent module shall continue to operate during this transition.
- 2.10.6 The unit shall be capable of displaying numbers ranging from 00 to 99. Each number shall be 7 inches tall.
- 2.11 The "WALKING PERSON", "RAISED HAND" and countdown displays shall be designed to be clearly visible and legible under any fighting conditions front a distance of 200 feet anywhere within a 15 degree cone centered about optical axis.

### 3. ELECTRICAL REQUIREMENTS

#### 3.1 Power Consumption

- 3.1.1 The maximum power consumption requirements measured in watts for each module are as follows:

MODULE	25°C	74°C
"RAISED HAND"	10.0 W	12.0 W
"WALKING PERSON"	12.0 W	15.0 W
"COUNTDOWN"	12.0 W	15.0 W

#### 3.2 Operating Voltage

- 3.2.1 Each module shall operate from a 60MH ± 3HZ AC line over a voltage ranging from 95 volts to 135 volts. Fluctuations of line voltage shall have no visible effect upon the luminous intensity of the indications.
- 3.2.2 The operating voltage of the modules shall be 120 Volts AC. AU operating parameters shall be measured at this voltage.
- 3.2.3 LED circuitry shall prevent perceptible flicker to the unaided eye over the 95 to

135 voltage range.

- 3.3 The LED signal module shall have a power factor of 0.90 or greater at a nominal rated voltage at 25° C after 60 minutes of operation.
- 3.4 Total harmonic distortion (current and voltage) induced into an AC power line by an LED signal shall not exceed 20 percent at the rated voltage at 25° C.
- 3.5 The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.6 of the NEMA Standard TS-2 dated 1992.
- 3.6 Each LED module and associated on-board circuitry shall be in compliance with Federal Communications-Commission (FCC) noise regulations and must *meet* FCC Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise.
- 3.7 The LED modules shall be U.S. EPA-Energy Star compliant. Power consumption of these LED modules shall not exceed the maximum allowed by the EPA.
- 3.8 All wiring and terminal blocks must meet the requirements of Section 13.02 of the [TE Publication Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads).
- 3.9 Each LED module shall be operationally compatible with controller assemblies and peripheral equipment including solid state load switches, flashers, and conflict monitors currently used in the District of Columbia. Current controller specifications are available for review at the specific request of the contractor or vendor.
  - 3.9.1 When a current of 20mA AC or less is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.
- 3.10 Each LED module shall feature control circuitry to prevent current flow through the LED module in the off state to avoid any false indication as may be perceived by the human eye during daylight and evening hours.

#### **4. ENVIRONMENTAL REQUIREMENTS**

- 4.1 Each LED module shall be rated for use in operating temperatures in the range of -40°C (-40°F) to +74°C (+165°F). Each LED module shall meet all specifications throughout this temperature range.
- 4.2 Each LED module shall be protected against dust and moisture intrusion in conformance with NEMA Moisture Resistant Standard 250-1991 for Type 4 enclosures to protect all internal components.

#### **5. CONSTRUCTION**

- 5.1 Each LED Module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing pedestrian signal housing.
- 5.2 The power supply for the LED module shall be integral to the unit.
- 5.3 The circuit board and the power supply shall be contained inside the module.

- 5.4 Each LED module shall incorporate a printed circuit board containing all required LEDs and circuit components. The LEDs shall be mounted and soldered to the printed circuit board.
- 5.5 Each LED module shall feature two 39-inch long 24AWG minimum wire lead with strain relief and spade terminals for connection to the terminal block of the signal heads. One of the conductors shall contain white insulation to signify neutral. The color of other conductor shall be different and shall be used to differentiate between the "RAISED HAND" and the "WALKING PERSON" LED modules. The two conductors shall be 600 Volt, 20 AWG minimum, jacketed wires conforming to the National Electric Code, rated for service at +105°C.
- 5.6 Each LED module shall feature a rigid housing for protection in shipping, handling and installation and a one-piece neoprene gasket. Screw-in type products are expressly prohibited for LED modules.
- 5.7 The assembly and manufacturing process for the LED signal assembly shall be designed to ensure that all internal components are adequately supported to withstand mechanical shock and vibration front high winds and other sources.
- 5.8 Each LED module shall be watertight when properly installed in a pedestrian signal housing. Each LED module shall utilize the same mounting hardware used to secure the incandescent lens and gasket assembly, and shall only require a screwdriver or a standard installation tool to complete the mounting.
- 5.9 Each LED module shall weigh less than 5 pounds.

## 6. MATERIALS

- 6.1 Materials used for the lens and signal module shall conform to the appropriate ASTM specification for the materials.
- 6.2 Enclosures containing either the power supply or electronic components of the signal module shall be made of UL94VO flame retardant materials. The module lens does not need to comply with this requirement.
- 6.3 The lens for the "RAISED HAND" LED Module and the "WALKING PERSON" LED module shall be clear with a textured surface to reduce glare.
- 6.4 Each LED module lens shall be UV stabilized plastic capable of withstanding ultra violet direct sunlight for a minimum period of 5 years without exhibiting evidence of deterioration.
- 6.5 The external lens surface shall be smooth with no raised features, so as to minimize the collection of dirt, debris, and other particulate contaminants, which may impact luminous intensity, and to facilitate periodic cleaning. External lens facets are prohibited.

## 7. MODULE IDENTIFICATION

- 7.1 Each LED module shall have the manufacturers name, trademark, model number, serial number, date of manufacture (month and year) and lot number as identification permanently marked on the back of the module. This identification is required, and is in addition to any other identification that may be required in contract special provisions by the District of Columbia.
- 7.2 Rated voltage and rated power in Watts and Volt Amperes shall also be permanently marked on the back of each LED module.

- 7.3 Each LED module shall have prominent and permanent markings for correct indexing and orientation within a signal head housing. The markings shall consist of an up arrow, or the word "UP" or "TOP" to ensure that the LED module is inserted into the signal head housing with the correct orientation.
- 7.4 As detailed in Section 5.5 of this specification, conductors connecting the LED module to the signal head housing terminal block shall be color-coded to differentiate between the "RAISED HAND", the "WALKING PERSON", and the "COUNTDOWN" LED module.

**8. PHOTOMETRIC REQUIREMENTS**

- 8.1 Each "RAISED HAND" LED module shall provide an average luminous intensity of 3,750 candela per square meter throughout the useful life and over the operating temperature range.
- 8.2 Each "WALKING PERSON" LED module shall provide an average luminous intensity of 5,300 candela per square meter throughout the useful life and over the operating temperature range.
- 8.3 Each "COUNTDOWN" LED module shall provide an average luminous intensity of 5,300 candela per square meter throughout the useful life and over the operating temperature range.
- 8.4 The uniformity ratio of an illuminated symbol shall not exceed 4 to 1 between the highest luminance area and the lowest luminance area in the LED module.
- 8.5 The color output of each LED module shall conform to the requirements of Section 5.3 in the ITE Publication Equipment and Material Standards, Chapter 3, (Pedestrian Traffic Control Signal Indications).
  - 8.5.1 The "RAISED HAND" within the LED module and the COUNTDOWN LED module shall be Portland orange not greater than 0.390, and not less than 0.331, nor less than 0.997 - x
  - 8.5.2 The "WALKING PERSON" LED shall be lunar white.
    - X: not less than 0.290 nor greater than 0.330
    - Y: not less than 1.5x-0.175, or greater than 1.5x-0.130
- 8.6 Both the "RAISED HAND" and the "WALKING PERSON" LED modules shall be filled with LED's to give the appearance that the entire image is illuminated when energized. Outlined images will not be permitted.
- 8.7 The height of the "RAISED HAND" and the "WALKING PERSON" images on the module shall not be less than 250 mm and the width of each image shall not be less than 165 mm.

**9. QUALITY ASSURANCE**

- 9.1 The modules shall be manufactured in accordance with a manufacturer quality assurance (QA) program. The QA program shall include two types of quality assurance: (1) design quality assurance and (2) production quality assurance. The production quality

assurance shall include statistically controlled routine tests to ensure minimum performance levels of the modules built to meet this specification, and a documented process of how problems are to be resolved.

- 9.2 QA process and test results documentation shall be kept on file for a minimum period of seven years.
- 9.3 LED signal module designs not satisfying design qualification testing and the production quality assurance testing performance requirements described below shall not be labeled, advertised, or sold as conforming to this specification.

#### 9.4 Design Qualification Testing

9.4.1 Design Qualification testing shall be performed by the manufacturer or an independent testing lab hired by the manufacturer on new LED - module designs, and when a major design change has been implemented on an existing design.

9.4.2 A major design change is defined as design change (electrical or physical) which changes any of the performance characteristics of the module, results in a different circuit configuration for the power supply, or changes the layout of the individual LED's in the module:

9.4.3 A quantity of two units for each design shall be submitted for Design Qualification Testing.

9.4.3.1 Test units shall be submitted to the District of Columbia after the manufacturer's testing is complete:

9.4.3.2 Manufacturer's testing data shall be submitted with test units for the District of Columbia verification of Design Qualification Testing data.

#### 9.4.4 Burn In

9.4.4.1 The sample modules shall be energized for a minimum of 24 hours, at 100 percent on-time duty cycle, at a temperature of +74°C (+165°F) before performing any design qualification testing. 9.4.4.2 Any failure of the module, which renders the unit non-compliant with the specification after burn-in, shall be cause for rejection.

9.4.5 For Design Qualification Testing, all specifications will be measured including; but not limited to the following:

9.4.5.1 Rated Initial Luminous Intensity: Measured over the operating temperature range.

9.4.5.2 Chromaticity (Color): Measured over the operating temperature range.

9.4.5.3 Electrical.

All specified parameters shall be measured and used for quality comparison of production quality assurance on production modules (rated power, etc.)

9.4.5.4 Equipment Compatibility.

Modules shall be tested for compatibility with the controller unit, conflict

unit, conflict monitor, and load switch. Each signal module shall be connected to the output of a standard load switch connected to an AC voltage supply between the values of 95 and 135 VAC with the input to the load switch in the "off" position. The AC voltage developed across each LED signal module so connected shall not exceed 10 Vrms as the input AC voltage is varied from 95 Vrms to 135 Vrms.

9.4.5.5 Mechanical vibration testing shall be as per MIL-STD-883, Test Method 2007, using 3-four-minute cycles along each x, y, and z axis, at a force of 2.5 Gs, with a frequency sweep from 2 HZ to 120 HZ. The loosening of the lens, of any internal components, or other physical damage shall be cause for rejection.

9.4.5.6 Temperature cycling shall be performed as MIL-STD-883, Test. method 1010. The temperature range shall be per "Environment, Requirements". A minimum of 20 cycles shall be performed with a 30 minute transfer time between temperature extremes and a 30 minute dwell time at each temperature. Module(s) being tested shall be energized and functioning throughout the duration of the test. Failure of a module to fraction properly or any evidence of cracking of the module lens or housing, after temperature cycling shall be cause for rejection.

9.4.5.7 Moisture resistance testing shall be performed on all modules mounted in a standard type "A" pedestrian housing per NEMA Standard 250-1991 for Type 4 enclosures. Any evidence of internal moisture after testing shall be cause for rejection.

## 9.5 Production Quality Control Testing

9.5.1 The following Production Quality Assurance shall be performed for each new module prior to shipment Failure to meet requirements of any of these tests shall be cause of rejection. Test results shall be retained by the manufacturer for seven years.

9.5.2 Burn-in period shall consist of each signal module being energized at rated voltage of a 30 minute stabilization period before the measurement is made.

9.5.3 Each module shall be tested for rated initial intensity after both-in.

9.5.3.1 A single point measurement, with a correlation to the intensity requirements of Section 1.04 of the VTSCH for circular modules, may be used.

9.5.3.2 The ambient temperature for this measurement shall be +25 C° (+77°F).

9.5.3.3 Each module not meeting minimum luminous intensity requirements of 3,750 cd/m<sup>2</sup> for the raised hand symbol and 5,300 cd/m<sup>2</sup> for the walking person symbol shall be cause for rejection

9.5.4 Each module shall be tested for required power factor after burn-in.

9.5.5 Each module shall be measured for current flow in amperes after burn in. The measured current values shall be compared against rated values resulting from design qualification measurements under "Design Qualification Testing". The current flow shall not exceed the rated value.

9.5.6 Each Module shall be visually inspected for any exterior physical - damage or assembly anomalies. Careful attention shall be paid to the surface of the lens to ensure there are no scratches (abrasions), cracks chips, discoloration, or other defects. Any such defect shall be cause for rejection.

9.6 The manufacturer shall be required to undertake Design Qualification and Production Quality Control testing as specified in Section 9.4 and 9.5 of these specifications and report all results to the District of Columbia through the contractor. Procurement and installation of LED modules prior to the receipt and acceptance of test results by the District of Columbia is done at the contractors' risk.

## 10. OPERATIONAL REQUIREMENTS

10.1 The countdown timer will be designed to either countdown to zero the accumulated sum of the pedestrian "WALK" and "CLEARANCE" (flashing don't walk) times or count down to zero only the "CLEARANCE" time. The countdown display shall always be dark during the steady don't walk indication. The mode of operation shall be selected through an easily accessible multi-position dip switch. All units procured for this contract shall be delivered configured to countdown to zero from the pedestrian clearance time.

10.2 The module, when connected to the appropriate pedestrian signal switch pack outputs, shall have as automatic learn mode in order to learn and store the pedestrian times in its memory, and to self adjust for subsequent changes in pedestrian timing. The individual "WALK" and "CLEARANCE" times shall be stored in two separate counters.

10.2.1 Following power restoration to the unit after a power outage of greater than two (2) seconds, the unit will remain dark for one pedestrian cycle to learn, acquire the current pedestrian timing, replace say values that were stored in memory the power outage with the newly acquired times, and display the newly acquired times on the next pedestrian cycle.

10.2.2 The unit shall detect changes in pedestrian timing during normal operation, and act upon theta as described below:

10.2.2.1 The countdown timer will automatically re-program itself should it detect any increase in pedestrian timing. The increased timing shall be displayed on the subsequent pedestrian cycle.

10.2.2.2 The countdown timer will ignore any shortened pedestrian cycle that produces a shortened pedestrian clearance time equal to or less than two seconds.

10.2.2.3 The countdown timer will detect any reductions in pedestrian timing detected (such as those occurring during a traffic preemption cycle) and display on the subsequent pedestrian cycle the timing stored in its memory prior to the shortened pedestrian cycle.

10.2.2.4 The countdown timer will reprogram itself should it detect two consecutive identical shortened pedestrian cycles and display this timing on the- text pedestrian cycle.

10.3 The unit shall be designed to suspend any timing and go dark when, for any reason, the switch pack output displays a steady don't walk condition during the timing of a pedestrian "WALK" or "CLEARANCE" period and if the module has not yet arrived at the zero count in the cycle.

10.4 The countdown timer' shall be capable of timing consecutive complete pedestrian cycles outputted by the traffic signal Controller.

10.5 The unit shall be designed to operate during and following a preemption cycle as described in this section.

10.5.1 The countdown timer shall recognize if the "WALK" or "CLEARANCE" times have been truncated or shortened.

10.5.1.1 During some preemption events the "WALK" indication, if displayed, would be truncated by the traffic signal controller and then proceed immediately to time the full pedestrian "CLEARANCE" cycle. Should this condition be detected, the timer module shall detect the Termination of the "WALK" and the beginning of the pedestrian "CLEARANCE" and begin timing the clearance time stored in its memory toward zero.

10.5.1.2 During other preemption events the 'ALK" indication, if displayed, would be truncated .by the traffic signal controller and then proceed immediately to time a shortened pedestrian "CLEARANCE" cycle. Should this condition be detected, the timer module shall detect the termination of the "WALK" and the beginning of the pedestrian "CLEARANCE" and begin timing the clearance time stored in its memory toward zero. Once the switch pack output displays a steady "DON'T WALK" indication during the timing of this pedestrian "CLEARANCE" and if the module has not arrived at the zero count in the cycle, the timer will be designed to go dark.

10.5.1.3 In preemption cases which immediately eliminate both the "WALK" and the "CLEARANCE" outputs, the pedestrian indication will immediately cycle to a steady "DON'T WALK." display. In such instances, the countdown timer shall recognize the steady "DON'T WALK" indication and the timer will be designed to go dark.

10.5.2. At the cycle immediately following a preempted cycle, the countdown timer shall display the correct timing parameters as initially programmed and not be affected by the reduced time. If the reduced time is less than two seconds, the countdown timer shall ignore this and continue to display the correct time, as initially programmed.

10.6 The countdown timer shall be designed to retain the pedestrian timing stored in the memory for all power outages of less than one second and to continue timing this pedestrian timing. Memory may or may not be retained for power outages between one and two seconds duration. The unit will resume operation as described in Paragraph 11.2 for power outages greater than two seconds in duration.

## **11. WARRANTY**

11.1 The manufacturer shall provide a written warranty against defects in materials and workmanship for a minimum period of 60 months after acceptance of the modules.

11.2 The warranty period shall begin on the date the LED module is energized and placed into service at the intersection, or ninety (90) days after delivery of the module to the District of Columbia, whichever occurs first.

11.3 Replacement LED modules shall be provided on a one for one basis promptly after receipt of LED modules that have failed. Replacement shall occur at no cost to the District of Columbia prior to random sample testing.

11.4 All warranty documentation shall be submitted to the District of Columbia prior to random sample testing.

## SCHEDULE OF LED TRAFFIC SIGNAL REPLEACEMENT AT INTERSECTIONS

Note: This list presents the order of intersections at which LED Traffic signals should be replaced based on the dates of initial (LED) installation. The contractor shall verify if any LED signal maintenance work has been performed recently before replacing.

<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2239	1	5TH ST., D ST. AND INDIANS AVE., NW	7/2/2002
4142	2	PENNSYLVANIA AVE. AND 30TH ST., SE	9/17/2002
4143	2	PENNSYLVANIA AVE. AND 31ST ST., SE	9/17/2002
4140	2	PENNSYLVANIA AVE. AND 27TH ST., SE	9/18/2002
4141	2	PENNSYLVANIA AVE. AND 28TH ST., SE	9/19/2002
3043	1	N. CAPITOL ST. AND RHODE ISLAND AVE.	9/23/2002
4059	2	SOUTH EAST FREEWAY & SOUSA BRIDGE, SE	9/24/2002
4060	2	BARNEY CIRCLE, SE	9/24/2002
4236	2	PENNSYLVANIA AVE. AND FAIRLAWN AVE., SE	9/26/2002
4144	2	PENNSYLVANIA AVE. AND 38TH ST., SE	10/1/2002
4145	2	PENNSYLVANIA AVE. AND BRANCH AVE., SE	10/1/2002
4100	1	ALABAMA AVE. AND PENNSYLVANIA AVE., SE	10/3/2002
4147	2	PENNSYLVANIA AVE. AND SOUTHERN AVE., SE	10/7/2002
4201	2	PENNSYLVANIA AVE. AND L'ENFANT SQ., SE	10/8/2002
4090	1	ALABAMA AVE. AND 30TH ST., SE	10/9/2002
4103	1	SOUTHERN AVE. AND BRANCH AVE., SE	10/9/2002
4146	2	PENNSYLVANIA AVE. AND MINNESOTA AVE., SE	10/9/2002
4196	2	SUITLAND PARKWAY AND STANTON RD., SE	10/14/2002
4159	2	SUITLAND PARKWAY & FIRST STERLING AVE., SE	10/15/2002
4191	2	S. CAPITOL ST. AND SUITLAND PKWY (DETOUR)	10/15/2002
4051	2	15TH ST. AND PENN AVE., SE	10/18/2002
4042	2	12TH ST. AND PENN AVE., SE	10/22/2002
4094	1	ALABAMA AVE. AND BRANCH AVE., SE	10/24/2002
4045	2	13TH ST. AND PENN AVE. AND G ST., SE	10/25/2002
4088	2	ALABAMA AVE. & 22NDS & 23RD & SUITLAND PWK SE	10/25/2002
4048	2	14TH ST. & PENN AVE & POTOMAC AVE (EAST) SE	10/26/2002
4049	2	14TH ST. & PENN & POTOMAC AVE(WEST) SE	10/28/2002
4032	2	9TH ST. AND PENN AVE., SE	11/2/2002
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4035	2	11TH ST. AND E. ST. AND PENN AVE., SE	11/2/2002
6135	2	WISCONSIN AVE. AND EDMONDS ST., NW	11/2/2002
6159	2	WISCONSIN AVE., ELLICOTT, AND 42ND ST., NW	11/2/2002
4028	2	8TH ST. AND PENN AVE., SE	11/4/2002
4024	2	7TH ST. AND PENN. AVE., SE	11/5/2002
4018	2	6TH ST. AND PENN. AVE., SE	11/6/2002
4008	2	3RD ST. AND PENN AVE. AND INDEP AVE., SE	11/7/2002
4013	2	4TH ST. AND PENN AVE., SE	11/7/2002
4057	2	PENN AVE AND NO. CAROLINA AVE., SE	11/7/2002
4005	2	2ND ST. AND PENN AVE. AND INDEP. AVE., SE	11/13/2002
6008	2	28TH ST. AND PENNSYLVANIA AVE. AND M ST., NW	11/14/2002

6011	2	29TH ST. AND M ST. AND PENNSYLVANIA AVE., NW	11/14/2002
6016	2	31ST ST. AND M ST., NW	11/15/2002
6238	1	MST. POTOMAC ST., AND MARKET PL., NW	11/15/2002
2200	1	7TH ST. AND MAINE AVE., SW	11/16/2002
6057	2	CANAL RD. AND ARIZONA AVE., NW	11/18/2002
6059	2	CANAL RD. AND FOXHALL RD.,	11/18/2002
6160	2	CANAL ROAD AND GEORGETOWN UNIV. ENTRANCE	11/18/2002
5238	2	16TH ST. AND NORTH PORTAL DR., NW	11/19/2002
6145	2	WISCONSIN AVE. AND N ST., NW	11/19/2002
6158	2	WISCONSIN AVE. AND PROSPECT ST., NW	11/19/2002
6030	2	34TH ST. AND WISCONSIN AVE., NW	11/20/2002
6147	2	WISCONSIN AVE. AND P ST., NW	11/20/2002
6150	2	WISCONSIN AVE. AND R ST., NW	11/20/2002
6153	2	WISCONSIN AVE. AND W PL., NW	11/21/2002
6154	2	WISCONSIN AVE. AND WHITEHAVEN ST. WTHVN PWY, NW	11/21/2002
6254	2	2323 WISCONSIN AVE., NW	11/21/2002
6139	2	WISCONSIN AVE. AND HALL PL., NW	11/22/2002
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
6134	2	WISCONSIN AVE. AND DUMBARTON ST. & O ST., NW	11/23/2002
6142	2	WISCONSIN AVE. AND M ST., NW	11/23/2002
6149	2	WISCONSIN AVE. AND Q ST., NW	11/27/2002
6132	2	WISCONSIN AVE. AND CALVERT ST. & 37TH ST., NW	12/3/2002
6138	2	WISCONSIN AVE. AND GARFIELD ST., NW	12/6/2002
6144	2	WISCONSIN AVE. AND MASSACHUSETTS AVE., NW	12/6/2002
1003	2	14TH ST. AND FEDERAL TRIANGLE BLDG. SOUTH	12/7/2002
6143	2	WISCONSIN AVE. AND MACOMB ST., NW	12/7/2002
6146	2	WISCONSIN AVE. AND NEWARK ST., NW	12/7/2002
6148	2	WISCONSIN AVE. AND PORTER ST., NW	12/7/2002
6155	2	WISCONSIN AVE. AND AND WOODLEY RD., NW	12/7/2002
1253	2	INDPENENCE AVE. AND WEST BASIN DR., SW	12/9/2002
6137	2	WISCONSIN AVE. AND FRIENDSHIP PO (3900 Wisc), NW	12/9/2002
6151	2	WISCONSIN AVE. AND RODMAN ST., NW	12/9/2002
6152	2	WISCONSIN AVE. AND VAN NESS ST., NW	12/9/2002
6131	2	WISCONSIN AVE. AND BRANDYWINE ST., NW	12/10/2002
6136	2	WISCONSIN AVE. AND FESSENDENT ST., NW	12/12/2002
6140	2	WISCONSIN AVE. AND HARRISON ST., NW	12/12/2002
6129	2	WESTERNAVE. AND WISCONSIN & MILITARY, NW	12/13/2002
6032	1	35TH ST. AND RESERVOIR RD., NW	12/14/2002
6034	1	38TH ST. AND RESERVOIR RD., NW	12/14/2002
6038	1	39TH ST. AND RESERVOIR RD., NW	12/14/2002
1175	2	CONN AVE AND CALIFORNIA ST., NW	12/16/2002

6021	1	33RD ST. AND Q ST., NW	12/16/2002
6028	1	34TH ST. AND Q ST., NW	12/16/2002
6029	1	34TH ST. AND RESERVOIR RD., NW	12/16/2002
6241	1	37TH ST. AND RESERVOIR RD., NW	12/16/2002
6007	1	28TH ST. AND P ST., NW	12/17/2002
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
6014	1	30TH ST. AND P ST., NW	12/17/2002
6071	2	CONNECTICUT AVE. AND LIVINGSTON ST., NW	12/17/2002
6076	2	CONNECTICUT AVE. AND OLIVER ST., NW	12/17/2002
6062	2	CONNECTCUT AVE. AND ALBERMARLE ST., NW	12/18/2002
6066	2	CONNECTICUT AVE. AND DAVENPORT ST., NW	12/18/2002
6068	2	CONNECTICUT AVE. AND FESSENDEN & #31 ENG HS, NW	12/18/2002
6069	2	CONNECTICUT AVE. AND HUNTINGTIN ST., NW	12/18/2002
6070	2	CONNECTICUT AVE. AND JENFER ST., NW	12/18/2002
6073	2	CONNECTICUT AVE. AND MCKINILEY ST., NW	12/18/2002
6063	2	CONNECTICUT AVE. AND BRANDYWINE ST., NW	12/19/2002
6085	2	CONNECTICUT AVE. AND YUMA ST., NW	12/19/2002
6086	2	CONNECTICUT AVE. AND WNDOOM 7 YUMA, NW	12/19/2002
6067	2	CONNECTICUT AVE. AND DEVONSHIRE PL., NW	12/21/2002
6072	2	CONNECTICUT AVE. AND MACOMB ST., NW	12/21/2002
6004	2	24TH ST. AND CONNECTICUT AVE., NW	12/23/2002
6065	2	CONNECTICUT AVE. AND CATHEDRAL AVE., NW	12/23/2002
6087	2	CONNECTICUT AVE. AND ZOO GATE ENTRANCE, NW	12/23/2002
6088	2	CONNECTICUT AVE. AND ZOO GATE, NW	12/23/2002
1179	2	CONNECTICUT AVE. AND T ST., NW	12/26/2002
1181	2	CONNECTICUT AVE. AND KALORAMA RD., NW	12/26/2002
1144	2	21ST ST. AND S ST., CONN AVE., FLA AVE., NW	12/27/2002
2031	1	4TH ST. AND WASHINGTON DR., NW	12/27/2002
1001	2	7TH ST. AND MADISON DR., NW	12/28/2002
1018	2	14TH ST. AND MADISON DR., NW	12/28/2002
1203	2	7TH ST. AND ADAMS DR., SW	12/28/2002
1209	2	7TH ST. AND JEFFERSON DR., SW	12/28/2002
1224	2	14TH ST. AND JEFFERSON DR., SW	12/28/2002
1242	2	15TH ST. AND JEFFERSON DR., SW	12/28/2002
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1243	2	15TH ST. AND MADISON DR., NW	12/28/2002
2186	1	4TH ST. AND ADAMS DR., SW	12/28/2002
2192	1	4TH ST. AND JEFFERSON DR., SW	12/28/2002
1066	1	17TH ST. AND DESALES ST., NW	12/30/2002
1073	1	17TH ST. AND L ST., NW	12/30/2002
1074	1	17TH ST. AND M ST., NW	12/30/2002

1072	2	17TH ST. AND K ST., NW (EAST)	1/2/2003
2029	1	4TH ST. AND MADISON DR., NW	1/2/2003
6074	2	CONNECTICUT AVE. AND MILITARY ST., NW	1/3/2003
1064	2	17TH ST. AND CONNECTICUT AVE. AND I ST., NW	1/8/2003
2022	1	3RD ST. AND MADISON DR., NW	1/8/2003
2024	1	3RD ST. AND WASHINGTON DR., NW	1/8/2003
2178	1	3RD ST. AND ADAMS DR., SW	1/8/2003
1091	2	18TH ST. AND I ST., NW	1/9/2003
1092	2	18TH ST. AND K ST., NW	1/10/2003
1112	1	19TH ST. AND L ST., NW	1/10/2003
1063	2	17TH ST. AND CONNECTICUT AVE. AND K ST., NW	1/11/2003
1002	2	7TH ST. AND WASHINGTON DR., NW	1/13/2003
2183	1	3RD ST. AND JEFFERSON DR., SW	1/13/2003
1111	2	19TH ST. AND K ST., NW	1/15/2003
1123	2	20TH ST. AND K ST., NW	1/15/2003
1138	2	21ST ST. AND K ST., NW	1/17/2003
1070	2	17TH ST. AND I ST., NW	1/22/2003
6246	2	WISCONSIN AVE. AND UPTON ST., NW	1/29/2003
6075	2	CONNECTICUT AND NEBRASKA AVE., NW	1/30/2003
6081	2	CONNECTICUT AVE. AND TILDEN ST., NW	2/3/2003
6083	2	CONNECTICUT AVE. AND VEAZEY TERRACE, NW	2/3/2003
6064	2	CONNECTICUT AVE. AND CALVERT ST., NW	2/5/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
6084	2	CONNECTICUT AVE. AND WOODLEY RD., NW	2/5/2003
1222	2	14TH ST. AND C ST.,SW	2/8/2003
6033	2	36TH ST. AND M ST., NW	2/8/2003
6058	2	CANAL RD. AND CHAIN BRIDGE, NW	2/8/2003
6082	2	CONNECTICUT AVE. ANDVAN NESS ST., NW	2/8/2003
6092	2	KEY BRIDGE AND M ST., NW	2/8/2003
1093	1	18TH ST. AND L ST., NW	2/11/2003
1122	2	20TH ST. AND I ST., NW	2/11/2003
1139	1	21ST ST. AND L ST., NW	2/11/2003
1176	2	CONN AVE AND DESALES ST., NW	2/11/2003
1113	1	19TH ST. AND M ST., NW	2/12/2003
1094	2	18TH ST. AND M ST., CONN AVE, R I AVE., NW	2/13/2003
1096	2	18TH ST. AND N ST. AND CONN AVE., NW	2/13/2003
1125	1	20TH ST. AND M ST., NW	2/13/2003
1140	1	21ST ST. AND M ST., NW	2/13/2003
1084	2	18TH ST. AND CONN AVE, JEFFERSON PL., NW	2/14/2003
1087	2	18TH ST. AND E ST., NEW YORK AVE., NW (NORTH)	2/24/2003
2106	1	11TH ST. AND I ST. AND NEW YORK AVE., NW	2/24/2003

3128	1	18TH ST. AND MONTANA AVE. & W ST., NE	2/24/2003
1020	1	14TH ST. AND NEW YORK AVE., NW	2/25/2003
2126	1	12TH ST. AND NEW YORK AVE., NW	2/25/2003
2135	1	13TH ST. AND H ST. AND NEW YORK AVE., NW	2/25/2003
1228	1	EAST BASIN DR. AND MAINE AVE., SW	3/3/2003
2047	2	6TH ST. AND NEW YORK AVE., NW	3/3/2003
2096	1	10TH ST. AND NEW YORK AVE., NW	3/3/2003
1077	2	17TH ST. AND NEW YORK AVE., SLATE PL., NW	3/4/2003
3003	1	1ST ST. AND O ST., NW	3/4/2003
3009	2	3RD ST. AND M ST. AND NEW YORK AVE., NW	3/4/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3045	2	NEW JERSEY AVE, NEW YORK AVE. AND M ST., NW	3/4/2003
3012	2	4TH ST. AND NEW YORK AVE., NW	3/5/2003
3039	1	N. CAPITOL ST. AND NEW YORK AVE.	3/5/2003
3238	2	5TH ST. AND NEW YORK AVE. AND L ST., NW	3/5/2003
3247	2	8TH ST. AND NEW YORK AVE., NE	3/6/2003
3031	2	1ST ST. AND O ST. AND NEW YORK AVE., NE	3/7/2003
3175	1	MT. OLIVET RD. & BRENTWOOD PARKWAY, NE	3/7/2003
3176	1	MT. OLIVET RD. & BRENTWOOD PKW & e RAMP, NE	3/7/2003
3033	2	FLORIDA AVE. AND NEW YORK AVE., NE	3/8/2003
3178	2	NEW YORK AVE. AND 4TH ST., NE	3/8/2003
3180	2	NEW YORK AVE AND BLADENSBURG RD., NE	3/8/2003
3179	2	NEW YORK AVE. AND 16TH ST., NE	3/10/2003
3182	2	NEW YORK AVE. AND FENWICK ST., NE	3/10/2003
3183	2	NEW YORK AVE. AND KENDALL ST., NE	3/10/2003
3152	1	FRNKLIN ST. AND 10TH ST., NE	3/12/2003
3154	1	FRANKINST. AND 13TH ST., NE	3/12/2003
3155	1	FRANKLIN ST. AND 14TH ST., NE	3/12/2003
3185	2	NEW YORK AVE. & MONTANA AVE. & W. VA AVE., NE	3/12/2003
3246	2	NEW YORK AVE. AND MT. OLIVET RD., NE	3/12/2003
1053	2	16TH ST. AND L ST., NW	3/13/2003
1054	2	16TH ST. AND M ST., NW	3/13/2003
3153	1	FRANKLIN ST. AND 12TH ST., NE	3/13/2003
3156	1	FRANKLIN ST. AND 18TH ST., NE	3/13/2003
3157	1	FRANKLIN ST. AND 20TH ST., NE	3/13/2003
5092	2	16TH ST. AND HARVARD ST. & MT PLEASANT ST., NW	3/13/2003
1056	2	16TH ST. AND Q ST., NW	3/14/2003
1058	2	16TH ST. AND S ST., NW	3/14/2003
1060	2	16TH ST. AND T ST., NW	3/14/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3158	1	FRANKLINN ST. AND MILLS AVE. AND 24TH ST., NE	3/14/2003

1057	2	16TH ST. AND R ST., NW	3/17/2003
1061	2	16TH ST. AND U ST., NW	3/17/2003
3149	1	BRENTWOOD RD. AND W ST., NE	3/17/2003
5089	2	16th ST. AND FLORIDA AVE. & W ST., NW	3/17/2003
5106	2	16TH ST. AND V ST., NW	3/17/2003
3227	1	4TH ST. AND LINCOLN RD., NE	3/18/2003
3228	1	FRANKLIN ST. AND 4TH ST., NE	3/18/2003
5086	2	16TH ST. AND CRESCENT PL., NW	3/18/2003
5088	2	16th ST. AND EUCLID ST., NW	3/18/2003
5091	2	16TH ST. HARVARD ST. & COLUMBIA RD., NW	3/18/2003
3245	1	4TH ST. AND BRYANT ST., NE	3/19/2003
3248	1	SOUTH DAKOTA AVE. AND 33RD PL., NE	3/19/2003
3255	1	4TH ST. AND DOUGLAS ST., NE	3/19/2003
5075	1	15TH ST. AND 16TH ST. & IRVING ST., NW	3/19/2003
5096	2	16th ST. AND LAMONT ST., NW	3/19/2003
3251	1	MT OLIVET RD. AND TRINIDAD AVE., NE	3/21/2003
5082	2	16th ST. AND ALLISON ST., NW	3/21/2003
5083	2	16th ST. AND ARKANSAS AVE., SHEPHERD ST., NW	3/21/2003
5087	2	16th ST. AND DECATUR ST., NW	3/21/2003
5100	2	16th ST. AND OAK ST., NW	3/21/2003
5105	2	16TH ST. AND UPSHURT ST., NW	3/21/2003
5085	2	16th ST. AND COLORADO AVE., NW	3/22/2003
5098	2	16th ST. AND MONROE ST., NW	3/22/2003
5099	2	16th ST. AND NEWTON ST., NW	3/22/2003
5101	2	16TH ST. AND PARK RD. & PINE ST., NW	3/22/2003
5104	2	16TH ST. AND SPRING RD., NW	3/22/2003
3034	1	LINCOLN RD. AND T ST., NE	3/24/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3126	1	17TH ST. AND MONTANA AVE. & BRYANT ST., NE	3/24/2003
5090	2	16th ST. AND FORT STEVENS DR., NW	3/24/2003
5095	2	16th ST. AND KENNEDY ST. & MORROW DR., NW	3/24/2003
5097	2	16th ST. AND MISSOURI AVE., NW	3/24/2003
5203	2	16TH ST. AND MONTAGUE ST., NW	3/24/2003
5239	2	16TH ST. AND MISSOURI AVE., NW (NORTH)	3/24/2003
3093	1	10TH ST. AND OTIS ST. & BUNKER HILL DRD. NE	3/25/2003
5081	2	16th ST. AND ALASKA AVE., NW	3/25/2003
5084	2	16TH ST. AND ASPEN ST. & SHERRIL DR., NW	3/25/2003
5103	2	16TH ST. AND SHERIDAN ST., NW	3/25/2003
5107	2	16TH ST. AND VAN BUREN ST., NW	3/25/2003
5108	2	16TH ST. AND WALTER REED ENT, NW	3/25/2003
1049	2	16TH ST. AND CONSTITUTION AVE., NW	3/26/2003

3100	1	12TH ST. AND H ST., NE	3/26/2003
3106	1	13TH ST. AND MARYLAND AVE., NE	3/26/2003
5102	2	16TH ST. AND PORTAL DR., NW	3/26/2003
2053	2	7TH ST. AND D ST., NW	3/27/2003
2054	2	7TH ST. AND E ST., NW	3/27/2003
2055	2	7TH ST. AND F ST., NW	3/27/2003
2060	2	7TH ST. AND INDIANA AVE., NW	3/27/2003
3167	1	MONROE ST. AND 9TH ST., NE	3/27/2003
3236	1	MONROE ST. AND 7TH ST., NE	3/27/2003
2057	2	7TH ST. AND G ST., NW	3/28/2003
2058	2	7TH ST. AND H ST., NW	3/28/2003
2059	2	7TH ST. AND I ST., NW	3/28/2003
2061	2	7TH ST. AND K ST. AND MASS AVE., NW	3/28/2003
3022	2	7TH ST. AND O ST., NW	3/28/2003
3023	2	7TH ST. AND P ST., NW	3/31/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3024	2	7TH ST. AND Q ST., NW	3/31/2003
3025	2	7TH ST. AND R ST. AND RHODE ISLAND AVE., NW	3/31/2003
3026	2	7TH ST. AND S ST., NW	3/31/2003
3168	1	MONROE ST. AND 10TH ST., NE	3/31/2003
3235	1	MICHIGAN AVE. AND MONROE ST., NE	3/31/2003
3169	1	MONROE ST. AND 12TH ST., NE	4/1/2003
5121	2	GEORGIA AVE. & COLUMBIA RD. & HOBART PL., NW	4/1/2003
5124	2	GEORGIA AVE. & EASTERN AVE. & BLAIR RD., NW	4/1/2003
5126	2	GEORGIA AVE. & EUCLID ST., NW	4/1/2003
5130	2	GEORGIA AVE. & HARVARD ST., NW	4/1/2003
5136	2	GEORGIA AVE. & KENYON ST., NW	4/1/2003
5140	2	GEORGIA AVE. & PARK RD., NW	4/1/2003
3170	1	MONROE ST. AND 13TH ST., NE	4/2/2003
3171	1	MONROE ST. AND 14TH ST., NE	4/2/2003
5011	2	GEORGIA AVE. AND QUINCY ST., NW	4/2/2003
5139	2	GEORGIA AVE. & N. HAMP. AVE. & ROCK CR CH RD., NW	4/2/2003
5144	2	GEORGIA AVE. AND RANDOLPH ST., NW	4/2/2003
5146	2	GEORGIA AVE. AND V ST., NW	4/2/2003
3172	1	MONROE ST. AND 18TH ST., NE	4/3/2003
3173	1	MONROE ST. AND 20TH ST., NE	4/3/2003
5131	2	GEORGIA AVE. & HOWARD PL., NW	4/3/2003
5134	2	GEORGIA AVE. & KANSAS AVE., UPSHUR, 9TH ST., NW	4/3/2003
5246	2	GEORGIA AVE. AND BARRY PL., NW	4/3/2003
3232	1	MICHIGAN AVE. AND 7TH ST., NE	4/4/2003
3234	1	MICHIGAN AVE. AND IRVING ST., NE	4/4/2003

5119	2	GEORGIA AVE. & BUCHANAN ST., NW	4/4/2003
5128	2	GEORGIA AVE. & GALLATIN ST., NW	4/4/2003
5148	2	GEORGIA AVE. & W ST., NW	4/4/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3216	1	TENNESSEE AVE. & C ST., NE	4/10/2003
5132	2	GEORGIA AVE. & INGRAHAM ST., NW	4/10/2003
5135	2	GEORGIA AVE. & KENNEDY ST., NW	4/10/2003
5137	2	GEORGIA AVE. & MADISON ST., NW	4/10/2003
5141	2	GEORGIA AVE. AND PEABODY ST., NW	4/10/2003
5145	2	GEORGIA AVE. AND RUTTENHOUSE ST., NW	4/10/2003
1059	1	16TH ST. AND SCOTT CIRCLE, NW	4/12/2003
3217	1	26TH ST. & BLADENSBURG RD., NE	4/14/2003
5120	2	GEORGIA AVE. & BUTTERNUT ST. & W R HOSP., NW	4/14/2003
5142	2	GEORGIA AVE. AND PINEY BRANCH RD., NW	4/14/2003
5147	2	GEORGIA AVE. AND VAN BURENT ST., NW	4/14/2003
5237	2	GEORGIA AVE. AND ASPEN ST., NW	4/14/2003
5244	1	TAYLOR ST. AND HAWAII AVE., NE	4/14/2003
2066	2	7TH ST. AND PENN AVE., NW	4/15/2003
5122	2	GEORGIA AVE. & DAHILA ST., NW	4/15/2003
5123	2	GEORGIA AVE. & DECTUR ST., NW	4/15/2003
5125	2	GEORGIA AVE. & ELDER ST., NW	4/15/2003
5129	2	GEORGIA AVE. & GERANIUM ST., NW	4/15/2003
5205	1	TAYLOR ST. AND HAREWOOD RD., NE	4/15/2003
1208	2	7TH ST. AND INDEPENDENCE AVE., SW	4/16/2003
2052	2	7TH ST. AND CONSTITUTION AVE., NW	4/16/2003
3107	1	13TH ST. AND VARNUM ST., NE	4/16/2003
3218	1	E. CAPITOL ST. & 14TH ST	4/16/2003
1009	2	14TH ST. AND FEDERAL TRIANGLE BLDG. NORTH	4/17/2003
1010	2	14TH ST. AND LOWER E ST., NW	4/17/2003
1223	2	14TH ST. AND INDEPENDENCE AVE., SW	4/17/2003
3133	1	21ST ST. AND C ST., NE	4/17/2003
1012	2	14TH ST. AND F ST., NW	4/19/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1014	2	14TH ST. AND H ST., NW	4/19/2003
1027	1	14TH ST. AND THOMAS CIRCLE, NW	4/19/2003
2056	2	7TH ST. AND FLORIDA AND GEORGIA AVE., NW	4/19/2003
1017	1	14TH ST. AND L ST., NW	4/21/2003
1019	1	14TH ST. AND N ST., NW	4/21/2003
1021	1	14TH ST. AND P ST., NW	4/21/2003
1024	1	14TH ST. AND RHODE ISLAND AVE., NW	4/21/2003
3127	1	18TH ST. AND C ST., NE	4/21/2003

3130	1	19TH ST. AND C ST., NE	4/21/2003
1025	1	14TH ST. AND S ST., NW	4/22/2003
1026	1	14TH ST. AND T ST., NW	4/22/2003
3111	1	14TH ST. AND MARYLAND AVE., NE	4/22/2003
3117	1	17TH ST. AND BLADENS RD. & MT. OLIVET RD., NE	4/22/2003
5059	1	14TH ST. AND FLORIDA AVE., NW	4/22/2003
5073	1	14TH ST. AND V ST., NW	4/22/2003
5074	1	14TH ST. AND W ST., NW	4/22/2003
1008	2	14TH ST. AND CONSTITUTION AVE., NW	4/23/2003
3119	1	17TH ST. AND CONSTITUTION AVE., NE	4/23/2003
3131	1	19TH ST. AND E ST., NE	4/23/2003
5054	1	14TH ST. AND CLIFTON ST., NW	4/23/2003
5057	1	14TH ST. AND EUCLID ST., MW	4/23/2003
3122	1	17TH ST. AND I ST. & HECHINGER MALL, NE	4/24/2003
3123	1	17TH ST L ST., NE	4/24/2003
5058	1	14TH ST. AND FIRMONT ST., NW	4/24/2003
5061	1	14TH ST. AND GIRARD ST., NW	4/24/2003
3112	1	15TH ST. AND C ST., NE	4/25/2003
3120	1	17TH ST. AND D ST., NE	4/25/2003
5055	1	14TH ST. AND COLUMBIA RD., NW	4/25/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
5062	1	14TH ST. AND HARVARD ST., NW	4/25/2003
5070	2	14TH ST. AND MONROE ST., NW	4/25/2003
3105	1	13TH ST. AND H ST., NE	4/28/2003
3110	1	14TH ST. AND H ST., NE	4/28/2003
5056	1	14TH ST. AND DECATUR ST., NW	4/28/2003
5068	1	14TH ST. AND MERIDIAN PL., NW	4/28/2003
5071	1	14TH ST. AND SPRING RD., NW	4/28/2003
5072	1	14TH ST. AND UPSHURT ST. NW	4/28/2003
3114	1	15TH ST. AND H ST. 7 BENNING RD., NE	4/29/2003
5010	2	GEORGIA AVE. AND SHEPHERD ST., NW	4/29/2003
5060	1	14TH ST. AND GALLATIN ST., NW	4/29/2003
5065	1	14TH ST. AND KENNEDY ST. & COLORADO AVE., NW	4/29/2003
5069	1	14TH ST. AND MISSOURI AVE., NW	4/29/2003
3094	1	11TH ST. AND C ST., NE	4/30/2003
3101	1	12TH ST. AND VARNUMST., NE	4/30/2003
5118	2	GEORGIA AVE. & AVE. & BRYANT ST., NW	4/30/2003
5127	2	GEORGIA AVE. & FAIRMONT ST., NW	4/30/2003
3081	1	8TH ST. AND C ST., NE	5/1/2003
3086	1	9TH ST. AND C ST., NE	5/1/2003
5133	2	GEORGIA AVE. & IRVING ST., NW	5/1/2003

5143	2	GEORGIA AVE. AND PRINCETON PL., NW	5/1/2003
3103	1	13TH ST. AND CONSTITUTION AVE & TENN AVE., NE	5/2/2003
3104	1	13TH ST. AND FLORIDA AVE., NE	5/2/2003
5064	1	14TH ST. AND KALMIA RD., NW	5/2/2003
5138	2	GEORGIA AVE. & MISSOURI AVE., NW	5/2/2003
3083	1	8TH ST. AND H ST., NE	5/5/2003
3096	1	11TH ST. AND H ST., NE	5/5/2003
3099	1	12TH ST. AND FLA AVE. & K ST. & MONT. AVE., NE	5/5/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
5117	2	GEORGIA AVE. & ALASKA AVE. & KALMIA RD., NW	5/5/2003
3075	1	6TH ST. AND H ST., NE	5/6/2003
3076	1	6TH ST. AND K ST., NE	5/6/2003
3079	1	7TH ST. AND H ST., NE	5/6/2003
1011	2	14TH ST. AND UPPER E ST. AND PENN AVE., NW	5/7/2003
1015	2	14TH ST. AND I ST., NW	5/7/2003
1022	1	14TH ST. AND Q ST., NW	5/7/2003
3071	1	6TH ST. AND D ST., NE	5/7/2003
3072	1	6TH ST. AND E ST., NE	5/7/2003
1016	2	14TH ST. AND K ST., NW	5/8/2003
1023	1	14TH ST. AND R ST., NW	5/8/2003
3080	1	7TH ST. AND K ST., NE	5/8/2003
3091	1	9TH ST. AND T ST., NE	5/8/2003
3073	1	6TH ST. AND F ST., NE	5/9/2003
3077	1	6TH ST. AND M ST., NE	5/9/2003
1032	1	15TH ST. AND F ST., NW	5/12/2003
1034	2	15TH ST. AND H ST., NW	5/12/2003
1035	2	15TH ST. AND I ST., NW	5/12/2003
5053	1	14TH ST. AND ARKANSAS AVE. & VARNUM ST., NW	5/12/2003
5067	1	14TH ST. AND KENYON ST. & PARK RD., NW	5/12/2003
1036	2	15TH ST. AND I ST. AND VERMONT AVE., NW	5/13/2003
1041	1	15TH ST. AND MASS AVE., NW	5/13/2003
1042	1	15TH ST. AND P ST., NW	5/13/2003
1045	1	15TH ST. AND RHODE ISLAND AVE., NW	5/13/2003
2062	2	7TH ST. AND L ST., NW	5/13/2003
3068	1	5TH ST. AND K ST., NE	5/13/2003
1039	1	15TH ST. AND L ST., NW	5/14/2003
1043	1	15TH ST. AND Q ST., NW	5/14/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1044	1	15TH ST. AND R ST., NW	5/14/2003
1046	1	15TH ST. AND S ST., NW	5/14/2003
3057	1	4TH ST. AND D ST., NE	5/14/2003

3058	1	4TH ST. AND E ST., NE	5/14/2003
1047	1	15TH ST. AND T ST., NW	5/15/2003
1048	1	15TH ST. AND U ST., NW	5/15/2003
3059	1	4TH ST. AND F ST., NE	5/15/2003
3061	1	4TH ST. AND H ST., NE	5/15/2003
5077	1	15th ST. AND EUCLID ST., NW	5/15/2003
5079	1	15th ST. AND N. HAMP. AVE. & FLA AVE. & W ST., NW	5/15/2003
5080	1	15th ST. AND V ST., NW	5/15/2003
1062	2	16TH ST. AND EOB DR., NW	5/17/2003
1067	2	17TH ST. AND E ST., NW	5/17/2003
1068	2	17TH ST. AND F ST., NW	5/17/2003
1071	2	17TH ST. AND N OF INDEPENDENCE AVE., NW	5/17/2003
1079	2	17TH ST. AND PENNSYLVANIA AVE., NW	5/17/2003
1065	2	17TH ST. AND CONNECTICUT AVE., NW	5/19/2003
1076	1	17TH ST. AND NEW HAMPSHIRE AVE, SWANN ST., NW	5/19/2003
1078	1	17TH ST. AND P ST., NW	5/19/2003
1082	1	17TH ST. AND RHODE ISLAND AVE., NW	5/19/2003
3048	1	2ND ST. AND K ST., NE	5/19/2003
3053	1	3RD ST. AND K ST., NE	5/19/2003
1080	1	17TH ST. AND Q ST., NW	5/20/2003
1081	1	17TH ST. AND R ST., NW	5/20/2003
1083	1	17TH ST. AND U ST., NW	5/20/2003
1098	2	18TH ST. AND PENN AVE., NW	5/20/2003
3046	1	2ND ST. AND C ST., NE	5/20/2003
3050	1	2ND ST. AND MASS AVE., NE	5/20/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2161	1	1ST ST. AND K ST., NE	5/21/2003
2162	1	1ST ST. AND M ST., NE	5/21/2003
1089	1	18TH ST. AND G ST., NW	5/22/2003
1097	1	18TH ST. AND P ST., NW	5/22/2003
1100	1	18TH ST. AND R. ST., NW	5/22/2003
2158	1	1ST ST. AND C ST., NE	5/22/2003
2160	1	1ST ST. AND D ST., NE	5/22/2003
1236	1	18TH ST. AND S ST., NW	5/27/2003
1102	1	18TH ST. AND VIRGINIA AVE., NW	5/28/2003
3063	1	4TH ST. AND M ST., NE	5/28/2003
1085	2	18TH ST. AND CONSTITUTION AVE., NW	5/29/2003
1086	2	18TH ST. AND E ST., NW (SOUTH)	5/29/2003
1088	1	18TH ST. AND F ST., NW	5/29/2003
1233	1	18TH ST. AND CALIFORNIA ST., NW	5/29/2003
1234	1	18TH ST. AND KALARAMA RD., NW	5/29/2003

1103	1	19TH ST. AND C ST. ANC VIRGINIA AVE., NW	5/30/2003
1104	2	19TH ST. AND CONSTITUTION AVE., NW	5/30/2003
1105	2	19TH ST. AND E ST. (SOUTH), NW	5/30/2003
1106	2	19TH ST. AND E ST. (NORTH), NW	5/30/2003
1107	1	19TH ST. AND F ST., NW	5/30/2003
3011	1	4TH ST. AND NEW JERSEY AVE. AND P ST., NW	6/1/2003
1110	2	19TH ST. AND I ST., NW	6/2/2003
1118	2	20TH ST. AND E ST (SOUTH), NW	6/2/2003
1119	2	20TH ST. AND E ST (NORTH), NW	6/2/2003
1120	1	20TH ST. AND F ST., NW	6/2/2003
1121	1	20TH ST. AND G ST., NW	6/2/2003
1108	1	19TH ST. AND FLORIDA AVE. AND T ST., NW	6/3/2003
1115	1	19TH ST. AND R ST., NW	6/3/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1127	1	20TH ST. AND NEW HAMPSHIRE AVE., NW	6/3/2003
1128	1	20TH ST. AND P ST., NW	6/3/2003
1130	2	20TH ST. AND Q ST. AND CONNECTICUT AVE., NW	6/5/2003
1132	1	21ST ST. AND C ST., NW	6/5/2003
1145	2	21ST ST. AND VIRGINIA AVE., NW	6/5/2003
1134	1	21ST ST. AND E ST., NW (NORTH)	6/6/2003
1135	1	21ST ST. AND G ST., NW	6/6/2003
1136	1	21ST ST. AND H ST., NW	6/6/2003
1141	1	21ST ST. AND MASS AVE., NW	6/6/2003
1116	2	20TH ST. AND CONN AVE. AND R ST., NW	6/9/2003
1142	1	21ST ST. AND NEW HAMPSHIRE AVE., NW	6/9/2003
1143	1	21ST ST. AND P ST., NW	6/9/2003
1153	1	22ND ST., Q ST. AND MASS AVE., FLA AVE., NW	6/9/2003
1148	2	22ND ST. AND K ST. AND 22ND ST., PENN AVE., NW	6/10/2003
1149	1	22ND ST. AND L ST. AND NEW HAMPSHIRE AVE., NW	6/10/2003
1150	1	22ND ST. AND M ST., NW	6/10/2003
1151	1	22ND ST. AND N ST., NW	6/10/2003
5002	1	1ST ST. AND IRVING ST., NW	6/10/2003
1154	1	23RD ST. AND C ST., NW	6/11/2003
1156	1	23RD ST. AND E ST., DRIVEWAY TO NAVY HOSPITAL, NW	6/11/2003
1165	1	23RD ST. AND VIRGINIA AVE. AND F ST., NW	6/11/2003
2010	1	1ST TERRACE AND K ST., NW	6/11/2003
3004	1	1ST ST. AND P ST., NW	6/11/2003
3005	1	1ST ST. AND Q ST., NW	6/11/2003
1157	1	23RD ST. AND G ST., NW	6/12/2003
1158	1	23RD ST. AND H ST., NW	6/12/2003
1159	1	23RD ST. AND I ST., NW	6/12/2003

3027	1	NEW JERSEY AVE AVE. AND Q ST., NW	6/12/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3253	1	NEW JERSEY AVE. AND N ST., NE	6/12/2003
1160	1	23RD ST. AND L ST., NW	6/13/2003
1161	1	23RD ST. AND M ST. (FIREHOUSE), NW	6/13/2003
1162	1	23RD ST. AND N ST., NW	6/13/2003
3028	1	NEW JERSEY AVE.&R ST., NW	6/13/2003
3239	1	4TH ST. AND BRYANT ST., NW	6/13/2003
5001	1	1ST ST. AND BRYANT ST., NW	6/13/2003
1055	2	16TH ST. AND P ST., NW	6/14/2003
1164	1	23RD ST. AND Q ST. AND WATERSIDE DR., NW	6/16/2003
1166	2	24TH ST. AND K ST. AND PENN AVE., NW	6/16/2003
1169	2	25TH ST. AND K ST., NW	6/16/2003
1173	2	26TH ST. AND PENNSYLVANIA AVE., NW	6/16/2003
1237	2	27TH ST. AND K ST., NW	6/16/2003
1252	2	K ST., NW PED CROSSING @ 26TH ST.	6/16/2003
3014	1	4TH ST. AND T ST., NW	6/16/2003
3240	1	4TH ST. & HOWARD UNIV. ENT. & MCMILLAN DR., NW	6/16/2003
2030	2	4TH ST. AND PENN AVE., NW	6/17/2003
2080	2	9TH ST. AND PENN AVE., NW	6/17/2003
2086	2	10TH ST. AND D ST. AND PENN AVE., NW	6/17/2003
2127	2	12TH ST. AND PENN AVE., NW	6/17/2003
5177	1	WARDER ST. AND HOBART PL., NW	6/17/2003
5178	1	WARDER ST. AND IRVING ST., NW	6/17/2003
1007	2	13TH ST. 1/2 ST. AND LOWER E ST. , NW	6/18/2003
1013	2	14TH ST. AND G ST., NW	6/18/2003
1037	2	15TH ST. AND K ST., NW (WEST)	6/18/2003
5176	1	WARDER ST. AND COLUMBIA RD., NW	6/18/2003
5179	1	WARDER ST. AND KENYON ST., NW	6/18/2003
1004	2	EB INDEPENDENCE AVE & WEST TIDAL BASIN RD., SW	6/19/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1050	2	16TH ST. AND H ST., NW	6/19/2003
1090	2	18TH ST. AND H ST., NW	6/19/2003
1188	2	EB INDEPENDENCE AVE & DANIEL FRENCH DRIVE, SW	6/19/2003
1240	2	WB INDEPENDENCE AVE. & WB MAINE AVE., SW	6/19/2003
1250	2	EB INDEPENDENCE AVE & EAST TIDAL BASIN RD., SW	6/19/2003
1227	2	25TH ST. AND INDEPENDENCE AVE.,SW	6/20/2003
1248	2	WB INDEPENDENCE AVE. AND WB MAINE AVE., SW	6/20/2003
5018	1	5TH ST., PARK PL., ROCK CRK CH RD., QUINCY, NW	6/20/2003
5180	1	WARDER ST. AND OTIS PL., NW	6/20/2003
1213	2	17TH ST. AND WOUTH MALL PED CROSSING, SW	6/23/2003

1255	2	17TH ST. SB AND WB INDEPENDENCE AVE., SW	6/23/2003
2008	2	1ST ST. AND LOUISIANA AVE., NW	6/23/2003
5160	1	PARK PL. AND KENYON ST., NW	6/23/2003
5161	1	PARK PL. AND IRVING ST., NW	6/23/2003
2073	2	LOUISIANA AVE. AND C ST., NW	6/24/2003
2154	2	NEW JERSEY AVE. AND LOUISIANA AVE., NW	6/24/2003
2213	2	N. CAPITOL. AND D ST. AND LOUISIANA AVE.	6/24/2003
5020	1	5TH ST. AND UPSHUR ST., NW	6/24/2003
5158	1	NEW HAMPSHIRE AVE. AND UPSHUR ST., NW	6/24/2003
2173	2	1ST ST. AND INDEPENDENCE AVE., SW	6/25/2003
2204	2	CANAL ST. AND INDEPENDENCE AVE., SW	6/25/2003
2212	2	NEW JERSEY AVE. AND INDEPENDENCE AVE., SE	6/25/2003
2231	2	LOUISIANA AVE. AND MASS AVE., NE	6/25/2003
5013	1	5TH ST. AND GALLATIN ST., NW	6/25/2003
5015	1	5TH ST. AND KANSAS AVE., NW	6/25/2003
1201	2	6TH ST. AND INDEPENDENCE AVE., SW	6/26/2003
2222	1	S. CAPITOL AND G ST. PARKING LOT, SW	6/26/2003
2226	2	S. CAPITOL ST. AND 1 ST	6/26/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3084	1	8TH ST. AND K ST. & W. VIRGINIA AVE., NE	6/26/2003
3085	1	8TH ST. AND MARYLAND AVE., NE	6/26/2003
1177	2	CONN AVE. AND H ST. AND JACKSON PL., NW	6/30/2003
6006	2	27TH ST. AND MILITARY RD., NW	7/1/2003
6017	2	31ST ST. AND MILITARY RD., NW	7/1/2003
6019	2	32ND ST. AND MILITARY RD., NW	7/1/2003
6111	2	MILITARY RD. AND OREGON & GLOVER, NW	7/1/2003
6250	2	30TH ST. AND MILITARY RD., NW	7/1/2003
3089	1	9TH ST. AND MARYLAND AVE. & e ST., NE	7/2/2003
6110	2	MILITARY RD. AND NEVADA AVE., NW	7/2/2003
5004	1	3RD ST. AND JEFFERSON ST. & KANSAS AVE., NW	7/3/2003
6133	2	WISCONSIN AVE. AND DAVENPORT ST., NW	7/3/2003
6156	2	TENLEY CIRCLE, NW	7/3/2003
3097	1	11ST. AND MARYLAND AVE., NE	7/7/2003
4061	1	E. CAPITOL ST. & 2ND ST.	7/7/2003
4062	1	E. CAPITOL ST. & 3RD ST.	7/7/2003
4063	1	E. CAPITOL ST. & 4TH ST.	7/7/2003
4064	1	E. CAPITOL ST & 6TH ST.	7/7/2003
4052	1	17TH ST. & INDEPENDENCE AVE., SE	7/8/2003
4053	1	17TH ST. & MASS AVE., SE	7/8/2003
4065	1	E. CAPITOL ST. & 8TH ST	7/8/2003
4066	1	E. CAPITOL ST. & 9TH ST.	7/8/2003

4219	1	E. CAPITOL ST. AND 11TH ST.	7/8/2003
4221	1	E. CAPITOL ST. & 11TH ST. & N. CAROLINA AVE., SE	7/8/2003
4222	1	E. CAPITOL ST. & 11TH ST. & MASS AVE., NE	7/8/2003
6001	1	18TH ST. AND COLUMBIA RD., NW	7/9/2003
3221	1	E. CAPITOL ST. & 15TH ST	7/10/2003
3222	1	E. CAPITOL ST. & 15TH ST	7/10/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3223	1	E. CAPITOL ST. & 17TH ST	7/10/2003
3224	1	E. CAPITOL ST. & 19TH ST	7/10/2003
4220	1	E. CAPITOL ST. AND 13TH ST.	7/10/2003
4172	1	EAST CAPITOL ST. AND 49TH ST.,	7/11/2003
4173	1	EAST CAPITOL ST. AND 50TH ST.	7/11/2003
4174	1	EAST CAPITOL ST. AND 53RD ST	7/11/2003
4175	1	EAST CAPITOL ST. AND 55TH ST.	7/11/2003
4176	1	EAST CAPITOL ST. AND 56TH ST.	7/11/2003
4181	1	EAST CAPITOL ST. AND STODDER PL.	7/11/2003
2224	2	S. CAPITOL ST. AND CANAL ST. AND E ST.	7/13/2003
4177	1	EAST CAPITOL ST. AND 58TH ST.	7/14/2003
3136	1	BENNING RD. AND 26TH ST., NE	7/16/2003
4067	1	BENNING RD., AND 34TH ST., NE	7/16/2003
4068	1	BENNING RD. AND 36TH ST. EAST, NE	7/16/2003
4069	1	BENNING RD. AND 42ND ST., NE	7/16/2003
4070	1	BENNING RD. AND 44TH ST., NE	7/16/2003
4200	1	BENNING RD. AND 36TH WEST ST. WEST, NE	7/16/2003
4227	1	BENNING RD. AND C ST., SE (NORTH)	7/16/2003
4109	1	BENNING RD. AND C ST., SE	7/17/2003
4110	1	BENNING RD. AND F ST., SE	7/17/2003
4111	1	BENNING RD. AND G ST., SE	7/17/2003
4112	1	BENNING RD. AND H ST., SE	7/17/2003
4233	1	BENNING RD. AND E. ST., SE	7/17/2003
4234	1	BENNING RD. AND 46TH ST., SE	7/17/2003
4081	1	MINNESOTA AVE. & DIX., NE	7/18/2003
4083	1	MINNESOTA AVE. & GANTS., NE	7/18/2003
4134	1	MINNESOTA AVE. AND B ST. AND 36TH ST., SE	7/18/2003
4135	1	MINNESOTA AVE. AND ELY PL., SE	7/18/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4136	1	MINNESOTA AVE. AND NELSON PL., SE	7/18/2003
4137	1	MINNESOTA AVE. AND RANDLE CIRCLE, SE	7/18/2003
4120	1	GOOD HOPE RD. AND NAYLOR RD., SE	7/19/2003
4132	1	MINNESOTA AVE. AND 22ND ST. & NAYLOR RD., SE	7/19/2003
4133	1	MINNESOTA AVE. AND 23RD ST., SE	7/19/2003

4229	1	16TH ST. & MINNESOTA AVE., SE	7/19/2003
4055	1	19TH ST. & INDEPENDENCE AVE., SE	7/21/2003
4056	1	19TH ST. & MASS AVE., SE	7/21/2003
4115	1	GOOD HOPE RD. AND 14TH ST., SE	7/21/2003
4116	1	GOOD HOPE RD. AND 16TH ST., SE	7/21/2003
4225	1	GOOD HOPE RD. AND MARBURY PLAZA APTS., SE	7/21/2003
4033	1	10TH ST. & NO. CAROLINA AVE., SE	7/22/2003
4034	1	11TH ST. & C. ST., SE	7/22/2003
4114	1	GOOD HOPE RD. AND 13TH ST., SE	7/22/2003
4131	1	ML KING AVE. AND W ST., SE	7/22/2003
4224	1	M.L. KING AVE. AND TALBERT ST., SE	7/22/2003
4036	1	11TH ST. & G ST., SE	7/23/2003
4044	1	13TH ST. & INDEPEN AVE & KENTUCKY AVE., SE	7/23/2003
4123	1	ML KING AVE. AND CHICAGO ST. & MORRIS RD., SE	7/23/2003
4127	1	ML AVE. AND ST. ELIZABETH GATE #1, SE	7/23/2003
4128	1	ML KING AVE. AND ST ELIZABETH GATE # 4, SE	7/23/2003
4129	1	ML KING AVE. AND SUMMER RD. & STATON RD.	7/23/2003
4047	1	14TH ST. D ST. & KENTUCKY AVE., SE	7/24/2003
4050	1	15TH ST. & G ST. & KENTUCKY, POTOMAC AVE., SE	7/24/2003
4121	1	ML KING AVE. AND ALABAMA AVE. & 5TH ST., SE	7/24/2003
4130	1	ML KING AVE. AND TRETON & SAVANNAH, SE	7/24/2003
4106	1	ATLANTIC ST. AND 1ST ST., SE	7/25/2003
4107	1	ATLANTIC ST. AND 4TH ST., SE	7/25/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4182	1	SOUTH CAPITOL ST. AND 1ST ST. & GALVESTON ST.	7/25/2003
4185	1	SOUTH CAPITOL ST. AND ELMIRA ST.	7/25/2003
4188	1	SOUTH CAPITOL ST. AND LIVINGSTON RD.	7/25/2003
3108	1	14TH ST. AND C ST., NE	7/28/2003
4046	1	14TH ST. & A5TH ST., MASS, INDEP & SC AVE., SE	7/28/2003
4043	1	13TH ST. & I ST. & POTOMAC AVE, SE	7/29/2003
4184	1	SOUTH CAPITOL ST. AND CHESAPEAKE ST.	7/29/2003
4186	1	SOUTH CAPITOL ST. AND FIRTH STERLING AVE.	7/29/2003
4249	1	SOUTH CAPITOL AND PORTLAND AVE.	7/29/2003
2228	1	S. CAPITOL ST. AND M ST.	7/31/2003
4084	1	SHERIFF RD. AND 45TH ST. & 45TH PL., NE	7/31/2003
4085	1	SHERIFF RD. AND 49TH ST., NE	7/31/2003
4090	1	ALABAMA AVE. AND 30TH ST., SE	8/1/2003
4205	1	SOUTHERN AVE. & S. VALLEY & WMATA DWY.	8/1/2003
4206	1	SOUTHERN AVE. & WMATA ACCESS RD., SE	8/1/2003
4153	1	SOUTHERN AVE. AND CHESAPEAKE ST., SE	8/2/2003
4156	1	SOUTHERN AVE. AND OWENS RD. & BONINI RD., SE	8/2/2003

4192	1	13TH ST. AND SOUTHERN AVE., SE	8/2/2003
4091	1	ALABAMA AVE. AND 36TH ST. & SUITLAND RD., SE	8/4/2003
4093	1	ALABAMA AVE. AND AINGER PL., SE	8/4/2003
4097	1	ALABAMA AVE AND IRVING ST. & JASPER ST., SE	8/4/2003
4098	1	ALABAMA AVE . AND MASSACHUSETTS., SE	8/4/2003
4099	1	ALABAMA AVE. AND NAYLOR RD., SE	8/4/2003
4232	1	36TH PLACE AND ALALABAMA AVE., SE	8/4/2003
4087	1	ALABAMA AVE. AND 11TH PL., & GATE #5, SE	8/6/2003
4095	1	ALABAMA AVE. AND CONGRESS ST., SE	8/6/2003
4101	1	ALABAMA AVE. AND RANDLE PL., SE	8/6/2003
4102	1	ALAMABA AVE. AND STANTON RD., SE	8/6/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4104	1	ALABAMA AVE. AND STATON TERRACE & 21ST, SE	8/6/2003
4204	1	13TH ST. & ALABAMA AVE., SE	8/6/2003
4138	1	MISSISSIPPI AVE. AND 4TH ST., SE	8/7/2003
4164	1	WHEELER RD. AND MISSISSIPPI AVE., SE	8/7/2003
4166	1	WHEELER RD. AND VALLEY AVE., SE	8/7/2003
4167	1	WHEELER RD. AND WAHLER PL., SE	8/7/2003
4223	1	7TH ST. AND ALABAMA AVE., SE	8/7/2003
4080	1	EASTERN AVE. AND KENLIWORTH AVE. NE	8/8/2003
4148	1	RIDGE RD. AND B ST. AND 37TH ST	8/8/2003
4160	1	TEXAS AVE. AND C ST., SE	8/8/2003
4161	1	TEXAS AVE. AND RIDGE RD., SE	8/8/2003
4002	1	EASTERN AVE., DIX ST. & 63RD ST., NE	8/9/2003
4073	1	NH BURROUGHS AVE. & 44TH ST. & HUNT PL., NE	8/9/2003
4074	1	NH BORROUGHS AVE. & 49TH ST., NE	8/9/2003
4075	1	NH BURROUGHS AVE. & 55TH ST., NE	8/9/2003
4076	1	NH BURROUGHS AVE. AND 58TH ST., NE	8/9/2003
4089	1	ALABAMA AVE. AND 25TH ST., SE	8/10/2003
4155		SOUTHERN AVE. AND MISSISSIPPI AVE., SE	8/10/2003
4149	1	RIDGE RD. AND BOWEN RD. & 44TH PL., SE	8/11/2003
4162	1	VALLEY AVE. AND 4TH ST. & XENIA ST.	8/11/2003
4163	1	WHEELER RD. AND BARNABY ST., SE	8/11/2003
4004	1	2ND ST. & D ST. (NORTH). SE	8/12/2003
4006	1	3RD ST. & D ST. & N. CAROL AVE., SE	8/12/2003
4003	1	1ST ST. & N. CAROL AVE. & E ST. & NJ AVE., SE	8/13/2003
4007	1	3RD ST. & E. ST., SE	8/13/2003
4010	1	4TH ST. & E. ST., SE	8/13/2003
4019	1	6TH ST. & SO. CAROLINA AVE. & E. ST., SE	8/13/2003
1178	2	CONNECTICUT AVE. AND L ST., NW	8/14/2003
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>

2099	1	10TH ST. AND RHODE ISLAND AVE. AND Q ST., NW	8/14/2003
3036	1	RHODE IS AVE. AND V ST. AND SUMMIT PL.,NE	8/14/2003
5183	1	NEW HAMPSHIRE AVE. AND EASTERN AVE., NW	8/14/2003
5184	1	NEW HAMPSHIRE AVE. AND PEABODY ST., NE	8/14/2003
5185	1	NEW HAMP AVE. & RITTENHOUSE & 3RRD ST., NW	8/14/2003
2098	1	10TH ST. AND R ST., NW	8/30/2003
6098	1	MACARTHUR BLVD AND Q ST., NW	10/13/2003
6130	2	WISCONSIN AVE. , ALBEMARLE & SEARS CROSSING	10/28/2003
6141	2	WISCONSIN AVE. AND JENNIFER ST., NW	12/12/2003
6077	2	CONNECTICUT AVE. AND ORDWAY ST., NW	12/21/2003
6080	2	CONNECTICUT AVE. AND SEDGEWICK ST., NW	12/21/2003
3001	1	1ST ST. AND M ST., NE	2/27/2004
4118	1	GOOD HOPERD. AND ML KING AVE., SE	3/3/2004
4124	1	ML KING AVE. AND HOWARD RD. & SHERDAN RD. SE	3/5/2004
4112	1	FIRTH STERLING AVE. AND HOWARD RD., SE	3/8/2004
4246	1	HOWARD RD. AND ANNACOSTA METRO STATION, SE	3/8/2004
4247	1	HOWARD RD. AND ANNACOSTIA FRWY RAMP 13,SE	3/8/2004
4121	1	HOWARD RD. AND SUITLAND PKWY RAMP B SE	3/9/2004
4158	1	STANTON RD. AND BRUCE PL., SE	3/9/2004
4157	1	SOUTHERN AVE. AND SUITLAND RD., SE	3/10/2004
4152	1	SOUTHERN AVE. AND CENTRAL AVE., SE	3/11/2004
4154	1	SOYTHERN AVE. AND MASSACHUSETTS AVE., SE	3/16/2004
4119	1	GOOD HOPE RD. AND MINNESOTA AVE.	3/17/2004
4150	1	SOUTHERN AVE. AND 23RD ST., SE	3/17/2004
4126	1	ML KING AVE. AND RANDLE PL. & RALIEGH PL., SE	3/18/2004
4108	1	ATLANTIC ST. AND LIVINGSTON & VALLEY, SE	3/19/2004
4168	1	ML KING AVE. AND CHESAPEAKE ST., SW	3/22/2004
4001	1	OVERLOOK AVE. AND ENTRANCE TO BOLLING AFB	3/23/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4169	1	OVERLOOK AVE. AND CHESAPEAKE ST., SE	3/23/2004
4190	1	SOUTH CAPITOL ST. AND SOUTHERN AVE.	3/25/2004
4187	1	S. CAPITOL ST. AND ML KING AVE. & HALLEY PL.	3/26/2004
4248	1	BENNING RD. AND SOUTHERN AVE., SE	3/29/2004
4105	1	ALABAMA AVE. AND WHEELER RD., SE	3/30/2004
4165	1	WHEELER RD. AND SOUTHERN AVE., SE	3/31/2004
4071	1	BENNING RD. AND ANACOSTIA AVE., NE	4/2/2004
4092	1	ALABAMA AVE. AND 38TH ST., SE	4/2/2004
4077	1	NH BURROUGHS AVE. & DIVISION AVE., NE	4/6/2004
4139	1	NAYLOR RD. AND 30TH ST. & GAINESVILLE ST., SE	4/6/2004
4117	1	GOOD HOPE RD. AND 25TH ST., SE	4/7/2004
4125	1	ML KING AND POTRLAND ST., SE	4/8/2004

4078	1	NH BURROUGHS AVE. & KENILWORTH AVE., NE	4/9/2004
4179	1	E. CAPITOL ST. 7 MINNESOTA AVE. & RIDGE RD.	4/9/2004
4082	1	MINNESOTA AVE. & EASTERN AVE., NE	4/12/2004
4086	1	SHERIFF RD. AND EASTERN AND DIVISIION, NE	4/15/2004
4183	1	SOUTH CAPITOL ST. AND ATLANTIC ST.	4/15/2004
4009	1	3RD ST. & VIRGINIA AVE., SE	4/16/2004
4015	1	5TH ST. & RAMP I & VIRGINIA AVE., SE	4/16/2004
4020	1	6TH ST. AND VIRGINIA AVE., SE	4/16/2004
4014	1	4TH ST. & VIRGINIA AVE. (NORTH SIDE), SE	4/19/2004
4022	1	7TH ST. & I ST 7 VIRGINA AVE., SE	4/19/2004
4023	1	7TH ST. & K ST. & VIEGINA AVE., SE	4/19/2004
4011	1	4TH ST. & INDEPENDENCE AVE., SE	4/20/2004
4030	1	9TH ST. 7 INDEPENDENCE AVE., SE	4/20/2004
4038	1	11TH ST. AND INDEPENDENCE AVE., SE	4/20/2004
4041	1	11TH ST. & SO CAROLINA AVE., SE	4/20/2004
4037	1	11TH ST. & I ST., SE	4/21/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4054	1	17TH ST. & POTOMAC AVE., SE	4/21/2004
4027	1	8TH ST. & M. ST., SE	4/22/2004
4031	1	9TH ST. & M. ST., SE	4/22/2004
4040	1	11TH ST. & RAMP N., SE	4/22/2004
4058	1	SO. CAROLINA AVE. & KENTUCKY AVE. & C ST., SE	4/23/2004
3160	1	MICHIGAN AVE. AND 12TH ST., NE	4/26/2004
4016	1	6TH ST. & INDEPENDENCE AVE., SE	4/26/2004
4021	1	7TH ST. & INDEPENDENCE AVE. & NC AVE, SE	4/26/2004
4170	1	OVERLLOK AVE. AND LABORATORY RD., SE	4/27/2004
2234	1	1ST ST. AND D ST., SE	4/28/2004
4017	1	6TH ST. & NORTH CAROLINA AVE., SE	4/28/2004
2181	1	3RD ST. AND I ST., SW	4/29/2004
2189	1	4TH ST. AND G ST., SW	4/30/2004
3056	1	4TH ST. AND CONSTRUCTION AVE., NE	5/3/2004
3067	1	5TH ST. AND FLORIDA AVE., NE	5/3/2004
2026	1	4TH ST. AND G ST., NW	5/4/2004
2194	1	4TH ST. AND N ST., SW	5/4/2004
2195	1	4TH ST. AND P ST. AND FT. MCNAIR ENTR., SW	5/4/2004
2196	1	4TH ST. AND VIRGINIA AVE., SW	5/4/2004
2193	1	4TH ST. AND M ST., SW	5/5/2004
2018	1	3RD ST. AND E ST., NW	5/7/2004
2032	1	5TH ST. AND E ST., NW	5/7/2004
2033	1	5TH ST. AND G ST., NW	5/7/2004
2034	1	5TH ST. AND H ST., NW	5/8/2004

2035	1	5TH ST. AND I ST. AND MASS AVE.,NW	5/8/2004
3051	1	3RD ST. AND D ST. AND MASS AVE., NE	5/10/2004
3054	1	3RD ST. AND MARYLAND AVE. & CONST AVE., NE	5/10/2004
2005	1	1ST ST. AND F ST. AND NEW JERSEY AVE., NW	5/11/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2006	1	1ST ST. AND H ST., NW	5/11/2004
2007	1	1ST ST. AND K ST., NW	5/11/2004
2009	1	1ST ST., MASS AVE., NEW JERSEY AVE, G ST., NW	5/11/2004
2036	1	5TH ST. AND K ST., NW	5/11/2004
2004	1	1ST ST. AND E ST., NW	5/12/2004
2025	1	4TH ST. AND E ST., NW	5/13/2004
2207	1	1ST ST. AND C ST., SE	5/13/2004
3148	1	BRENTWOOD RD. AND SARATOGA AVE., NE	5/17/2004
3147	1	BRENTWOOD RD. AND 9TH ST. AND V ST., NE	5/18/2004
4072	1	BENNING RD. AND MINNESOTA AVE. NE	5/18/2004
4079	1	NH BURROUGHS AVE. & MINNESOTA AVE., NE	5/19/2004
4151	1	SOUTHERNAVE. AND BOWEN RD. & 46TH ST., SE	5/20/2004
4180	1	EAST CAPITOL ST. AND SOUTHERN AVE.	5/20/2004
4012	1	4TH ST. & N. CAROL AVE. & SEWARD SQUARE, SE	5/21/2004
4096	1	ALABAMA AVE. AND GOO HOPE RD., SE	5/21/2004
4039	1	11TH ST. & M ST., SE	5/24/2004
5195	1	N. CAPITOL ST. AND GALLATIN ST.	5/24/2004
5005	1	3RD ST. AND KENNEDY ST., NW	5/25/2004
5016	1	5TH ST. AND KENNEDY ST., NW	5/25/2004
5017	1	5TH ST. AND MISSOURI AVE., NW	5/25/2004
5033	1	13TH ST. AND COLORADO AVE. & NCHOLSON ST., NW	5/25/2004
5048	1	13TH ST. AND PEABODY ST., NW	5/25/2004
5019	1	5TH ST. AND SHERIDAN ST., NW	5/26/2004
5031	1	13TH ST. AND ARKANSAS AVE. & DECATUR ST., NW	5/26/2004
5038	1	13TH ST. AND GALLATIN ST., NW	5/26/2004
5043	1	13TH ST. AND KENNEDY ST., NW	5/26/2004
5149	1	ILLINOIS AVE. & KENNEDY ST., NW	5/26/2004
5007	1	3RD ST. AND SHERDAN ST. & NO. DAKOTA AVE., NW.	5/28/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
5050	1	13TH ST. AND UPSHURT ST., NW	5/28/2004
5155	1	NEW HAMPSHIRE AVE. & FARRAGUT, 2 ST., NW	5/28/2004
5250	1	NEW HAMPSHIRE AVE. & GALLATIN ST., NW	5/28/2004
5021	1	5TH ST. AND VAN BUREN ST., NW	6/1/2004
5113		BLAIR RD. AND VAN BUREN ST., NW	6/1/2004
5165	1	PINEY BRANCH RD. AND VAN BURNEN ST., NW	6/1/2004
1117	2	20TH ST. AND CONSTITUTION AVE., NW	6/2/2004

1133	2	21ST ST. AND CONSTITUTION AVE., NW	6/3/2004
1146	1	22ND ST. AND CONSTITUTION AVE., NW	6/3/2004
1155	2	23RD ST. AND CONST AVE AND T R BRIDGE RAMPS, NW	6/4/2004
1226	2	15TH ST. AND INDPENENCE AVE., SW	6/7/2004
1249	1	RAOUL WALLENBERG PL. AND HOLOCAUST MUSEUM	6/7/2004
1225	1	RAOUL WALLENBERG PL. AND BASIN DR., SW	6/8/2004
5012	1	5TH ST. AND CEDAR ST.,NW	6/8/2004
5236	1	PINEY BRANCH RD. AND CEDAR ST., NW	6/8/2004
5093	2	16TH ST. AND HOLLY ST., NW	6/9/2004
5094	2	16th ST. AND KALMIA RD., NW	6/9/2004
5112	1	BLAIR RD. AND APEN ST., NW	6/9/2004
5163	1	PINEY BRANCH RD. AND BUTTERNUT ST., NW	6/9/2004
5247	1	PINEY BRANCH RD. AND ASPEN ST., NW	6/9/2004
5030	1	13TH ST. AND ALASKA AVE. & HEMLOCK ST., NW	6/10/2004
5022	1	8TH ST. AND MISSOURI AVE. NW	6/11/2004
5037	1	13TH ST. AND FT. STEVENS DR., NW	6/11/2004
5153	1	KANSAS AVE. & MISSOURI AVE. & KENNEDY, NW	6/11/2004
5008	1	NEW HAMPSHIREAVE. & RANDOLPH ST. NW	6/14/2004
5157	1	NEW HAMPSHIRE AVE.& SHEPHERD ST., 7 ST., NW	6/14/2004
5159	1	NEW HAMPSHIRE AVE. AND WEBSTER ST., NW	6/14/2004
5040	1	13TH ST. AND IOWA AVE. & BUCHANAN ST., NW	6/15/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
5110	1	ARKANSAS AVE AND ALLISON ST., NW	6/15/2004
5111	1	ARKANSAS AVE. AND UPSHURT ST., NW	6/15/2004
5166	1	ROCK CREEK CHURCH RD. AND UPSHUR ST., NW	6/15/2004
5182	1	HAWAII AVE. ALLISON ST. & CLERMONT DR., NE	6/15/2004
5189	1	RIGGS RD. AND CHILLUM PL., NE	6/16/2004
5190	1	RIGGS RD. AND EASTERN AVE., NE	6/16/2004
5191	1	RIGGS RD. AND NICHOLSON ST. & 6TH ST., NE	6/16/2004
5192	1	RIGGS RD. AND SO. DAKOTA AVE., NE	6/16/2004
5206	1	RIGGS RD. & NICHOLSON ST. (SOUTH), NE	6/16/2004
5115	1	CARROLL ST. AND MAPLE ST., NW	6/17/2004
5116	1	CARROLL ST. AND WILLOW ST. & EASTERN AVE., NW	6/17/2004
5201	1	N. CAPITOL ST. & NEW HAMP AVE. & KENNEDY ST.	6/17/2004
5241	1	NEW HAMPSHIRE AVE. AND BLAIR RD., NE	6/17/2004
3192	1	RHODE ISLAND & EASTERN AVE., NE	6/18/2004
3195	1	RHODE ISLAND & MONTOE ST. & 28TH ST., NE	6/18/2004
6090	1	FOXHALL RD. AND Q ST., NW	6/18/2004
3189	1	RHODE ISLAND & 14TH ST. & MONT. AVE., NE	6/21/2004
3193	1	RHODERHODE ISLAND & FRANKLIN ST., NE	6/21/2004
3194	1	RHODE ISLAND & MILLS AVE., NE	6/21/2004

3197	1	RHODE ISLAND & SO. DAKOTA AVE., NE	Jun-04
3249	1	24TH ST. AND RHODE ISLAND AVE., NE	6/21/2004
3186	1	RHODE ISLAND & 10TH ST. & BRYANT, NE	6/22/2004
3190	1	RHODE ISLAND & 20TH ST., NE	6/22/2004
1218	2	12TH ST. AND EXPRESSWAY AT RAMP G, SW	6/23/2004
2148	2	LOUISIANA AVE. AND CONSTITUTION AVE., NW	6/23/2004
3008	1	2ND ST. AND RHODE ISLAND AVE. AND SEATON RD., NW	6/23/2004
3032	1	4TH ST. AND RHODE ISLAND AVE., NE	6/23/2004
3035	1	LINCOLN RD. AND RHODE ISL AVE. AND U ST., NE	6/23/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3187	1	RHODE ISLAND & 12TH ST. & SARATOGA, NE	6/23/2004
3191	1	RHODE ISLAND & 20TH ST., NE	6/23/2004
3196	1	RHODE ISLAND & REED ST., NE	6/23/2004
3243	1	RHODE ISLAND & SHOPPING PLAZA, NE	6/23/2004
3010	1	3RD ST. AND RHODE ISLAND AVE., NW	6/24/2004
3013	1	4TH ST., S ST., FLA AVE., RHODE ISLAND AVE., NW	6/24/2004
3188	1	RHODE ISLAND & 13TH ST. & BRENT RD., NE	6/24/2004
3029	1	RHODE ISLAND AVE, NEW JERSEY AVE, S ST., NW	6/25/2004
3044	1	RHODE ISLAND AVE. AND R ST., MARION ST., NW	6/25/2004
3064	1	4TH ST. AND T ST., NE	6/25/2004
2129	1	12TH ST. AND RHODE ISLAND AVE., P ST., NW	6/28/2004
2134	1	13TH ST. AND G ST., NW	6/28/2004
3137	1	BENNING RD. AND OKLAHOMA AVE., NE	6/28/2004
2104	1	11TH ST. AND G ST., NW	6/29/2004
2118	1	12TH ST. AND F ST., NW	6/29/2004
2119	1	12TH ST. AND G ST., NW	6/29/2004
2133	1	13TH ST. AND F ST., NW	6/29/2004
2070	1	9TH ST. AND F ST., NW	6/30/2004
2103	1	11TH ST. AND F ST., NW	6/30/2004
2214	1	N. CAPITOL ST. AND E ST	6/30/2004
2020	1	3RD ST. AND H ST. AND MASS AVE., NW	7/1/2004
3070	1	6TH ST. AND CONSTITUTION AVE., NE	7/1/2004
3078	1	7TH ST. AND 8TH ST. & MASS AVE. & CONST., NE	7/1/2004
3242	1	5TH ST. AND CONSTITUTION AVE., NE	7/1/2004
2199	2	10TH ST. AND CONSTITUTION AVE. (EAST), NW	7/2/2004
2001	1	1ST ST. AND C ST., AND INDIANA AVE., NW	7/6/2004
2002	1	1ST ST. AND CONSTITUTION AVE., NW	7/6/2004
2132	1	13TH ST. AND UPPER E ST., NW	7/6/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2165	1	1ST ST. (WEST) AND MASS AVE. AND E ST., NE	7/6/2004
2003	1	1ST ST. AND D ST., NW	7/7/2004

3088	1	9TH ST. AND H ST., NE	7/7/2004
3092	1	10TH ST. AND H ST., NE	7/7/2004
3113	1	15TH ST. AND D ST., NE	7/7/2004
2163	1	1ST ST. AND MARYLAND AVE., NE	7/8/2004
3069	1	6TH ST. AND C ST. AND MSA AVE. & MD AVE., NE	7/8/2004
3074	1	6TH ST. AND FLORIDA AVE., NE	7/8/2004
3090	1	9TH ST. AND MASS AVE., NE	7/8/2004
3095	1	11ST. AND CONSTITUTION AVE., NE	7/8/2004
3102	1	13TH ST. AND C ST., NE	7/8/2004
3118	1	17TH ST. AND C ST., NE	7/8/2004
2045	1	6TH ST. AND I ST., NW	7/9/2004
3087	1	9TH ST. AND CONSTITUTION AVE., NE	7/9/2004
2040	1	6TH ST. AND D ST. AND INDIANA AVE., NW	7/12/2004
2042	1	6TH ST. AND F ST., NW	7/12/2004
2043	1	6TH ST. AND G ST., NW	7/12/2004
2044	1	6TH ST. AND H ST., NW	7/12/2004
2082	1	9TH ST. AND R ST., NW	7/13/2004
2084	1	9TH ST. AND S ST., NW	7/13/2004
2046	1	6TH ST. AND K ST., NW	7/14/2004
2067	1	8TH ST. AND E ST., NW	7/14/2004
2121	1	12TH ST. AND I ST., NW	7/14/2004
2150	1	NEW JERSEY AVE. AND E ST., NW	7/14/2004
2152	1	NEW JERSEY AVE. AND H ST., NW	7/14/2004
1180	2	CONSTITUTION AVE. AND HENRY BACON DR., NW	7/15/2004
2091	1	NEW JERSEY AVE. AND C ST., NW	7/15/2004
2149	1	NEW JERSEY AVE. AND D ST., NW	7/15/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2151	1	NEW JERSEY AVE. AND G ST., NW	7/15/2004
2216	1	N. CAPITOL ST. AND G PLACE	7/16/2004
2217	1	N. CAPITOL ST. AND H ST	7/16/2004
2218	1	N. CAPITOL ST. AND I ST	7/16/2004
2219	1	N. CAPITOL ST. AND K ST.	7/16/2004
2221	1	N. CAPITOL ST. AND M ST.	7/16/2004
2171	1	HALF ST. AND M ST., SW	7/19/2004
2198	1	6TH ST. AND MAINE AVE. AND M ST., SW	7/19/2004
2206	1	DELAWARE. AVE. AND I ST.SW	7/19/2004
1207	1	7TH ST. AND G ST., SW	7/20/2004
1232	1	7TH ST. AND I ST., SW	7/20/2004
2168	1	DELAWARE AVE. AND D ST., NE	7/20/2004
2169	1	DELAWARE AVE. AND MASS AVE. (E/B) NE	7/20/2004
2170	1	DELAWARE AVE. AND MASS AVE. (W/B) NE	7/20/2004

2229	2	S. CAPITOL ST. AND VIRGINIA AVE.	7/21/2004
3006	1	1ST ST. AND FLORIDA AVE., NW	7/21/2004
3030	1	1ST ST. AND FLA AVE. AND ECKINGTON PL.	7/21/2004
3200	1	SO. DAKOTA AVE. & 12TH ST., NE	7/21/2004
3201	1	SO. DAKOTA AVE. & 14TH ST. & WEBSTER ST., NE	7/21/2004
3202	1	SO. DAKOTA AVE. & 18TH ST. & SHEPHERD ST., NE	7/21/2004
5003	1	1ST ST. AND MICHIGAN AVE., NW	7/22/2004
5154	1	MICHIGAN AVE. & CHILDRENS HOSPITAL, NW	7/22/2004
5233	1	MICHIGAN AVE AND FRANKLIN ST., NE	7/22/2004
3206	1	SO. DAKOTA AVE. & DELFIELD ST., NE	7/23/2004
3209	1	SO. DAKOTA & HAMILTON ST., NE	7/23/2004
3212	1	SO. DAKOTA AVE. & SARGENT RD., NE	7/23/2004
3203	1	SO. DAKOTA AVE. & 20TH ST., NE	7/25/2004
3231	1	MICHIGAN AVE. & 4TH ST. & HAREWOOD RD., NE	7/25/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3162	1	MICHIGAN AVE. AND 14TH ST., NE	7/26/2004
3166	1	MICHIGAN AVE. AND SO. DAKOTA AVE. & 16TH ST., NE	7/26/2004
3164	1	MICHIGAN AVE. AND ALLISON ST., NE	7/27/2004
3165	1	MICHIGAN AVE. AND EASTERN AVE., NE	7/27/2004
3211	1	SO. DAKOTA AVE. & QUINCY ST. & PERRY ST., NE	7/27/2004
3213	1	TAYLOR ST. & 7TH ST. & PUERTO RICO AVE., NE	7/27/2004
3042	1	N. CAPITOL ST. AND RANDOLPH ST.	7/28/2004
3138	1	BLADENSBURG RD. AND 25TH ST. & V ST., NE	7/28/2004
3139	1	BLADENSBURG RD. AND 30THST., NE	7/28/2004
3140	1	BLADENSBURG RD. AND EARL PL. & BANNEKER, NE	7/28/2004
3144	1	BLADENSBURG RD. AND OATES ST. & K ST., NE	7/28/2004
3205	1	SO. DAKOTA AVE. & CARLTON AVE., NE	7/28/2004
5240	1	ROCK CREEK CHURCH RD. AND HAREWOOD RD., NW	7/28/2004
2037	2	9TH ST. AND CONSTITUTION AVE., NW	7/29/2004
3150	1	EASTERN AVE. AND VARNUM ST., NE	7/29/2004
3204	1	SO. DAKOTA AVE. AND 22ND ST. & NEWTON ST., NE	7/29/2004
5197	1	N. CAPITOL, HAWAII, BUCHANNAN, ROCK CR CHURCH	7/29/2004
1152	1	22ND ST. AND P ST., NW	7/30/2004
1163	1	23RD ST. AND P ST., NW	7/30/2004
1005	1	12TH ST. AND C ST., NW	8/2/2004
3038	1	N. CAPITOL ST. AND LINCOLN RD.	8/2/2004
3230	1	FRANKLIN ST. AND LINCOLN RD., NE	8/2/2004
5196	1	N. CAPITOL ST, FORT DR, HAREWOOD, CLERMONT DR.	8/2/2004
1124	1	20TH ST. AND L ST., NW	8/3/2004
1168	1	24TH ST. AND M ST., NW	8/3/2004
3037	1	N. CAPITOL ST. AND FLORIDA AVE.	8/3/2004

3124	1	17TH. AND M ST., NE	8/3/2004
3207	1	SO. DAKOTA AVE. & DOUGLAS ST. & 31ST PL., NE	8/3/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
3244	1	FLORIDA AVE. AND P ST., NE	8/3/2004
1147	1	22ND ST. AND G ST., NW	8/4/2004
1171	1	25TH ST. AND M ST., NW	8/4/2004
1172	1	26TH ST. AND M ST., NW	8/4/2004
1238	1	20TH ST. AND H ST., NW	8/4/2004
2071	1	9TH ST. AND G ST., NW	8/4/2004
3121	1	17TH ST. AND GALES ST., NE	8/4/2004
3125	1	17TH ST. AND MARYLAND AVE., NE	8/4/2004
1095	1	18TH ST. AND MASS AVE., NW	8/5/2004
1174	1	27TH ST. AND I ST. AND VIRGINIA AVE., NW	8/5/2004
5193	1	N. CAPITOL ST. AND BRYANT ST.	8/5/2004
6005	1	24TH ST. AND MASSACHUSETTS AVE., NW	8/5/2004
6050	1	46TH ST. AND YUMA ST., NW	8/5/2004
6120	1	NEW MEXICO AND CATHEDRAL AVE., NW	8/5/2004
6023	1	34TH ST. AND GARFIELD ST., NW	8/6/2004
6031	1	34TH ST. AND WOODLEY RD., NW	8/6/2004
6047	1	46TH ST. AND MASS AVE AND TILDEN ST., NW	8/6/2004
6049	1	46TH ST., AND VAN NESS ST., NW	8/6/2004
6121	1	NEW MEXICO AVE. AND MACOMB ST., NW	8/6/2004
6125	1	RENO RD. AND VAN NESS ST., NW	8/6/2004
6244	1	NEW MEXICO AVE. AND NEWARK ST., NW	8/6/2004
6025	1	34TH ST. AND MACOMB ST., NW	8/9/2004
6027	1	34TH ST. AND PORTER ST., NW	8/9/2004
6116	1	NEBRASKA AVE. AND NEAWRK & ROCKWOOD PWY NW	8/9/2004
6119	1	NEBRASKA AVE. AND VAN NESS ST., NW	8/9/2004
6240	1	34TH ST. AND LOWELL ST., NW	8/9/2004
6206	1	NEBRASKA AVE AND CHESAPEAKE ST., NW	8/9/2004
6002	1	TILDEN ST. AND BEACH DR. AND PARK RD., NW	8/10/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
6010	1	29TH ST. AND CALVERT AND CLEVELAND, NW	8/10/2004
6013	1	30TH ST. & MASS, WHITEHAVEN, ROCK CREEK, NW	8/10/2004
6018	1	32ND ST. & CLEVELAND AVE. & GARFIELD ST., NW	8/10/2004
6056	1	CALVERT ST. AND TUNLAW RD., NW	8/10/2004
6122	1	RENO RD. AND ALBERMARLE ST., NW	8/10/2004
6124	1	RENO RD. AND TILDENT ST. & SPRINGLAND LN., NW	8/10/2004
6036	1	39TH ST. AND MASS AVE AND IDAHO AVE., NW	8/11/2004
6093	1	LOUGHBORO RD. AND SIBLEY HOSPITAL ENT., NW	8/11/2004
6103	1	MASS AVE. & DRIVEWAY AT 4201 MASS AVE., NW	8/11/2004

6107	1	MASS AVE. AND GARFIELD ST. NW	8/11/2004
6235	1	WESTERN AVE. AND OLIVER ST., NW	8/11/2004
6242	1	48TH ST., FORDHAM RD., AND MASS AVE., NW	8/11/2004
6252	1	WESTERN AVE. AND MILITARY RD., NW	8/11/2004
3007	1	1ST ST. AND RHODE ISLAND AVE. AND T ST., NW	8/12/2004
6035	1	39TH ST. AND CATHERAL AVE., NW	8/12/2004
6108	1	MASS AVE. AND GILLIS, OBSERVATORY CIR., NW	8/12/2004
6112	1	NEBRASKA AVE. AND FESSENDEN ST., NW	8/12/2004
6115	1	NEBRASKA AVE. AND NEVADA AVE. NW	8/12/2004
6157	1	WARD CIRCLE, NW	8/12/2004
6239	1	WESTERN AVE. AND WISCONSIN CIRCLE, NE	8/12/2004
6243	1	39TH ST. AND MILITARY RD., NW	8/12/2004
6251	1	NEBRASKA AVE., DAVENPORT ST. AND FORT DR., NW	8/12/2004
2113	1	11TH ST. AND Q ST., RHODE ISLAND AVE., NW	8/13/2004
3019	1	6TH ST. AND R ST. AND RHODE ISLAND AVE., NW	8/13/2004
6043	1	42ND ST. AND RIVER RD., NW	8/13/2004
6044	1	43RD ST. AND RIVER RD. & CHESAPEAKE ST., ST., NW	8/13/2004
6234	1	NEBRASKA AVE. AND UTAH AVE., NW	8/13/2004
4178	1	EAST CAPITOL ST. AND BENNING RD.	8/16/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1006	2	12TH ST. AND CONSTITUITON AVE., NW	8/17/2004
2083	1	9TH ST. AND RHODE ISLAND AVE., NW	8/17/2004
3055	1	4TH ST. AND C ST., & MASS AVE., MD AVE., NE	8/17/2004
6039	1	41ST ST. AND LIVINGSTON ST., NW	8/17/2004
6040	1	41ST ST. AND MILITARY RD. AND RENO RD., NW	8/17/2004
2164	1	1ST ST. (EAST) AND MASS AVE., NE	8/18/2004
6096	1	MACARTHUR BLVD AND DANA PL., NW	8/18/2004
6097	1	MACARTHUR BLVD AND LOUGBORO RD., NW	8/18/2004
6037	1	39TH ST. AND NEBRASKA & ALBERMARLE, NW	8/19/2004
6042	1	42ND ST. AND ALBERMARLE ST., NW	8/19/2004
6089	2	FOXHALL RD. AND GARFIELD ST., NW	8/19/2004
6094	1	MACARTHUR BLVD. AND ARIZONA AVE., NW	8/19/2004
6095	1	MACARTHUR BLVD AND CATHEDRAL AVE., NW	8/19/2004
6104	1	MASS AVE. AND GLOVER GATE (AU), NW	8/19/2004
3163	1	MICHIGAN AVE. AND 18TH ST. AND VARNUM ST., NE	8/20/2004
6041	1	41ST ST. & MCKINLEY, WESTERN, CEDAR PKWY, NW	8/20/2004
6048	1	46TH ST. AND RIVER RD. AND GARRISON ST., NW	8/20/2004
6100	1	MACARTHUR BLVD AND RESERVOIR RD. (WEST), NW	8/20/2004
6101	1	MACARTHUR BLVD AND V ST., NW	8/20/2004
2117	1	12TH ST. AND E ST., NW	8/23/2004
2120	1	12TH ST. AND H ST., NW	8/23/2004

2176	1	2ND ST. AND D ST., SW	8/23/2004
2187	1	4TH ST. AND C ST., SW	8/23/2004
3018	1	6TH ST. AND Q ST., NW	8/23/2004
3020	1	6TH ST. AND S ST., NW	8/23/2004
6079	2	CONNECTICUT AVE. AND POTER, NW	8/23/2004
6245		PORTER AND QUEBEC, NW	8/23/2004
2048	1	6TH ST. AND M ST., NW	8/24/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2050	1	6TH ST. AND N ST., NW	8/24/2004
2090	1	10TH ST. AND H ST., NW	8/24/2004
2105	1	11TH ST. AND H ST., NW	8/24/2004
2122	1	12TH ST. AND K ST., NW	8/24/2004
2123	1	12TH ST. AND L ST., NW	8/24/2004
2125	1	12TH ST. AND MASS AVE., NW	8/24/2004
2197	1	6TH ST. AND I ST., SW	8/24/2004
3016	1	6TH ST. AND O ST., NW	8/24/2004
3017	1	6TH ST. AND P ST., NW	8/24/2004
2078	1	9TH ST. AND O ST., NW	8/25/2004
2079	1	9TH ST. AND P ST., NW	8/25/2004
2102	1	11TH ST. AND E ST., NW	8/25/2004
2124	1	12TH ST. AND M ST., NW	8/25/2004
2128	1	12TH ST. AND Q ST., NW	8/25/2004
2130	1	12TH ST. AND VERMONT AVE. AND R ST., NW	8/25/2004
2236	1	9TH ST. AND EYE ST., NW	8/25/2004
1200	1	6TH ST. AND E ST., SW	8/26/2004
2093	1	10TH ST. AND L ST., NW	8/26/2004
2094	1	10TH ST. AND M ST., NW	8/26/2004
2108	1	11TH ST. AND M ST., NW	8/26/2004
2188	1	4TH ST. AND E ST., SW	8/26/2004
2246	1	11TH ST. AND N ST., NW	8/26/2004
1198	1	6TH ST. AND C ST., SW	8/27/2004
1199	1	6TH ST. AND D ST. AND VIRGINIA AVE., SW	8/27/2004
2097	1	10TH ST. AND P ST., NW	8/27/2004
2110	1	11TH ST. AND P ST., NW	8/27/2004
2112	1	11TH ST. AND Q ST., NW	8/27/2004
2138	1	13TH ST. AND L ST., NW	8/27/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2139	1	13TH ST. AND M ST., NW	8/27/2004
2140	1	13TH ST. AND M ASS AVE., NW	8/27/2004
2068	1	9TH ST. AND D ST., NW	8/28/2004
2069	1	9TH ST. AND E ST., NW	8/28/2004

2072	1	9TH ST. AND H ST., NW	8/28/2004
1202	1	6TH ST. AND MARYLAND AVE., SW	8/30/2004
2114	1	11TH ST. AND R ST., NW	8/30/2004
2141	1	13TH ST. AND N ST., NW	8/30/2004
2142	1	13TH ST. AND Q ST., NW	8/30/2004
2143	1	13TH ST. AND R ST., NW	8/30/2004
2247	1	13TH ST. AND O ST., NW	8/30/2004
1231	1	7TH ST. AND E ST., SW	8/31/2004
2092	1	10TH ST. AND K ST., NW	8/31/2004
2095	1	10TH ST. AND MASS AVE., NW	8/31/2004
2144	1	13TH ST. AND S ST., NW	8/31/2004
2184	1	3RD ST. AND M ST., SW	8/31/2004
1204	1	7TH ST. AND C ST., AND MARYLAND AVE., SW	9/1/2004
1205	1	7TH ST. AND D ST., SW	9/1/2004
1206	1	7TH ST. AND FRONTAGE R., SW	9/1/2004
1214	1	10TH ST. AND D ST., SW	9/1/2004
2100	1	10TH ST. AND S ST., NW	9/1/2004
2109	1	11TH ST. AND MASS AVE. AND L ST., NW	9/1/2004
2116	1	11TH ST. AND VERMONT AE. AND S ST., NW	9/1/2004
1184	1	MASS AVE. AND Q ST., NW	9/2/2004
1216	1	12TH ST. AND C ST., SW	9/2/2004
1239	1	NEW HAMPSHIRE AVE. AND N ST., NW	9/2/2004
1245	1	14TH ST. BRIDGE RAMP AND MAINE AVE., SE	9/2/2004
1185	1	NEW HAMPSHIRE AVE AND M ST., NW	9/3/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2074	1	9TH ST. AND K ST. AND NEW YORK AVE., NW	9/3/2004
1221	1	D ST. BETWEEN 13TH ST. AND 14TH ST., SW	9/7/2004
1114	2	19TH ST. AND PEEN AVE. AND H ST. NW	9/8/2004
1193	1	VIRGINIA AVE. AND E ST., NW	9/8/2004
2155	1	VERMONT AVE. AND Q ST., NW	9/8/2004
1187	1	NEW HAMPSHIRE AVE AND VIRGINIA AVE., NW	9/9/2004
1194	1	ROCK CREEK PKWY AND VIRGINIA AVE., NW	9/9/2004
2065	2	7TH ST. AND NEW YORK AVE., NW	9/9/2004
2077	1	9TH ST. AND MASS AVE., NW	9/9/2004
5109	1	17TH ST. & MT PLEASANT ST. & PARK RD., NW	9/9/2004
5245	1	18TH ST. AND PARK RD., NW	9/9/2004
6203	1	ADAMS MILL RD. AND KLINGLE AND ROSEMONT, NW	9/9/2004
2115	1	11TH ST. AND U ST., NW	9/10/2004
5024	1	11TH ST. AND EUCLID ST., NW	9/10/2004
5025	1	11TH ST. AND FLORIDA AVE . NW	9/10/2004
5046	2	13TH ST. AND MONROE ST., NW	9/10/2004

5049	1	13TH ST. AND ROOSEVELT HOSPITAL ENT. NW	9/10/2004
5243	1	13TH ST. AND OTIS PLACE, NW	9/10/2004
1191	1	VERMONT AVE. AND H ST., AND MADISON PL., NW	9/13/2004
5023	1	11TH ST. AND COLLUMBIA RD., NW	9/13/2004
5026	1	11TH ST. AND HARVARD ST., NW	9/13/2004
5028	1	11TH ST. AND KENYON ST., NW	9/13/2004
6052	1	ADAMS MILL RD. AND CALVERT AND LANIER, NW	9/13/2004
6053	1	ADAMS MILL RD. & HARVARD ST. & ZOO ENT., NW	9/13/2004
6054	1	ADAMS MILL RD. & KENYON ST. & IRVING ST., NW	9/13/2004
6061	1	COLUMBIA RD. AND ONTARIO RD., NW	9/13/2004
1192	1	VERMONT AVE. AND L ST., NW	9/14/2004
5027	1	11TH ST. AND IRVING ST., NW	9/14/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
5029	1	11TH ST. AND PARK RD., NW	9/14/2004
5047	1	13TH ST. AND PARK RD., NW	9/14/2004
6003	1	24TH ST. AND CALVERT ST., NW	9/14/2004
6060	1	COLUMBIA RD. AND KALORAMA RD., NW	9/14/2004
6236	1	CALVERT ST. AND BILTMORE ST., NW	9/14/2004
2156	1	VERMONT AVE. AND U ST., NW	9/15/2004
2167	1	DELAWARE AVE. AND CONSTITUTION AVE., NE	9/15/2004
2240	1	10TH ST. AND U ST., NW	9/15/2004
2241	1	9TH ST. AND T ST., NW	9/15/2004
5167	1	SHERMAN AVE. AND BARRY PL., NW	9/15/2004
2145	1	13TH ST. AND T ST., NW	9/16/2004
2146	1	13TH ST. AND U ST., NW	9/16/2004
3021	1	6TH ST. AND T ST. AND FLORIDA AVE., NW	9/16/2004
5014	1	5TH ST. AND HARVARD ST., NW	9/16/2004
5169	1	SHERMAN AVE. AND EUCLID ST., NW	9/16/2004
5170	1	SHERMAN AVE. AND FAIRMONT ST., NW	9/16/2004
1251	1	F ST. PED XING E OF 14TH ST., NW	9/17/2004
5051	1	13TH ST. AND V ST., NW	9/17/2004
5052	1	13TH ST. AND W ST., NW	9/17/2004
5168	1	SHERMAN AVE. AND COLUMBIA RD., NW	9/17/2004
5172	1	SHERMAN AVE. AND HARVARD ST., NW	9/17/2004
5173	1	SHERMAN AVE. AND IRVING ST., NW	9/17/2004
5174	1	SHERMAN AVE. AND KENYON ST., NW	9/17/2004
2101	1	10TH ST. AND T ST. AND VERMONT AVE., NW	9/18/2004
1241	1	ROCK CREEK PKWY AND RAMP FROM KENNEDY CTR	9/20/2004
2157	1	LOGAN CIRCLE, NW	9/20/2004
5032	1	13TH ST. AND CLIFTON ST., NW	9/20/2004
5035	1	13TH ST. AND EUCLID ST., NW	9/20/2004

ACISA #	D=1/N=2	INTERSECTION	LED Installation Date
5036	1	13TH ST. AND FLORIDA AVE., NW	9/20/2004
6106	1	MASS AVE. AND CALIFONIA ST., NW	9/20/2004
5034	1	13TH ST. AND COLUMBIA RD. NW	9/21/2004
5039	1	13TH ST. AND HARVARD ST., NW	9/21/2004
5041	1	13TH ST. AND IRVING ST., NW	9/21/2004
5171	1	SHERMAN AVE. AND FLORIDA AVE., NW	9/21/2004
6126	1	WESTERN AVE. AND GEICO ENTRANCE, NW	9/21/2004
6237	1	WESTERN AVE. AND LISNER HOME ENT., NW	9/21/2004
1167	1	24TH ST. AND L ST., NW	9/22/2004
3015	2	5TH ST. AND FLA AVE., NEW JERSEY AVE., NW	9/22/2004
5044	1	13TH ST. AND KENYON ST., NW	9/22/2004
6055	1	CALVERT ST. AND SHOREHAM HOTEL, NW	9/22/2004
5150	1	IRVING ST. AND MT PLEASANT ST., NW	9/23/2004
5175	1	SHERMAN AVE. AND N. HAMP AVE. PARK RD 7 MONROE NW	9/23/2004
1235	1	FLORDIA AVE. AND CALIFORNIA ST., SW	9/27/2004
3002	2	1ST ST. AND NEW YORK AVE., NW	9/27/2004
5151	1	IRVING ST. AND EAST-WEST CROSSING, NW	9/27/2004
5202	1	FLORIDA AVE. AND VERMONT AVE & V ST., NW	9/27/2004
6205	1	PARK RD. AND WOLBRIDGE, NW	9/27/2004
2023	1	3RD ST. AND PENN AVE., NW	9/28/2004
2175	1	2ND ST. AND C ST. AND RAMP 5A SW	9/28/2004
2177	1	2ND ST. AND VIRGINIA AVE., SW	9/28/2004
3060	1	4TH ST. AND FLORIDA AVE., NE	9/28/2004
2174	1	1ST ST. AND M ST. AND CANAL ST., SW	9/29/2004
2190	1	4TH ST. AND I ST., SW	9/29/2004
3052	1	3RD ST. AND H ST., NE	9/30/2004
2013	1	2ND ST. AND H ST., NW	10/1/2004
3047	1	2ND ST. AND D ST., NE	10/1/2004
ACISA #	D=1/N=2	INTERSECTION	LED Installation Date
2019	1	3RD ST. AND G ST., NW	10/4/2004
2028	1	4TH ST. AND K ST., NW	10/4/2004
6099	1	MACARTHUR BLVD AND RESERVOIR (EAST), NW	10/4/2004
3143	1	BLADENSBURG RD. AND MORSE ST., NE	10/5/2004
5188	1	RIGGS RD. AND BLAIR RD. 7 FT. TOTTEN DR., NE	10/5/2004
3177	1	MT. OLIVET RD. AND W. VIRGINIA AVE., NE	10/6/2004
5186	1	RIGGS RD. AND 1ST PL., NE	10/6/2004
1195	1	DUPONT CIRCLE, NW	10/7/2004
3174	1	MONROE ST. AND 22ND ST., NE	10/7/2004
3254	1	SOUTH DAKOTA AVE. AND GALLATIN ST., NE	10/7/2004
3214	1	TAYLOR ST. & 10TH ST., NE	10/8/2004

3041	1	N. CAPITOL ST. AND R ST. AND LINCOLN RD.	10/11/2004
6026	1	34TH ST. AND MASSACHUSETTS AVE., NW	10/11/2004
3161	1	MICHIGAN AVE & 13TH ST. AND TAYLOR ST., NE	10/12/2004
3198	1	SARGENT RD. AND EASTERN AVE., NE	10/13/2004
3210	1	SO. DAKOTA AVE. & MONROE ST., NE	10/13/2004
6045	1	44TH ST. AND MCARTHUR BLVD & FOXHALL RD., NW	10/13/2004
2012	1	2ND ST. AND E ST., NW	10/15/2004
2017	1	3RD ST. AND D ST., NW	10/15/2004
6091	1	FOXHALL RD. AND RESERVOIR RD., NW	10/15/2004
6051	1	49TH ST. AND MASSACHUSETTS AVE., NW	10/18/2004
6102	1	MASSACHUSETTS AVE. AND CATHEDRAL AVE., NW	10/18/2004
6109	1	MASS AVE. AND WATERSIDE DR., NW	10/18/2004
6253	1	50TH ST. AND MASSACHUSETTS AVE., NW	10/18/2004
1186	1	NEW HAMPSHIRE AVE AND R ST., NW	10/19/2004
2203	2	CANAL ST. AND D ST. AND DELAWARE AVE., SW	10/19/2004
6022	1	34TH ST. AND CLEVELAND AVE., NW	10/19/2004
2016	2	3RD ST. AND CONSTITUTION AVE., NW	10/20/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2201	2	PENN AVE. AND CONSTITUTION AVE. (EAST), NW	10/20/2004
2089	1	10TH ST. AND G ST., NW	10/21/2004
2088	1	10TH ST. AND F ST., NW	10/22/2004
2215	1	N. CAPITOL ST. AND F ST. AND MASS AVE.	10/25/2004
3219	1	26TH ST. & C ST., NE	10/26/2004
3229	1	FRANKLIN ST. 7TH ST., NE	10/26/2004
5006	1	3RD ST. AND MISSOURI AVE., NW	10/26/2004
3145	1	BLADENBURG RD. AND QUEENS CHAPEL RD., NE	10/27/2004
3208	1	SO. DAKOTA & GALLOWAY ST., NE	10/27/2004
5156	1	NEW HAMPSHIRE AVE. & MISSOURI AVE., NW	10/27/2004
5200	1	N. CAPITOL ST. & MISSOURI AVE & RIGGS RD.	10/27/2004
3040	1	N. CAPITOL ST AND P ST	10/28/2004
5114	1	CARROLL ST. AND CEDAR ST., NW	10/29/2004
5152	1	KANSAS AVE. & BLAIR RD. & NO. DAKOTA AVE, NW	10/29/2004
5162	1	PINEY BRANCH RD. AND BLAIR RD., NW	10/29/2004
5198	1	N. CAPITOL ST. AND KANSAS AVE. & CHILLUM PL.	10/29/2004
5207		BLAIR RD., NORTH DAKOTA AVE. AND PEABODY ST., NW	10/29/2004
1211	1	9TH ST. AND D ST., SW	11/1/2004
5009	1	4TH ST. ADNCEDAR ST. & BLAIR RD., NW	11/2/2004
5045	1	13TH ST. AND MISSOURI AVE., NW	11/2/2004
5164	1	PINEY BRANCH RD. AND EASTERN AVE., NW	11/2/2004
5042	1	13TH ST. AND KANSAS AVE. & SPRING RD., NW	11/3/2004
2191	2	4TH ST. AND INDEPENDENCE AVE., SW	11/5/2004

2202	2	WASHINGTON AVE. AND C ST., SW	11/5/2004
2237	1	H ST. AND UNION STATION, NE	11/5/2004
3082	1	8TH ST. AND FLORIDA AVE. & GALLAUDET DR., NE	11/5/2004
3241	1	4TH ST. & W ST., NW	11/5/2004
2182	2	3RD ST. AND INDEPENDENCE AVE., SW	11/6/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2220	1	N. CAPITOL ST. AND L ST.	11/7/2004
2172	2	1ST ST. AND CANAL ST. AND C ST. L. SW	11/8/2004
1030	2	15TH ST. AND CONSTITUTION AVE., NW	11/9/2004
2087	1	10TH ST. AND E ST., NW	11/9/2004
1137	2	21ST ST. AND I ST. AND PENN AVE., NW	11/10/2004
2137	1	13TH ST. AND K ST., NW	11/10/2004
1131	1	20TH ST. AND VIRGINIA AVE., NW	11/11/2004
2107	1	11TH ST. AND K ST., NW	11/11/2004
2136	1	13TH ST. AND I ST., NW	11/11/2004
1099	1	18TH ST. AND NEW HAMPSHIRE AVE., NW	11/12/2004
3109	1	14TH ST. AND CONSTITUTION AVE. & N. CAROLI. AVE., NE	11/15/2004
2051		6TH ST. AND PENNSYLVANIA AVE., NW	11/15/2004
1170	2	25TH ST. AND L ST. AND PENN AVE., NW	11/16/2004
2039	1	6TH ST. AND CONSTITUTION AVE., NW	11/16/2004
2111	2	11TH ST. AND PENN AVE., NW	11/16/2004
1052	2	16TH ST. AND K ST., NW	11/17/2004
2131	2	13TH ST. AND LOWER E ST. AND PENN AVE., NW	11/17/2004
2180	1	3RD ST. AND D ST., SW	11/17/2004
1038	2	15TH ST. AND K ST. AND VERMONT AVE., NW	11/18/2004
2027	1	4TH ST. AND H ST. AND MASS AVE., NW	11/18/2004
2041	1	6TH ST. AND E ST., NW	11/18/2004
2038	1	6TH ST. AND C ST., NW	11/19/2004
2153	1	NEW JERSEY AVE. AND K ST., NW	11/19/2004
3226		3RD ST. AND FLORIDA AVE., NE	11/19/2004
3233		M ST. AND DELAWARE AVE., NE	11/19/2004
3225		M ST. AND NEW YORK MOTORAIL STATION CROSSING NE	11/19/2004
2049	1	6TH ST. AND MASS AVE., NW	11/22/2004
2185	1	3RD ST. AND MARYLAND AVE., SW	11/22/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
2233	1	9TH ST. AND MAINE AVE., SW	11/22/2004
1212	2	9TH ST. AND INDEPENDENCE AVE., SW	11/23/2004
1217	1	12TH ST. AND D ST., SW	11/29/2004
1219	2	12TH ST. AND INDEPENDENCE AVE., SW	11/29/2004
1220	1	12TH ST. AND MARYLAND AVE., SW	11/29/2004

1215	2	10TH ST. AND INDEPENDENCE AVE., SW	11/30/2004
1101	1	18TH ST. AND U ST. VERNON ST, FLA AVE., NW	12/2/2004
1126	1	20TH ST. AND MASS AVE., NW	12/2/2004
2147	1	CONSTITUTION AVE. AND NEW JERSEY AVE., NW	12/7/2004
2166	1	DELAWARE AVE. AND C ST., NE	12/7/2004
2208	2	1ST ST. AND INDEPENDENCE AVE., SE	12/8/2004
2211	1	NEW JERSEY AVE AND C ST., SE	12/8/2004
2223	1	S. CAPITOL ST. AND C ST	12/8/2004
2225	1	S. CAPITOL ST. AND D ST	12/8/2004
2235	1	NEW JERSEY AND D ST., SE	12/8/2004
2249	1	M ST. AND ISAAC HULL AVE., SE	12/8/2004
1210	1	7TH ST. AND E/B RAMP TO SW FREEWAY, SW	12/9/2004
2179	1	3RD ST. AND C ST., SW	12/10/2004
2227	2	S. CAPITOL ST. AND INDEPENDENCE AVE.	12/10/2004
3142	1	BLADENSBURG RD. AND MONTANA AVE. & ST ST., NE	12/10/2004
3141	1	BLADENSBURG RD. AND EASTERN AVE., NE	12/14/2004
3146	1	BLADENSBURG RD. AND S. DAKOTA AVE., NE	12/14/2004
2085	1	9TH ST. AND U ST. AND FLORIDA AVE., NW	12/15/2004
2248	1	6TH ST. AND L ST., NW	12/15/2004
3098	1	12TH ST. AND F ST. & MARYLAND AVE., NE	12/15/2004
3049	1	2ND ST. AND MARYLAND AVE. & CONST AVE., NE	12/16/2004
1029	1	15TH ST. AND ALEX HAM PL & UPPER E ST., NW	12/17/2004
6046	1	44TH ST. AND WESTERN AVE., NW	12/17/2004
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
6113	1	NEBRASKA AVE. AND FOXHALL RD., NW	12/17/2004
6127	1	WESTERN AVE. AND JENNIFER ST., NW	12/17/2004
6118	1	NEBRASKA AVE. AND RENO RD. NW	12/21/2004
5194	1	N. CAPITOL ST. AND CHANNING ST.	12/22/2004
6114	2	NEBRASKA AVE. AND MILITARY & BROAD BRANCH, NW	12/22/2004
6123	1	RENO RD. AND FESSENDENT ST., NW	12/22/2004
3159	1	MICHIGAN AVE. AND 10TH ST., NE	12/23/2004
3215	1	TAYLOR ST. & 12TH ST., NE	12/23/2004
6117	1	NEBRASKA AVE. AND NEW MEXICO AVE. NW	12/23/2004
2081	1	9TH ST. AND Q ST., NW	12/27/2004
3184	1	3RD ST., 4TH ST. AND FLORIDA AVE., NE	12/27/2004
6128	1	WESTERN AVE. AND RIVER RD., NW	12/28/2004
3151	1	FLORIDA AVE. AND WEST VIRGINIA AVE., NE	12/29/2004
5181	1	EASTERN AVE. CHILLUM RD., RTTENHOUSE, NE	12/29/2004
1051	2	16TH ST. AND I ST., NW	12/30/2004
1033	1	15TH ST. G ST. PENN AVE, NEW YORK AVE., NW	1/3/2005
1028	1	14TH ST. AND U ST., NW	1/4/2005

3199	1	SARGENT RD. AND GALLATIN ST., NE	1/4/2005
2014	1	2ND ST. AND MASSACHUSETTS AVE., NW	1/5/2005
1040	1	15TH ST. AND M ST., NW	1/6/2005
1031	2	15TH ST. AND LOWER E ST., NW	1/7/2005
6105	1	MASS AVE. AND BELMONT RD., NW	1/10/2005
1075	1	17TH ST. AND MASS AVE., NW	1/11/2005
1183	1	FLORDIA AVE. AND R ST., NW	1/11/2005
2209	1	1ST ST. AND M ST., SE	1/11/2005
2243	1	3RD ST. AND M ST., SE	1/11/2005
1069	2	17TH ST. AND H ST., NW	1/13/2005
2015	1	3RD ST. AND C ST. AND GARAGE ENTRANCE, NW	1/13/2005
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4230	1	EAST CAPITOL ST., AMES ST., MN AVE.	1/14/2005
4193		SUITLAND PARKWAY AND NAYLOR RD., SE	2/11/2005
2245		1ST ST. AND L ST., NE	2/11/2005
4228		13TH ST., EAST CAPITOL ST. AND NORTH CAROLINA AVE., NE	2/16/2005
2242		M STREET AND DELAWARE AVE., SE	2/18/2005
2159	1	1ST ST. AND CONSTITUTION AVE., NE	2/22/2005
5249		ARKANSAS AVE. AND PINEY BRANCH PKWY., NW	2/24/2005
2257		12TH ST. AND U ST., NW	5/20/2005
1256		18TH ST. AND C ST., NW	6/21/2005
1000		ROCK CREEK PWKY AND SOUTH KENNEDY CENTER GARAGE ENT., NW	7/18/2005
5208		IRVING STREET AND RAMP FROM SOUTHBOUND, NORTH CAPITOL ST. NW	8/30/2005
4237		WHEELER RD., AND CONGRESS ST., SE	10/14/2005
2205	2	PENN AVE. AND CONSTITUTION AVE. (WEST), NW	10/21/2005
4202		P ST. ENGINE CO. NO 19, PENNSYLVANIA AVE., SE	2/24/2006
4239		PENNSYLVANIA AVE AND TEXAS AVE., SE	3/14/2006
5204		ROCK CREEK CHURCH RD. AND ALLISON ST. NW	3/15/2006
3250		7TH ST. AND FLORIDA AVENUE NE	7/20/2006
3431		SOUTH DAKOTA AVE. AND KENNEDY ST. NE	8/1/2006
1362		HENRY BACON DRIVE AND LINCOLN CIRCLE NW	8/14/2006
5066		16TH ST. AND FULLER ST. NW	8/18/2006
1361		23RD ST. AND LINCOLN CIRCLE., NW	9/11/2006
		13TH ST. AND O ST. NW	9/20/2006
		7TH ST. AND T ST. NW	12/19/2006
		EAST CAPITOL ST. AND DIVISION AVE.	1/11/2007
		NEW HAMPSHIRE AVE., SPRING RD AND PRINCETON PL., NE	2/12/2007
1109	1	19TH ST. AND G ST., NW	

1129	2	20TH ST. AND PENN AVE., NW	
1182	1	EAST EXECUTIVE AVE AND E ST., NW	
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
1189	1	PENN AVE, MADISON PL., EAST EXECUTIVE AVE, NW	
1190	1	14TH ST. BRIDGE, SW	
1196	2	WASHINGTON CIRCLE (NE SIDE), NW	
1197	2	WASHINGTON CIRCLE (SW SIDE), NW	
1229	2	21ST ST. AND F ST., NW	
1230	1	23RD ST. AND CONSTITUTION AVE., NW	
1246	1	E ST. @ ELLIPSE EAST BOUND, NW	
1247	1	E ST. @ ELLIPSE WEST BOUND, NW	
2011	1	1ST ST. AND D ST. AND RAMP J, NW	
2063	2	7TH ST. AND M ST., NW	
2064	2	7TH ST. AND N ST., NW	
2075	1	9TH ST. AND L ST., NW	
2076	1	9TH ST. AND M ST., NW	
2210	1	2ND ST. AND M ST., SE	
2230	1	EAST CAPITOL ST. AND 1ST ST.	
2232	1	S. CAPITOL ST. AND O. ST.	
2238	1	9TH ST. AND N ST., NW	
3062	1	4TH ST. AND K ST., NE	
3065	1	5TH ST. AND C ST., NE(SOUTH)	
3066	1	5TH ST. AND C ST., NE (NORTH)	
3115	1	15TH ST. AND N. CAROLINA., NE	
3116	1	17TH ST. AND BENNING RD., NE	
3129	1	19TH ST. AND BENNING RD., NE	
3132	1	21ST ST. AND BENNING RD., NE	
3134	1	BENNING RD, AND 16TH ST., NE	
3135	1	BENNING RD. AND 24TH ST., NE	
3181	2	NEW YORK AVE. AND FAIRVIEW AVE., NE	
4025	1	8TH ST. & G ST., SE	
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
4026	1	8TH ST. & I ST., SE	
4029	1	8TH ST. & VIRGINIA AVE. & RAMP D, SE	
4171	1	E. CAPITOL AND ANACOSTIA RIVER	
4255	1	MAINTENANCE SHOP TEST CONTROLLER	
5063	1	14TH ST. AND IRVING ST., NW	
5066	1	14TH ST. AND KENYON ST., NW	
5076	1	15th ST. AND COLUMBIA RD., NW	
5078	1	15th ST. AND HARVARD ST., NW	
5199	1	N. CAPITOL ST. AND MICHIGAN AVE.	

5242	1	9TH ST. AND MISSOURI AVE., NW	
6009	1	28TH ST. AND Q ST., NW	
6012	2	30TH ST. AND M ST., NW	
6015	1	30TH ST. AND Q ST., NW	
6020	1	33RD ST. AND M ST., NW	
6024	1	34TH ST. AND M ST., NW	
6243	1	38TH ST. AND MILITARY RD., NW	
6245	1	LOUGHBORO RD. AND ARIZONA AVE., NW	
4226		13TH ST., EAST CAPITOL ST. AND MASSACHUSETTS AVE., SE	
3430		H ST. AND STATION PL., NE	
6162		PORTER ST. MID BLOCK BETWEEN 34TH ST. AND CONNECTICUT AVE. , NW	
6163		FOXHALL RD. AND FIELDS SCHOOL DRIVEWAY, NW	
2250		NORTH CAPITOL ST. AND G ST., NW	
6161		M ST. AND THOMAS JEFFERSON ST., NW	
2251		INDEPENDENCE AVE., SOUTH DR., AND RAYBURN HOUSE BLDG, SW	
5251		13TH STREET AND ALLISON ST., NW	
5242		14TH ST. AND BUCHANAN ST., NW	
6164		FOXHALL RD. AND WHITGHAVON PKWY, NW	
1254		20TH ST. AND N STREET, NW	
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
6249		WISCONSIN AVE. AND S ST., NW	
5252		2ND ST. AND MISSOURI AVE., NW	
6247	1	RENO RD. AND DAVENPORT ST., NW	
6248	1	RENO RD. AND CHESAPEAKE ST., NW	
7001	1	4TH ST. AND T ST., NE	
7003	1	TILDEN ST. AND BEACH DR. AND PARK RD., NW	
6166		CONNECTICUT AVE. AND MORRISON ST., NW	
4197		BRANCH AVE. AND ERIE ST., NW	
3432		WEST VIRGINIA AVE. AND FENWICK ST. NW	
6078		33RD ST., RESERVOIR RD. AND WISCONSI AVE., NW	
6453		22ND ST. AND EAST CAPITOL ST. NORTH	
6454		22ND ST. AND EAST CAPITOL ST. SOUTH	
2395		10TH ST. NW PEDESTRIAN CROSSING BETWEEN E ST., AND F ST.	
		WISCONSIN AVE. AND NORTH RD. NW	
		ILLINOIS AVE. AND INGRAHAM ST. NW	
2260		NEW JERSEY AVE. AND M ST., SE	
2259		4TH ST. AND M ST. SE	
4231		8TH ST AND E ST. SE	

		WISCONSIN AVENUE AND RIVER ROAD NW	
		EASTERN AVE. AND OLIVE ST., NE	
2261		SOUTH CAPITOL ST. AND POTOMAC AVE., SE	
		22ND ST AND F ST. NW	
		SOUTH CAPITOL ST. AND O ST.	
		SOUTH CAPITOL ST. AND P ST.	
		WISCONSIN AVE., WARREN ST. ENGINE CO NO 20 NW	
		1ST ST. AND N ST. SE	
		1ST ST. AND POTOMAC AVE., SE	
		SOUTH CAPITOL ST. AND N ST.,	
<b>ACISA #</b>	<b>D=1/N=2</b>	<b>INTERSECTION</b>	<b>LED Installation Date</b>
		HALF ST. AND M ST. SE	
		ENGINE CO NO. 17 AT 13TH ST. AND MONROE NE	

**REQUIRED CONTRACT PROVISIONS FEDERAL-AID  
CONSTRUCTION CONTRACTS FHWA-1273**

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

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

**ATTACHMENTS**

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

**I. GENERAL**

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

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

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

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

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

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

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

**II. NONDISCRIMINATION**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**6. Training and Promotion:**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### III. NONSEGREGATED FACILITIES

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

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

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

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

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

#### 1. Minimum wages

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

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

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

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

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

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

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

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

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

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

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

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

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

## 2. Withholding

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

## 3. Payrolls and basic records

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

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

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

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

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

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

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