BILL C. PEACOCK
Director - Purchasing

DOUGLAS COUNTY BOARD OF COMMISSIONERS
PURCHASING DEPARTMENT

8700 Hospital Drive • Douglasville, GA 30134
Telephone (770) 920-7247 • Fax (770) 920-7219

May 2, 2019

Subject: Douglas County, Georgia, Board of Commissioners
Invitation to Bid – Maxham Road Construction Reduction and Traffic Flow Improvement Project
Solicitation No. 19-004

Dear Ladies/Gentlemen:

Enclosed please find the Douglas County Board of Commissioners, Invitation to Bid, covering the Maxham Road Construction Reduction and Traffic Flow Improvement Project for Douglas County, Georgia.

Your sealed bid, one (1) original unbound and three (3) bound copies, in response to this Invitation are due **no later than 2:00 p.m. ET, Friday, May 31, 2019**. All sealed bids must be submitted to the Douglas County Purchasing Department, 8700 Hospital Drive, Douglasville, GA 30134. All bids must be submitted by this date and time and will be publicly opened. You are invited to attend, or submit your bid prior to the deadline as stated in the attachments. Each response should be marked on the outside of the envelope with: **"Bid – Maxham Road Construction Reduction and Traffic Flow Improvement Project – Solicitation No. 19-004, May 31, 2019".**

Questions regarding this Invitation to Bid are to be delivered to:

Douglas County Purchasing Department
Mr. Bill Peacock, Purchasing Director
8700 Hospital Drive
Douglasville, Georgia 30134
Fax: 770.920.7219
Email: bpeacock@co.douglas.ga.us

All questions must be received no later than seven days (7) before the due date of the bid either by e-mail, mail or fax. No questions by telephone will be accepted. No other County staff or officials associated with this Project should be contacted regarding this bid.

Thank you in advance for your interest and we look forward to your participation.

Sincerely,

Bill C. Peacock
Purchasing Director

Attachments

DOUGLAS COUNTY
BOARD OF COMMISSIONERS

DEPARTMENT OF TRANSPORTATION
8700 HOSPITAL DRIVE
DOUGLASVILLE, GA 30134

BID DOCUMENTS FOR
THE CONSTRUCTION OF

Maxham Road Congestion Reduction and Traffic Flow Improvements Project

GDOT P.I.NO. 0012621

DOUGLAS COUNTY SOLICITATION #19-004

Bid Due Date: May 31, 2019

Section 2 CONTRACT DOCUMENTS

CONTRACT

Page 1 of 4

THIS AGREEMENT made by and between DOUGLAS COUNTY, GEORGIA, hereinafter called **"OWNER,"** and _____ a contractor doing business as an individual, a partnership, or a corporation of the City of _____, County of _____, and State of Georgia, hereinafter called **"Contractor."**

WITNESSETH: that for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the **County**, the **Contractor** hereby agrees to commence and complete the construction in accordance with requirements of Solicitation #19-004, described as follows:

NOTICE TO BIDDERS:

This project is funded by State and/or local funds. Accordingly, the successful bidder will be required to comply with all applicable State rules and regulations, as well as those of Douglas County. Project must conform to all Americans with Disabilities Act (ADA) regulations.

All bidders submitting bids in excess of $2,000,000.00 shall be prequalified with the Georgia Department of Transportation (GDOT). All bidders submitting bids $2,000,000.00 or less shall be either a prequalified contractor or registered subcontractor with GDOT. In accordance with the Rules and Regulations of the State of Georgia Chapter 672-5-05. Specialty Items such as brick pavers, hardscapes, landscapes, and special design fencing, are exempted from the subcontractor prequalification and registration requirement. However, all subcontractors will be required to be approved by the Department in advance of any work being performed by the Subcontractor.

A Disadvantaged Business Enterprise (DBE) participation goal of 15% has been established for this project. Bidders shall comply with 49 C.F.R. Part 26 in their efforts to attain this goal. Bidders shall be required to document sufficient DBE participation to meet this goal, or alternatively document good faith efforts to do so. **All construction projects require the use of Davis-Bacon wage rates for Douglas County, GA.**

DBE firms must be certified with the Georgia Department of Transportation's Equal Employment Opportunity (EEO) office.

Project Name/Project No.: GDOT project P.I. 0012621, Douglas County
Maxham Road Congestion Reduction and Traffic Flow Improvements Project

The proposed project would consist of operational and safety improvements along Maxham Road from State Route (SR) 6/Thornton Road to Tree Terrace Parkway. Minor widening would provide an additional through lane in each direction along Maxham Road through the SR 6/Thornton Road intersection. A westbound left turn lane at Tree

Terrace Parkway is also proposed as is the construction of a raised concrete median from SR 6/Thornton Road to Tree Terrace Parkway. Sidewalks would be reconstructed or provided from SR 6/Thornton Road to Reserve at Sweetwater Creek Apartments. The proposed sidewalks, crosswalks, and ramps would be constructed in compliance with American's With Disabilities Act (ADA) guidelines. Minor modifications would be made to the traffic signal at the Maxham Road intersection with SR 6/Thornton Road and the traffic signal at the Maxham Road intersection with Tree Terrace Parkway would be replaced. Total project length is 0.4 mile and all work would be done within existing right-of-way.

CONTRACT

The time allowed for performance of the project will be **365** consecutive calendar days. Liquidated damages assessed for failure to complete project within specified time frame as found in Section 108.08.

Payment will be made monthly based on approved invoices.

The **Contractor** must meet the current bid requirements of the Georgia Department of Transportation. The GDOT Standard Specifications Construction of Transportation Systems, 2013 Edition, Current Edition of the GDOT State of Georgia Supplemental Specifications Modifying the 2013 Standard Specifications Construction of Transportation Systems, applicable special provisions and supplemental specifications apply to the contract.

The Douglas County Georgia, Department of Transportation in accordance with Title VI of the Civil Rights Act of 1964 and 78 Stat. 252, 42 USC 2000d—42 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, part 21, Nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, national origin, disability, or age in consideration for an award.

The **Contractor** must also execute and submit "Contractor Affidavit and Agreement" (Page 2.12) as well as the "Subcontractor Affidavit and Agreement" (Page 2.13) and "Immigration and Compliance Certification" (Page 2.14) located in the contract documents and executed by all of their subcontractors **prior to beginning work** on the project.

Failure to comply with any of the requirements and procedures of the County (i.e., failure to timely supply required affidavits or compliance certification documents; failure to utilize federal work authorization procedures; failure to permit or facilitate audits or reviews of records by records by County officials upon request; and/or failure to continue to meet any of the statutory or County obligations during the life of the contract) shall constitute a material breach of the agreement and shall entitle the County to dismiss any general contractor or to require the dismissal of any subcontractor or sub/subcontractor (irrespective of tier) for failing to fully comply with these requirements, and

That upon notice of a material breach of these provisions, the **Contractor** (or subcontractor, regardless of tier) shall be entitled to cure the breach within ten (10) days and provide evidence of such cure. Should the breach not be cured, the County shall be entitled to all available remedies, including termination of the contract, the requirement that a subcontractor be dismissed from performing work under the contract, and any and all damages permissible by law.

Disadvantaged Business Enterprise (DBE) Participation and Small Business Participation (SBP) in all DOT contracts is encouraged. Contractors must submit a DBE participation report to the County prior to beginning work on a project and a final DBE report must be submitted at the end of a project. Monthly DBE reports must be submitted with each monthly invoice. If DBE participation changes during the course of a project, an updated participation report must be submitted to the County at the time of such change. No Small Business reports are currently required;

however, this is subject to change at the **County's** discretion.

For all bids on contracts involving utility work as defined in O.C.G.A. 43-14-1 et.seq., the **Contractor and/or its subcontractor(s)** that will perform utility work must have a valid State of Georgia Utility Contractor License and comply with all applicable provisions of Chapter 14 of Title 43 of O.C.G.A.

CONTRACT

Hereinafter called the "Project," for the sum of _____ and all extra work in connection therewith, under the terms as stated in the General Conditions, special Provisions and Detailed Specifications of the Contract, and at his/her/its/their own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the proposal the General Conditions, Special Provisions and Detailed Specifications of the Contract, the plans, which include all explanatory matter thereof, as prepared by Douglas
County, here entitled the "Engineers," the specifications and contract documents as enumerated in Section 105.03 of the General Conditions, all of which are made a part hereof and collectively constitute the Contract.

The **Contractor** further **proposes and agrees hereby to promptly commence the Work** with adequate force and equipment **within ten (10) calendar days from receipt of Notice to Proceed, or as may be specified by Special Provision, and to complete the Work within 365 consecutive calendar days from the issuance of the Notice to Proceed. Liquidated damages shall be assessed for failure to complete project within specified time frame as found in Section 108.08.**

The **County** agrees to pay the **Contractor** in current funds for the performance of the Contract subject to additions and deductions as provided in the General Conditions of the Contract, and to make payments on account thereof as provided in Section 109 of the Specifications, as modified in the General Conditions and Special Provisions.

If the Contract is awarded, it will be awarded to the lowest reliable bidder whose proposal shall have met all the prescribed requirements (Section 103.02). The low bid will be determined based on the sum of the base bid and any alternates selected by the Sponsor.

CONTRACT

IN WITNESS WHEREOF, the parties to those presents have executed this Contract in five (5) counterparts, each of which shall be deemed an original.

Executed this_____day of_____, 2019.

DOUGLAS COUNTY, GEORGIA

By:_____,
Dr. Romona Jackson Jones
Douglas County Commission Chairman

ATTEST:

_____
County Clerk

_____
Lisa Watson

_____
Witness

_____
Printed Name

_____
CONTRACTOR

_____

By:_____
Signature

_____
Printed Name

Title:_____

ATTEST:

_____
Secretary

_____
Printed Name

_____
Witness

_____
Printed Name

(Seal)

Give proper title of each person executing affidavit. Attach seal as required.

Section 3 GENERAL REQUIREMENTS

1. The work on this Project shall be governed by the 2013 Edition of the Georgia Department of Transportation Standard Specifications Construction of Transportation Systems, Current Edition of the GDOT State of Georgia Supplemental Specifications Modifying the 2013 Standard Specifications Construction of Transportation Systems, Special Provisions, and all current Supplemental Specifications.

   The materials used in The Work shall meet all quality requirements outlined in the GDOT Sampling, Testing, and Inspection Guide. Materials will not be considered as finally accepted until all tests, including any to be taken from the finished work, have been completed and evaluated. The contractor shall use suppliers on the appropriate GDOT Qualified Products List.

   Upon request by the Engineer, the Contractor shall furnish formal written invoices from the materials suppliers. The invoices shall show the quantities and the dates shipped.

2. **DEFINITIONS AND TERMS:** Delete the following paragraphs from Section 101 of the 2013 Edition of the Georgia Department of Transportation State of Georgia Standard Specifications Construction of Transportation System and replace with the following:

DELETE:	REPLACE WITH:
101.10 Board	**THE DOUGLAS COUNTY BOARD OF COMMISSIONERS**
101.13 Chief Engineer	**THE DIRECTOR OF THE DOUGLAS COUNTY DEPARTMENT OF TRANSPORTATION** or his duly authorized representative
101.14 Commissioner	**THE CHAIRMAN OF THE DOUGLAS COUNTY BOARD OF COMMISSIONERS**
101.22 Department	**THE DOUGLAS COUNTY DEPARTMENT OF TRANSPORTATION**
101.24 Engineer	Same as **101.13** - Chief Engineer (above)
101.62 State Highway Engineer	Same as **101.13** - Chief Engineer (above)
101.63 State	**THE DOUGLAS COUNTY BOARD OF COMMISSIONERS**
101.81 Treasurer	**THE DIRECTOR OF PURCHASING**

3. A Preconstruction Conference must be scheduled prior to issuance of Notice to Proceed. In attendance, at a minimum, will be Sponsor, Contractor, Selected DBE Firms, GDOT Area Engineer, GDOT Project Manager(s), and affected Utility Companies.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE_____

_____ (hereinafter called the Principal) and_____ (hereinafter called the Surety), a Corporation chartered and existing under the laws of the State of _____ _____with its principal offices in the City of _____ _____and authorized to do business in the State of Georgia, are held and firmly bound unto Douglas County, Georgia, in the full and just sum of : _____ _____DOLLARS, and_____CENTS ($_____) good and lawful money of the United States of America, to be paid upon demand to Douglas County, Georgia, to which payment will and truly to be made, we bind ourselves, our heirs, executors, administrators and assigns jointly and severally and firmly by these presents:

WHEREAS, the Principal is about to submit, or has submitted to Douglas County, Georgia, a Proposal for furnishing materials, labor and equipment for:

WHEREAS, the Principal desires to file this Bond in accordance with law in lieu of a certified Bidder's check otherwise required to accompany this proposal.

NOW, THEREFORE, the conditions of this obligation are such that if the Proposal be accepted, the Principal shall within fifteen (15) days after receipt of notification of the acceptance, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth in the form and manner required by Douglas County, Georgia, and **execute a sufficient and satisfactory Certificate of Liability Insurance, Performance Bond and Payment Bond payable to Douglas County, Georgia. The Performance Bond shall be 100% of the total Contract Price, and the Payment Bond shall be 110% of the total Contract Price,** in form and with security satisfactory to said Douglas County, Georgia, and otherwise to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to Douglas County, Georgia, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____day of _____,20__.

_____**(SEAL)**	_____**(SEAL)**
Principal	Surety
By:_____	By: _____
Address: _____	Address:_____
_____	_____
Telephone No: _____	Telephone No:_____

100% PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we_____, as Principals, hereinafter called Contractor, and_____, a corporation duly organized under the laws of the State of_____, listed in the latest issue of U.S. Treasury Circular 570, and registered in the State of Georgia, as Surety, are held and firmly bound unto **DOUGLAS COUNTY,** hereinafter called Owner, in the sum of _____

_____Dollars (in words), ($_____) (in figures), for payment of which sum, well and truly to be made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Contractor has entered into a written contract dated the___day of_, 20___, with the Owner for the **Maxham Road Congestion Reduction and Traffic Flow Improvements Project , GDOT project P.I. 0012621, Douglas County**
in accordance with drawings and specifications prepared by Douglas County Department of Transportation, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void otherwise shall remain in full force and effect. The Surety hereby waives notice of any alteration or extension of time made by the Owner. Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

A. Complete the Contract in accordance with its terms and conditions; or,

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

Any suit under this Bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

The Contractor is required to provide the Owner a one-year guarantee covering workmanship and materials of the Project. This Performance Bond shall remain in force for one year from the date of Acceptance of the Project by the Owner.

100% PERFORMANCE BOND

IN WITNESS WHEREOF, this instrument is executed in five (5) counterparts, each one of which shall be deemed an original, this_____day of_____, 20____.

_____(SEAL)
Principal (Bidder)

Attest:

_____
Signature

_____

_____
Typed Name

_____
Title

_____(SEAL)
Surety

Attest:

_____
Signature Attorney-in-Fact

_____

_____
Typed Name

(Attach Certified and Dated Copy of Power of Attorney)
DO NOT DATE PERFORMANCE BOND. BOND DOCUMENT WILL BE DATED BY BOC.
(Bond must not be dated prior to date of Agreement)

110% LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we_____, as Principal, hereinafter called a Contractor, and_____, a corporation duly organized under the laws of the State of_, listed in the latest issue of U.S. Treasury Circular 570, and registered in State of Georgia, as Surety, are held and firmly bound unto **DOUGLAS COUNTY**, hereinafter called Owner, in the sum of_____Dollars (in words), ($_____) (in figures), for the payment of which sum, well and truly to be made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Contractor has entered into a written contract dated the_____day of_____, 20 _____, with the Owner for the **Maxham Road Congestion Reduction and Traffic Flow Improvements Project , GDOT project P.I. 0012621, Douglas County**, in accordance with drawings dated 12/20/18, prepared by BHV for the Douglas County Department of Transportation.

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

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

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

C. No suit or action shall be commenced hereunder by any claimant,

1. Unless claimant, other than one having a direct contract with the Contractor, shall have given written notice to any two of the following: the Contractor, the Owner, or the Surety above-named, within ninety (90) days after such claimant did or performed the last of the work of labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Contractor, Owner or Surety, at any place where any office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

110% LABOR AND MATERIAL PAYMENT BOND

2. After one (1) year from the completion of Contract and the acceptance by Owner of the work thereunder, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

3. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment of payments made in good faith hereunder, inclusive of the payment by surety of mechanics' liens which may be filed on record against said improvement, whether or not claim for the amount of such presented under and against this bond.

PROVIDED FURTHER, that the Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED FURTHER, that no final settlement between Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claims may be unsatisfied.

THE REMAINDER OF THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

110% LABOR AND MATERIAL PAYMENT BOND

IN WITNESS WHEREOF, this instrument is executed in five (5) counterparts, each one of which shall be deemed an original, this_____day of_____, 20____.

Attest:

_____

_____(SEAL)
Principal (Bidder)

_____
Signature

_____
Typed Name

_____
Title

Attest:

_____

_____(SEAL)
Surety

_____
Signature Attorney-in-Fact

_____
Typed Name

(Attach Certified and Dated Power of Attorney)
DO NOT DATE PAYMENT BOND. BOND DOCUMENT WILL BE DATED BY BOC.
(Bond must not be dated prior to date of Agreement)

Effective December 6, 2011
First Use December 30, 2011

Title VI Assurances

for

Consultants, Contractors,
Subcontractors, Suppliers and Manufacturers

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

1. ***Compliance with Regulations***

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

2. ***Nondiscrimination***

   The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, national origin, disability, or age in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in 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 Subcontracts, Including Procurement of Materials and Equipment***

   In all solicitations either by competitive bidding or negotiations made by the Contractor for work to be performed under a subcontract, including procurement 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 ground of race, color, sex, national origin, disability, or age.

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, other sources of information and its facilities as may be determined by Douglas County, Georgia, Department of Transportation (DCDOT) or the Georgia Department of Transportation (GDOT) 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 Douglas DOT, or GDOT as appropriate, and shall set forth what efforts it has made to obtain the information.

5. ***Sanctions for Noncompliance***

   In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, DCDOT and GDOT 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.

The Contractor shall take such action with respect to any subcontractor or procurement as DCDOT or the Federal Highway Administration 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 such direction, the Contractor may request DCDOT to enter into such litigation to protect the interests of DCDOT and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States

EVIDENCE OF COMPLIANCE WITH GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT

The County and Contractor agree that compliance with the requirements of O.C.G.A. Sec. 13-10-91 and Rule 300-10-1-.02 of the Rules of the Georgia Department of Labor are conditions of this Agreement for the physical performance of services.

The Contractor represents that it employs:

_____500 or more employees;
_____100 or more employees; or
_____fewer than 100 employees
(*Contractor must initial appropriate category).*

The Contractor further agrees that its compliance with the requirements of O.C.G.A. Sec. 13-10-91 and DOL Rule 300-10-1-.02 is attested to on the executed Contractor Affidavit and Agreement attached hereto as EXHIBIT A.

If employing or contracting with any subcontractor(s) in connection with this Agreement, Contractor further agrees:

(1) To secure from the subcontractor(s) such subcontractor(s)') indication of the employee-number category applicable to the subcontractor(s); and
(2) To secure from the subcontractor(s) an affidavit attesting to the subcontractor's compliance with O.C.G.A. Sec. 13-10-91 and DOL Rule 300-10-1-.02; such affidavit being in the form attached hereto and referenced as EXHIBIT A-1; and
(3) To submit such contractor affidavit(s) to the County when the subcontractor(s) is retained, but in any event, prior to the commencement of work by the subcontractor(s),
(4) To submit to the County, such contractor and subcontractor affidavit(s) of "Immigration Compliance Certification," EXHIBIT A-2,

The failure of Contractor to comply with any of the requirements and procedures of the County (i.e. failure to timely supply required affidavits or compliance certification documents; failure to utilize federal work authorization procedures; failure to permit or facilitate audits or reviews of records by County or State officials upon request; and/or failure to continue to meet any of the statutory or County obligations) and to supply the affidavit of compliance at the time of execution of this Agreement and/or the failure of the Contractor to continue to satisfy the obligations of O.C.G.A. Sec. 13-10-91 and DOL Rule 300-10-1-.02 as set forth in this Agreement and during the term of the Agreement shall constitute a material breach of the Agreement and shall entitle the County to dismiss any general contractor or to require the dismissal of any subcontractor of sub/subcontractor (irrespective of tier) for failing to fully comply with these requirements and that upon notice of a material breach of these provisions, the Contractor shall be entitled to cure the breach within ten (10) days and provide evidence of such cure and in compliance with the terms of this Agreement and State law. Should the breach not be cured, the County shall be entitled to all available remedies, including termination of the contract, the requirement that a subcontractor be dismissed from performing work under the contract, and any and all damages permissible by law.

SEE AFFIDAVIT ON THE FOLLOWING PAGE

CONTRACTOR AFFIDAVIT AND AGREEMENT
(EXHIBIT A)

(Effective 10-28-2010)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is contracting with Douglas County, Georgia, has registered with, is authorized to use, and is participating in a federal work authorization program* (an electronic verification of work authorization program operated by the U.S. Department of Homeland Security or any equivalent federal work authorization program operated by the U.S. Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA)). The undersigned contractor further attests that it will continue to use the federal Employment Eligibility Verification (EEV) work authorization program throughout the contract period.

The undersigned further agrees that should it employ or contract with any subcontractor(s) or should its subcontractor(s) employ other subcontractor(s) for the physical performance of services pursuant to the contract with Douglas County, Georgia, the contractor or subcontractor will:

(1) Notify the County within five (5) business days of entering into a contract or agreement for hire with any subcontractor(s);
(2) Secure from any subcontractor(s) and/or their subcontractor(s) verification of compliance with O.C.G.A. § 13-10-91 on the attached Subcontractor Affidavit. (EXHIBIT A-1); prior to the commencement of any work under the contract/agreement;
(3) Secure from any subcontractor(s) and/or their subcontractor(s) a completed Immigration Compliance Certification (EXHIBIT A-2) prior to the commencement of any work under the contract/agreement;
(4) Provide the subcontractor(s) with legal notice that Douglas County, Georgia, reserves the right to dismiss, or require the dismissal of, any contractor or subcontractor for failing to provide the affidavit and/or for failure to comply with the requirements referenced in the affidavit;
(5) Maintain records of such compliance and provide a copy of each such verification to Douglas County, Georgia, at the time the subcontractor(s) is retained to perform such services or upon any request from Douglas County, Georgia; and
(6) Maintain such records for a period of five (5) years.

_____ _____
EEV (E-Verify) Program User ID Number EEV Program Date of Authorization

_____ _____
BY: Authorized Office of Agent Contractor Business Name
[Contractor Name]

_____ _____
Printed Name Date

SWORN AND SUBSCRIBED BEFORE ME ON THIS
THE___DAY OF_____, 201___

_____
Notary Public

Commission Expires:_____

THIS AFFIDAVIT MUST BE SIGNED, NOTARIZED AND SUBMITTED WITH ANY BID REQUIRING THE PERFORMANCE OF PHYSICAL SERVICES. IF THE AFFIDAVIT IS NOT SUBMITTED AT THE TIME OF THE BID, BID WILL BE DETERMINED NON-RESPONSIVE AND WILL BE DISQUALIFIED.

SUBCONTRACTOR AFFIDAVIT AND AGREEMENT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of Douglas County, Georgia, has registered with, is authorized to use, and is participating in a federal work authorization program* (an electronic verification of work authorization program operated by the U.S. Department of Homeland Security or any equivalent federal work authorization program operated by the U.S. Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA). The undersigned contractor further attests that it will continue to use the federal Employment Eligibility Verification (EEV) work authorization program throughout the contract period.

The undersigned further agrees that should it employ or contract with any subcontractor(s) or should its subcontractor(s) employ other subcontractor(s) for the physical performance of services pursuant to the contract with Douglas County, Georgia, the undersigned subcontractor will:

(1) Notify the County within five (5) business days of entering into a contract or agreement for hire with any subcontractor(s);

(2) Secure from any subcontractor(s) and/or their subcontractor(s) verification of compliance with O.C.G.A. § 13-10-91 on the attached Subcontractor Affidavit. (EXHIBIT A-1) prior to the commencement of any work under the contract/agreement;

(3) Secure from any subcontractor(s) and/or their subcontractor(s) a completed Immigration Compliance Certification (EXHIBIT A-2) prior to the commencement of any work under the contract/agreement;

(4) Provide the subcontractor(s) with legal notice that Douglas County, Georgia, reserves the right to dismiss, or require the dismissal of, any contractor or subcontractor for failing to provide the affidavit and/or for failure to comply with the requirements referenced in the affidavit; and

(5) Maintain records of such compliance and provide a copy of each such verification to Douglas County, Georgia, at the time the subcontractor(s) is retained to perform such services or upon request from Douglas County, Georgia;

(6) Maintain such records for a period of five (5) years.

_____ _____
EEV (E-Verify) Program User ID Number EEV Program Date of Authorization

_____ _____
BY: Authorized Officer or Agent Subcontractor Business
Name [Subcontractor Name]

_____ _____
Printed Name Date

SWORN AND SUBSCRIBED BEFORE ME ON
THIS THE_____DAY OF_____, 201___

_____
Notary Public

Commission Expires:_____

IMMIGRATION COMPLIANCE CERTIFICATION
(Required to be completed by Contractors and all Subcontractors)
(EXHIBIT A-2)

(Effective 10.28.10)

I certify to the Douglas County Board of Commissioners that the following employees will be assigned to:

Maxham Road Congestion Reduction and Traffic Flow Improvements Project , GDOT project P.I. 0012621, Douglas County

_____	_____	_____
_____	_____	_____
_____	_____	_____

I further certify to Douglas County, Georgia, the following:

- The E-Verify program was used to verify the employment eligibility of each of the above-listed employees hired after the effective date of our contract to use the program;
- We have not received a Final Non-Confirmation response from E-Verify for any of the employees listed;
- If we receive a Final Non-Confirmation response from E-Verify for any of the employees listed above, we will immediately terminate that employee's involvement with the project;
- I have confirmed that we have an I-9 on file for every employee listed above and that to the best of my knowledge all the I-9's are accurate;
- To the best of my knowledge and belief, all of the employees on the above list are legally authorized to work in the United States;
- If any other employee is assigned to this Douglas County project, a certification will be provided for said employee prior to the employee commencing work on the project

To the best of my knowledge and belief, the above certification is true, accurate and complete.

Sworn to by: **Employer Name & Address:**

_____ _____
Signature of Officer

_____ _____
Printed Name / Title

_____ _____
Date

SWORN AND SUBSCRIBED BEFORE ME ON THIS
THE_____DAY OF_____, 201___

Notary Public_____

Commission Expires:_____

DOUGLAS COUNTY
SUBCONTRACTORS NOTIFICATION LIST

Required information on subcontractors doing work in Douglas County.

Please list any subcontractors whom may perform work on this project, include their Business License number, the Activity or Commercially Useful Function (CUF*) they may perform, and if they are a DBE/MBE/WBE Firm.

GENERAL CONTRACTOR: ______________________________

LICENSE NUMBER: ____________

SUBCONTRACTOR: ____________________ LICENSE NUMBER: ____________

ACTIVITY/CUF *: ______________________________

DBE/MBE/WBE □Yes □No □ RN □RC GDOT UCP No: ____________

SUBCONTRACTOR: ____________________ LICENSE NUMBER: ____________

ACTIVITY/CUF*: ______________________________

DBE/MBE/WBE □Yes □No □ RN □RC GDOT UCP No: ____________

SUBCONTRACTOR: ____________________ LICENSE NUMBER: ____________

ACTIVITY/CUF*: ______________________________

DBE/MBE/WBE □Yes □No □ RN □RC GDOT UCP No: ____________

SUBCONTRACTOR: ____________________ LICENSE NUMBER: ____________

ACTIVITY/CUF*: ______________________________

DBE/MBE/WBE □Yes □No □ RN □RC GDOT UCP No: ____________

SUBCONTRACTOR: ____________________ LICENSE NUMBER: ____________

ACTIVITY/CUF*: ______________________________

DBE/MBE/WBE □Yes □No □ RN □RC GDOT UCP No: ____________

Note: All subcontractors must be reported on this form for License Inspection purposes.

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____

County of_____

_____, being first duly sworn, deposes, and says that:

(1) He is_____(Owner, Partner, Officer, Representative, or Agent) of__, hereinafter referred to as the "Subcontractor";

(2) He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to_____, the **Contractor** for certain work in connection with the____Contract pertaining to the Project in Douglas County, Georgia;

(3) Such Subcontractor's Proposal is genuine and is not a collusive or sham Proposal;

(4) Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract or to refrain from submitting a Proposal in connection with such Contract or has in any manner, directly or indirectly, sough by unlawful agreement or connivance with any other Bidder, firm, or person to fix the price or prices in said Subcontractor's Proposal, or to secure through collusion, conspiracy, connivance, or unlawful agreement any advantage against Douglas County or any person interested in the proposed Contract; and,

(5) The price or prices quoted in the Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the **Bidder** or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signed_____

Title_____(Seal)

_____
(Printed Name)

Subscribed and Sworn to before me this_____day of_____, 201_____.

_____

_____
Title

_____
(Printed Name)

My Commission Expires_____

Date:_____

NOTICE TO CONTRACTORS

ENVIRONMENTAL PROTECTION DIVISION (EPD)
AIR QUALITY RULES MODIFICATIONS

In September 1995, the Environmental Protection Division (EPD) modified the Rules for Air Quality Control (Chapter 391-3-1) as they pertain to Open Burning. These rules now state that **beginning in calendar year 1996 during the months of May, June, July, August and September in those counties of Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale, there will be a general prohibition against Open Burning from clearing and grubbing or construction or right-of-way maintenance.**

Effective January 1, 2001, the following counties were added to the list of counties where outdoor burning is banned during the months of May, June, July, August, and September. The counties are Banks, Barrow, Bartow, Butts, Carroll, Chattooga, Clarke, Dawson, Floyd, Gordon, Hall, Haralson, Heard, Jackson, Jasper, Jones, Lamar, Lumpkin, Madison, Meriwether, Monroe, Morgan, Newton, Oconee, Pickens, Pike, Polk, Putnam, Spalding, Troup, Upson and Walton.

Open Burning in other than predominantly residential areas for the purpose of land clearing or construction or right-of-way maintenance will be permitted in the months of October, November, December, January, February, March and April in the above counties provided the following conditions are met:

1. **Prevailing winds at the time of the burning are away from the major portion of the area's population;**
2. **The location of the burning is at least 1,000 feet from any dwelling located in a predominantly residential area;**
3. **The amount of dirt on or in the material being burned is minimized;**
4. **Heavy oils, asphaltic materials, items containing natural or synthetic rubber, or any materials other than plant growth are not being burned; and**
5. **No more than one pile 60 feet by 60 feet, or equivalent, is being burned within a 9 acre area at one time.**

In addition to the above provisions, the **EPD Rules require permits from the fire department and the Georgia Forestry Office, when required, and the use of air curtain destructors when Open Burning is permitted in these areas.**

For other provisions in counties with total population exceeding 65,000, see Environment Protection Division (EPD) Rules for Air Quality Control Chapter 391-3-1(15), Open Burning, effective December 28, 2000.

For more information about the Open Burning Ban, please contact the EPDs Air Protection Branch shown below:

Georgia Department of Natural Resources
Environmental Protection Division
Air Protection Branch
4244 International Parkway, Suite 120
Atlanta, Georgia 30354
(404) 363-7000

For more information about the **Open Burning Ban in Douglas County**, please contact the EPD:

Mountain District Office
16 Center Road, P. O. Box 3250
Cartersville, Georgia 30120
(770) 387-4900

SPECIAL NOTICE

METROPOLITAN ATLANTA NON-ATTAINMENT REGION
Smog Alert Days Policy for Douglas County Contractors

March 15, 1999

The Metropolitan Atlanta Region, of which Douglas County is a part, has been declared an Ozone Non- Attainment Region by the Federal Environmental Protection Agency. As a result of this non-attainment status, **Douglas County has instituted voluntary policies** in support of Regional Air Quality goals and in cooperation with the "Partnership for a Smog Free Georgia". One component of the County's Smog Alert Days Policy is to **encourage contractors** who are constructing projects within the County **to restrict operations that contribute to the formation of ozone, ground level smog, between the hours of 6:00 a.m. and 6:00 p.m. on "Smog Alert Days".**

"Smog Alert Days" **will be declared by the Georgia Department of Natural Resources by 6:00 p.m. on the day immediately preceding** the "Smog Alert Day". A "Smog Alert Day" is a **day when ozone levels are predicted to exceed the acceptable level for attainment** as **defined by the Clean Air Act** provisions.

On days that have been declared as Smog Alert Days, Douglas County DOT Contractors are encouraged to refrain from operating paving and heavy construction equipment between the hours of 6:00 a.m. and 6:00 *On* "Smog Alert Days", Douglas County DOT Contractors are also encouraged to avoid refueling motorized vehicles and equipment between the hours of 6:00 a.m. and 6:00 p.m. to limit single occupancy trips and to avoid the operation of gasoline powered small engines between the hours of 6:00 a.m. and 6:00 p.m.

The voluntary reductions of exhaust and particulate matter that would be produced by these operations will help the Metropolitan Atlanta Region meet its required reduction in ozone levels. **Failure to meet these requirements will result in further restrictions on the State and County's ability to acquire the necessary permits to pursue projects necessary to address the area's mobility needs and to sustain the local highway contracting industry.**

INSTRUCTIONS FOR LIST OF DBE PARTICIPANTS

If a DBE Goal is indicated, you must propose to achieve a goal that is equal or greater than the percentage required. If no goal is indicated, you may propose your own goal.

The DBE firms to be utilized as counting toward the proposed goal must be listed on this form, along with their addresses, type of work and the amount to be paid to each of the minority firms. The amount entered will not necessarily be the contract amount, but must be the actual amount that will be paid to the DBE firm. In the case of a DBE supplier, the amount paid and 60% of that amount both will be entered; and only the 60% figure should be added to the total. An example of this is shown in the example chart:

Vendor Number	Company Name And Address (City and State)	Type Of Work	*Work Code	Race Neutral	Race Conscious	Amount
	ABC Oil Company Atlanta, GA	Diesel Fuel Supplier				$80.000.00 (60%= $48,000.00)

* For Departmental use ONLY. Do not fill in Work Codes.

The Contractor shall indicate for each DBE and Type of Work whether the DBE Participant is Race Neutral or Race Conscious by placing a checkmark in the appropriate column.

PLEASE NOTE: For 60% of the amount paid to a DBE supplier to be eligible to count toward fulfilling the DBE goal, the supplier must be an established "regular dealer' in the product involved, and not just a broker. A "regular dealer" would normally sell the product to several customers and would usually have product inventory on hand.

DBE GOALS

DBE GOALS					
VENDOR ID:		**BIDDER'S COMPANY NAME:**			
GDOT Project P.I. 012621, Douglas County, Georgia		**Maxham Road Congestion and Traffic Flow Improvement Project, Douglas County**			
LET NO:		**LET DATE:**		**TOTAL BID:**	
THE REQUIRED DBE GOAL ON THIS CONTRACT IS: 15%					
I PROPOSE TO UTILIZE THE FOLLOWING DBE's:					
LIST OF DBE PARTICIPANTS					

VENDOR NUMBER	DBE NAME/ ADDRESS (CITY, STATE)	TYPE OF WORK	*WORK CODE	Race Neutral	Race Conscious	AMOUNT
			TOTAL			

***For Departmental use only. Do not fill in Work codes.**

PLEASE NOTE: Only 60 % of the participation of a DBE Supplier who does not manufacture or install the product will be counted toward the goal. See below for further instructions.

INSTRUCTIONS FOR LIST OF DBE PARTICIPANTS

If a DBE Goal is indicated, you must propose to achieve a goal that is equal or greater then the percentage required. If no goal is indicated, you may propose your own goal.

The DBE Firms to be utilized as counting toward the proposed goal must be listed on this form, along with their addresses, type of work and the amount to be paid to each of the minority firms. The amount entered will not necessarily be the contract amount, but must be the actual amount that will be paid to the DBE firm. In the case of a DBE supplier, the amount paid and 60% of that amount both will be entered; and only the 60% figure should be added to the total. An example of this is shown in the example chart:

Vendor Name	Company Name and Address (City and State)	Type of Work	*Work Code	Race Neutral	Race Conscious	Amount
	ABC Oil Company Atlanta, GA	Diesel Fuel Supplier				$80,000.00 (60% = $48,000.00)

* For Departmental use ONLY. Do not fill in WorkCodes.

The Contractor shall indicate for each DBE and Type of Work whether the DBE Participant is Race Neutral or Race Conscious by placing a checkmark in the appropriate column.

PLEASE NOTE: For 60% of the amount paid to a DBE supplier to be eligible to count toward fulfilling the DBE goal, the supplier must be an established "regular dealer" in the product involved, and not just a broker. A "regular dealer" would normally sell the product to several customers and would usually have product inventory on hand.

INSTRUCTIONS TO CONTRACTOR DBE PARTICIPATION REPORT

In order to receive credit toward the DBE Goal, the prime contractor must complete the report in its entirety and submit this form MONTHLY to the Project Manager in charge of the contract. Failure to submit this form will result in no credit toward the contract DBE requirements.

1 PROJECT NUMBER – This is the GDOT assigned project number – See Contract.

2 COUNTY – See Contract.

3 CONTRACT ID NUMBER – This is the GDOT Contract Identification Number – See Contract.

4 CONTRACTOR NAME –

5 REPORT SUBMISSION DATE – This is the date the report is completed.

6 REPORT NUMBER – Reports must be consecutively numbered.

7 REPORT TYPE – This should be checked monthly until all work has been completed, at which time the Report Type should be changed to Final and submitted to the Project Manager.

8 DATE WORK BEGAN – This is the date of the first day any work occurred on the project.

9 DBE REQUIRED PERCENTAGE – This is the total required % of the original contract amount.

10 CONTRACT $ AMOUNT – DBE Amount: *The DBE amount and percentage are the DBE amount and percentage shown in the original contract. (In some instances, this amount may be greater than the percentage amount and may exceed the percentage in the contract; for reporting purposes, the amount over the DBE percentage on this contract is considered race neutral). Original subcontract amount should be at least the amount listed in the contract. Any amounts above the race conscious number or percentage are counted as race neutral and should be shown on report on a separate line than the race conscience. The contractor cannot add the race neutral until the race conscious is exceeded.*

11 PERCENT $ COMPLETE – Insert the Percentage Complete, which reflects the percentage of project completed in dollars to the ending date of this report.

12 DBE $ AMOUNT – The is the total dollar amount representing the percentage of the original contract.

13 PERCENT PROJECT COMPLETE – Insert the Percentage of Project Complete, which indicates the time completed on the project.

14 DATE CLOSING THIS REPORT – Please check the appropriate date for the close of payments for this report.

15 SUPPLIER (S) – One who supplies material to the Project. The dollar value shown in the contracts for suppliers represents the calculated sixty percent (60%) dollar value of the original amount; therefore, the supplier percentage requires no further adjustments. The amount in the contact should be shown as the subcontract amount.

16 OWNER / OPERATOR (0) – One who owns and operates the equipment themselves.

17 SUBCONTRACTOR (SC) – Those who aren't a supplier or owner/operator.

18 SUBCONTRACTOR AGREEMENT RECEIVED (SAR): The Department requests that you supply a copy of valid executable subcontract agreements between your company and your DBE subcontractors per section 108.01 of the Standard Specifications. All subcontracts shall include the Required Contract Provisions, FHWA 1273 and the Cargo Preference Act Requirements; these provisions shall not be incorporated by reference. A copy of

subcontractor agreement (SAR) between the prime and each DBE must be submitted to the Area Engineer's Office.

19 RACE NEUTRAL (RN) – DBE participation that would have been used in the absence of any contract goal provisions.

20 RACE CONSCIOIUS – DBE participation that was utilized specifically to meet the proposed contract goal or portion thereof.

21 ORIGINAL SUBCONTRACT AMOUNT – This is the original amount shown in the Signed Contract.

22 PREVIOUS PAYMENTS – This totals all PAYMENTS prior to this report.

23 PAYMENTS THIS REPORT – These are the totals of PAYMENTS during this report period only.

24 PAYMENTS TO DATE – Show the actual amount that each DBE has payments to-date under the contract based on the unit prices paid to the DBE by the prime contractor and not contract unit prices. When a supplier is used to fulfill the DBE requirements, only 60% of the amount earned by the supplier may be entered. Show that total amount in the space provided.

25 CURRENT COLUMN TOTALS – Total each column.

26 PERCENT OF CONTACT – This percentage is calculated using the contract amount and the total DBE payments-to-date.

27 CERTIFICATION – The contractor or his authorized representative must sign this form prior to submittal. Failure to complete and submit this form in a timely manner may delay monthly progress payments.

28 DBE must perform at least 30% of work with own forces to meet commercially useful function criteria (49CFR26.55). If a DBE subcontracts part of the work of its contract to another firm, the value of the work can only be counted toward the DBE goal if the DBE's subcontractor is itself a DBE.

29 A DBE hauler must itself own and operate at least one fully licensed, insured and operational truck to be used on the contract.

30 Payments and commitments for Federal-aid projects **shall be separate and distinct and cannot be transferred or combined in any manner**.

31 Credits towards DBE goal can only be claimed after the amount being claimed toward the goal has been paid to the DBE. Attach cancelled checks: Prime Contractor shall submit documentation regarding all payments made from the Prime to all DBE subcontractors on federal aid projects in the form of copies of cancelled checks or notarized electronic documentation which validates said payments made on the DBE Monthly Participation Reports. This information shall be required monthly and submitted with the DBE Monthly Participation Report (49CFR26.11).

GENERAL INFORMATION

The prime contractor may change DBE firms only with the approval of the District Engineer, provided the changes confirm to contract regulations.

The prime contractor is responsible for sending a copy of the subcontractor agreement between the prime and its subcontractors to the Project Manager. After submitting this document to the Project Manager, the prime contractors checks the block on the DBE Participation Report. Only one copy of the subcontractor agreement is requested for each DBE subcontractor.

If the prime contractor has not submitted a copy of the subcontractor agreement between the prime and its DBE subcontractor(s), the project manager will contact the prime contractor and request this document.

The prime contractor is not requested to send copies of the subcontractor agreement signed with the DBE firms to multiple offices within GDOT. Sending this information to the Project Manager will satisfy the federal requirements.

The prime contractor is responsible to accurately complete the report prior to submitting to the department. Once submitted to the department, the department project manager is responsible for reviewing it for accuracy.

If the report is inaccurate, the department project manager shall send the report back to the prime contractor for corrections. Payment will be withheld by the Department until a correct report is received.

The prime contractor is required to submit the monthly DBE from the month of Notice To Proceed until the Final DBE Report is submitted. Payment will be withheld by the Department until the report is received.

Upon completion of the work, a final "DBE Participation Report" will be required and submitted to the Area Engineer prior to final payment. All information shown on the form must be completed, including the payments of each approved DBE.

Joint ventures between non-DBE and certified DBE: Only that portion of the work for which the DBE is responsible may be used to satisfy the requirements.

Should you have questions about the Monthly DBE Participation Report – ARRA Reporting, contact the local District Contracts Administration Office or District EEO Officer.

FOR DEPARTMENTAL USE ONLY:

Federal Law requires that the work of DBE contractors be monitored in the field as part of the effort to ensure that DBEs are actually performing the work (49CFR26.37 (b).

District EEO Officers must receive copies of the Monthly DBE Participation Reporting.

MONTHLY DBE PARTICIPATION REPORT

REPORT SUBMISSION DATE: _____

PROJECT NO.: _____
COUNTY: _____
CONTRACT ID NO.: _____
CONTRACTOR: _____

REPORT NO.: _____

NOTICE TO PROCEED: _____
DATE WORK BEGAN: _____
CONTRACT $ AMOUNT: _____
DBE $ AMOUNT: $ 0.00

DBE REQUIRED %: _____
% DOLLAR COMPLETE: _____
% PROJECT COMPLETE: _____

31-Jan	○	31-Jul	○
28-Feb	○	31-Aug	○
31-Mar	○	30-Sep	○
30-Apr	○	31-Oct	○
31-May	○	30-Nov	○
30-Jun	○	31-Dec	○

S = SUPPLIER SC = SUBCONTRACTOR

	APPROVED DBE			VENDOR ID	DESCRIPTION OF WORK	
	S	SC	ORIGINAL SUBCONTRACT AMOUNT	PREVIOUS PAYMENTS	PAYMENTS THIS REPORT	TOTAL PAYMENTS TO DATE
1						
RN	○	○				$ 0.00
RC	○	○				$ 0.00
2						
RN	○	○				$ 0.00
RC	○	○				$ 0.00
3						
RN	○	○				$ 0.00
RC	○	○				$ 0.00
4						
RN	○	○				$ 0.00
RC	○	○				$ 0.00
5						
RN	○	○				$ 0.00
RC	○	○				$ 0.00
6						
RN	○	○				$ 0.00
RC	○	○				$ 0.00

RN COLUMN TOTALS:	$ 0.00	$ 0.00	$ 0.00	$ 0.00
RC COLUMN TOTALS:	$ 0.00	$ 0.00	$ 0.00	$ 0.00

TOTAL % PAID TO DATE: _____

I HEREBY CERTIFY THAT THE ABOVE STATEMENT IS TRUE AND CORRECT AND SUPPORTING DOCUMENTATION IS ON FILE AND IS AVAILABLE FOR INSPECTION BY DEPARTMENT PERSONNEL AT ANY TIME.
ALL PARTICIPATION COUNTED TOWARD FULFILLMENT OF THE DBE GOALS IS (1) REAL AND SUBSTANTIAL; (2) ACTUALLY PERFORMED BY VIABLE, INDEPENDENT DBE OWNED FIRMS; AND (3) IN ACCORDANCE WITH THE SPIRIT OF APPLICABLE LAWS AND REGULATIONS.

PRINT NAME: _____
NAME / TITLE

SIGNATURE: _____

FOR DEPARTMENT USE ONLY

THIS DOCUMENT HAS BEEN REVIEWED AT THE PROJECT LEVEL BY:

PRINT NAME: _____
NAME / TITLE

SIGNATURE: _____
(Mandatory)

THIS DOCUMENT HAS BEEN REVIEWED AT THE DISTRICT LEVEL BY:

PRINT NAME: _____
NAME / TITLE

SIGNATURE: _____
(Mandatory)

Page 1 of 1

This form is located at: http://www.dot.ga.gov/PartnerSmart/Business/Documents/DBEPartReport-SinglePg.pdf

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

First Use 2013 Specifications: November 01, 2013

SPECIAL PROVISION

PROMPT PAYMENT:

Prime Contractors, who sublet a portion of their work, shall pay their subcontractors for satisfactory performance of their contracts no later than 10 calendar days from receipt of each payment made to them.

Any delay or postponement of payment among the parties may take place only for good cause with prior written approval from the Department.

If the contractor is found to be in noncompliance with these provisions, it shall constitute a breach of contract and further payments for any work performed may be withheld until corrective action is taken. If corrective action is not taken, it may result in termination of the contract.

All subcontract agreements shall contain this requirement.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

REQUIRED CONTRACT PROVISIONS FOR FEDERAL-AID CONTRACTS

BUY AMERICA

Revised: March 25, 1992
Revised: January 7, 1994
Revised: June 9, 1995
First Use 2013 Specifications: November 1, 2013

All manufacturing processes for steel and iron materials and steel and iron coatings permanently incorporated into this project must occur in the United States of America. However, pig iron and processed, pelletized, or reduced iron ore used in the production of these products may be manufactured outside the United States.

This requirement, however, does not prevent a minimal use of foreign materials and coatings, provided the cost of materials and coatings used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or $2,500.00, whichever is greater.

NOTE: Coatings include: epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of the material.

CONVICT PRODUCED MATERIALS

March 25, 1992
Revised: September 6, 1993
First Use 2013 Specifications: November 1, 2013

Materials produced by convict labor after July 1, 1991, may not be used for Federal-Aid highway construction projects unless it meets the following criteria:

1. The materials must be produced by convicts who are on parole, supervised release or probation from a prison; or,

2. If produced in a qualified prison facility, the amount of such materials produced in any 12-month period shall not exceed the amount produced in such facility for such construction during the 12-month period ending July 1, 1987. A qualified prison is defined as one producing convict made materials prior to July 1, 1987.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

FEDERAL AID CERTIFICATION
(English Project)

First Use Date 2013 Specifications: November 1, 2013

Failure to complete appropriate certification requirements identified below or submission of a false certification shall render the bid non-responsive.

EQUAL EMPLOYMENT OPPORTUNITY

I further certify that I have /have not participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that I have____/ have not____ filed with the Joint Reporting Committee, the Director of the *Office of Federal Contract Compliance,* a Federal Government contracting or administering agency, or the former *President's Committee on Equal Employment Opportunity,* all reports due under the applicable filing requirements.

I understand that if I have participated in a previous Contract or Subcontract subject to the Executive Orders above and have not filed the required reports that 41 CFR 60-1.7(b)(1) prevents the award of this Contract unless I submit a report governing the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

Reports and notifications required under 41 CFR 604, including reporting subcontract awards in excess of $10,000.00 should be addressed to:

Ms. Carol Gaudin
Regional Director, U. S. Department of Labor
Office of Federal Contract Compliance Programs, Region 4
Rm. 7B75
61 Forsyth St. SW
Atlanta GA 30303

EXAMINATION OF PLANS AND SPECIFICATIONS

I acknowledge that this Project will be constructed in English units.

I certify that I have carefully examined the Plans for this Project and the Standard Specifications, 2013 Edition, Current Edition of GDOT State of Georgia Supplemental Specifications Modifying the 2013 Standard Specifications Construction of Transportation Systems, Supplemental Specifications and Special Provisions included in and made a part of this Proposal, and have also personally examined the site of the work. On the basis of the said Specifications and Plans, I propose to furnish all necessary machinery, tools, apparatus and other means of construction, and do all the work and furnish all the materials in the manner specified.

I understand the quantities mentioned are approximate only and are subject to either increase or decrease and hereby propose to perform any increased or decreased quantities of work or extra work on the basis provided for in the Specifications.

I also hereby agree that the State, or the Department of Transportation, would suffer damages in a sum equal to at least the amount of the enclosed Proposal Guaranty, in the event my Proposal should be accepted and a Contract

tendered me thereunder and I should refuse to execute same and furnish bond as herein required, in consideration of which I hereby agree that, in the event of such failure on my part to execute said Contract and furnish bond within fifteen (15) days after the date of the letter transmitting the Contract to me, the amount of said Proposal Guaranty shall be and is hereby, forfeited to the State, or to the Department of Transportation, as liquidated damages as the result of such failure on my part.

I further propose to execute the Contract agreement described in the Specifications as soon as the work is awarded to me, and to begin and complete the work within the time limit provided. I also propose to furnish a Contract Bond, approved by the State Transportation Board, as required by the laws of the State of Georgia. This bond shall not only serve to guarantee the completion of the work on my part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted, as well as to fully comply with all the laws of the State of Georgia.

CONFLICT OF INTEREST

By signing and submitting this Contract I hereby certify that employees of this company or employee of any company supplying material or subcontracting to do work on this Contract will not engage in business ventures with employees of the Georgia Department of Transportation (GA D.O.T.) nor shall they provide gifts, gratuities, favors, entertainment, loans or other items of value to employees of this department.

Also, by signing and submitting this Contract I hereby certify that I will notify the Georgia Department of Transportation through its District Engineer of any business ventures entered into between employees of this company or employees of any company supplying material or subcontracting to do work on this Contract with a family member of GA D.O.T. employees.

DRUG FREE WORKPLACE

The undersigned certifies that the provisions of Code Sections 50-24-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the "Drug-free Workplace Act", have been complied with in full. The undersigned further certifies that:

(1) A drug-free workplace will be provided for the Contractor's employees during the performance of the Contract; and

(2) Each Contractor who hires a Subcontractor to work in a drug-free workplace shall secure from that Subcontractor the following written certification:

> "As part of the subcontracting agreement with (Contractor's name) _____, (Subcontractor's name) _____ certifies to the Contractor that a drug free workplace will be provided for the Subcontractor's employees during the performance of this Contract pursuant to paragraph (7) of subsection (b) of Code Section 50-24-3."

Also, the undersigned further certifies that he will not engage in the unlawful manufacture, sale distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Contract.

BOYCOTT OF ISRAEL

By signing and submitting this Contract and Pursuant to O.C.G.A. Sec. 50-5-85, CONTRACTOR hereby certifies that it is not currently engaged in, and agrees that for the duration of this contract, it will not engage in a boycott of Israel.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

NON-COLLUSION CERTIFICATION

I hereby certify that I have not, nor has any member of the firm(s) or corporation(s), either directly or indirectly entered into any agreement, participated in any collusion, nor otherwise taken any action in restraint of free competitive bidding in connection with this submitted bid.

It is understood and agreed that this Proposal is one of several competitive bids made to Douglas County, and in consideration of mutual agreements of the bidders, similar hereto, and in consideration of the sum of One Dollar cash in hand paid, receipt whereof is hereby acknowledged, the undersigned agrees that this Proposal shall be an option, which is hereby given by the undersigned to Douglas County to accept or reject this Proposal at any time within that prescribed in Section 103.02 (Award and Execution of Contract) (of the Special Provisions, Section IV, of this Contract), unless a longer period is specified in the Proposal or the successful bidder agrees in writing to a longer period of time for the award, and in consideration of the premises, it is expressly covenanted and agreed that this Proposal is not subject to withdrawal by the Proposer or Bidder, during the term of said option.

I hereby acknowledge receipt of the following checked amendments of the Proposal, Plans, Specifications and/or other documents pertaining to the Contract.

Amendment Nos.: 1 2 3 4 5 _. I understand that failure to confirm the receipt of amendments is cause for rejection of bids.

Witness my hand and seal this the ____ day of_____, 20_____.

The bidder(s) whose signature(s) appear on this document, having personally appeared before me, and being duly sworn, deposes and says that the above statements are true and correct.

Sworn to and subscribed before me this _____ day of_____, 20_____.

_____
(Notary Public)

My Commission expires the_____day of _____, 20_____.

_____
(Federal ID No./IRS No.)

_____
(Print Company Name)

By_____(Seal)
Corporate President/Vice President or
Individual Owner or Partner (Strike
through all except the one which applies.)

Joint Bidder:

_____
(Print Company Name)

By_____(Seal)
Corporate President/Vice President or
Individual Owner or Partner (Strike
through all except the one which applies.)

Joint Bidder:

_____
(Print Company Name)

By__(Seal)
Corporate President/Vice President or
or Individual Owner or Partner (Strike
through all except the one which applies.)

FINAL AFFIDAVIT

TO DOUGLAS COUNTY, GEORGIA

I,_____, hereby certify that all supplies of materials, equipment and service, subcontractors, mechanics, and laborers employed by _____ _____or any of his subcontractors in connection with the construction of _____ _____at Douglas County have been paid and satisfied in full as of_____, 201___ , and that there are no outstanding obligations or claims of any kind for the payment of which Douglas County on the above named project might be liable, or subject to, in any lawful proceeding at law or in equity.

_____
Signature

_____
Printed Name

_____
Title

Personally appeared before me this_____day of_____, 201_____,

_____,who under oath deposes and says that he is _____of the firm of_____that he has read the above statement and that to the best of his knowledge and belief same is an exact true statement.

_____
Notary Public

_____
Printed Name

My Commission Expires

_____

END OF SECTION

"BID RIGGING"

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 AM to 5:00 PM, Eastern Time. Anyone with the knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse, and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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

ATTACHMENTS

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

I. GENERAL

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

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

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

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

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

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

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

II. NONDISCRIMINATION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6. Training and Promotion:

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

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

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

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

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

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

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

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

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

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

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

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

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

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

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

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

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

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

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

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

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

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

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

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

III. NONSEGREGATED FACILITIES

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

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

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

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

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

1. Minimum wages

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

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

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

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

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

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

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

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

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

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

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

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

2. Withholding

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

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

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

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

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

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

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

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

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

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

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

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

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

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

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

b. Trainees (programs of the USDOL).

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

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

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

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

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

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

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

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

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

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

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

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

10. Certification of eligibility.

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

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

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

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

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

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

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

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

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

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

VII. SAFETY: ACCIDENT PREVENTION

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

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

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

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

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

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

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

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

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

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

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

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

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

1. Instructions for Certification – First Tier Participants:

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

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

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

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

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

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

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

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

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

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

*****

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

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

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

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

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

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

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

2. **Instructions for Certification - Lower Tier Participants:**

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

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

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

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

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

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

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

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

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

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

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

* * * * *

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

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GEORGIA DEPARTMENT OF TRANSPORTATION
REQUIRED CONTRACT PROVISIONS, FEDERAL-AID HIGHWAY PROGRAM

EFFECTIVE FEBRUARY 15, 2016

The Cargo Preference Act (CPA) establishes certain requirements for the use of privately owned United States-flag commercial vessels in transporting equipment, materials, and commodities by ocean vessel. Contractors are required to comply with the CPA requirements and 46 CFR 381 and are required to insert the substance of these provisions into any subcontracts issued pursuant to this contract.

Cargo Preference Act Requirements

All Federal-aid projects shall comply with 46 CFR 381.7 (a)–(b) as follows:

(a) *Agreement Clauses.* Use of United States-flag vessels:

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(b) *Contractor and Subcontractor Clauses.* Use of United States-flag vessels: The contractor agrees—

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the Gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

The CPA requirements would be appropriate for oceanic shipments of materials or equipment that is intended for use on a specific Federal-aid project, such as a precast concrete structural members,

fabricated structural steel, tunnel boring machines, or large-capacity cranes.

The CPA requirements are not applicable for goods or materials that come into inventories independent of an FHWA funded-contract. For example, the requirements would not apply to shipments of Portland cement, asphalt cement, or aggregates, as industry suppliers and contractors use these materials to replenish existing inventories. In general, most of the materials used for highway construction originate from existing inventories and are not acquired solely for a specific Federal-aid project.

A test for whether CPA requirements apply or do not apply to shipped goods or materials would be if the goods or materials are what one would consider to be common inventory supplies for highway construction contractor, then CPA would **not apply**. If the materials or goods are considered to be supplies one would consider to be not common supplies of a highway construction contractor then CPA would **apply**.

COMMERCIALLY USEFUL FUNCTION GDOT EEO5 2014
PROJECT SITE REVIEW (CONSTRUCTION PROJECTS)

Per 49 CFR 26.55, *"A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved"*. It is the primary responsibility of the Prime Contractor to ensure that the DBE is performing a CUF. The Department, as the contracting agency, has oversight responsibility to ensure that the Prime Contractor has effectively met this responsibility under its contract with the Department.

- Document a minimum of one review for each DBE for each project with a DBE goal. File the completed form in the official project records with the applicable DBE report. The review should be started when the DBE first begins work and is not complete until the DBE has received a payment. Continue to monitor compliance through the course of the project. Use the CUF form to document any further noted concerns or inconsistencies. Contact the District EEO Officer if you believe a DBE may not be performing a Commercially Useful Function (CUF), or if you have any questions related to the program. This form does not document every possible question or concern. Monitoring the DBE for CUF is a continuous process through the life of the project.

Project Number: County: Prime Contractor:	GDOT Reviewer: Reviewer's Title: Review Date:

DBE Name:

DBE is performing as a Contractor: The Prime Contractor ☐ A Subcontractor ☐ A Tier Subcontractor ☐

DBE is performing as a Material Supplier: A Manufacturer ☐ A Regular Dealer ☐ A Broker ☐

Scope of Work
Provide a brief description of the DBE's scope of work. (Refer to Subcontract Agreement and/or Purchase Order if needed.)

	YES	NO
A. Prime Contractor Interview and Subcontract Approval		
1. Does the Prime Contractor have a process in place to substantiate the DBE's CUF and the allowable credit toward the DBE goal in the Contract?	☐	☐
2. Is the DBE only using equipment it owns, rents, or leases? (Obtain copies of all rent or lease agreements).	☐	☐
3. Is the DBE performing *at least* 30% of their work described in the subcontract?	☐	☐
4. Does the DBE hauling firm own or lease their trucks? (Obtain copies of lease agreements, if applicable).....(NA ☐)	☐	☐
B. Field Observations during work inspection and Payroll Inspection		
1. Is the DBE firm supervising its employees and their work?	☐	☐
2. Is the supervisor a full-time employee of the DBE?	☐	☐
3. Is the DBE working without assistance from the prime contractor or another subcontractor? (Use of prime's equipment in an emergency is allowed but the cost associated with the use of the equipment cannot be credited towards the goal.)	☐	☐
4. Are DBE leased trucks properly placard?	☐	☐
C. Labor Interviews		
1. Does the DBE have employees on the job to perform the work?	☐	☐
2. Do the DBE's employees only work for the DBE?	☐	☐
D. Material Invoice Inspection		
1. Does a review of the haul tickets associated with the project indicate that hauling is being performed by the DBE?.....(NA ☐)	☐	☐
2. Does the DBE's name appear on all invoices, haul tickets, and/or bills of lading?		
E. Commensurate		
1. Is Payment received by the DBE comparable with the work being performed? (Comparison of DBE report, canceled checks, subcontract, and inspection pay reports).	☐	☐
F. Joint Checks... *(if applicable)*	☐	☐
1. Is the Prime paying the DBE and the DBE's Supplier with one check?	☐	☐
G. CUF		
1. Does the DBE appear to be performing a Commercially Useful Function (CUF)? (If no, provide comments and ***contact your District EEO Officer at _____***	☐	☐

COMMENTS: *if any response recorded in section A- E is "no", comments explaining the "no" are mandatory.* Attach a 2nd page if necessary.

COMMERCIALLY USEFUL FUNCTION (CUF)
PROJECT SITE REVIEW *(CONSTRUCTION PROJECTS)*

CUF DETERMINANTS

PERFORMING

a. DBE must be responsible for performing its own work on the project
b. At least 30% of the work must be performed by the DBE with its own workforce
c. The DBE keeps a regular workforce and has its own employees
d. The DBE is utilizing its own equipment
e. Operation of the equipment must be subject to the full control of the DBE

RED FLAGS

- A portion of the DBE's work being done by the Prime Contractor or jointly with another contractor
- Employee working for both the Prime and the DBE
- Equipment used by DBE belongs to the Prime Contractor or another contractor with no formal lease agreement
- Equipment signs and markings cover another contractor's identity

RECORDS/DOCUMENTS

- Subcontract Agreement or Purchase Order
- Equipment ownership, rental or lease documents
- Certified payrolls

MATERIALS (For material credit)

a. DBE is responsible for the delivery of the materials
b. DBE is ordering the material and invoices indicate that DBE is the customer
c. Material invoices indicate that DBE owner or Superintendent is the contact person
d. Department has approved use of joint checks

RED FLAGS

- Materials for DBE credited work are delivered by the Prime Contractor
- Materials are ordered billed to, and/or paid by the Prime Contractor
- Invoices do not indicate that DBE is the customer
- Prime's employee is listed as the contact person on invoices
- Materials come from Prime's stockpiles

RECORDS/DOCUMENTS

- Invoices
- Haul tickets or Bills of Lading
- Material on Hand documentation
- Joint check agreement
- Cancelled checks

SUPERVISING

a. DBE supervisor is a full-time employee of the DBE
b. Employees are being supervised by DBE supervisor
c. DBE is scheduling work operations

RED FLAGS

- DBE's employees are being supervised by Prime Contractor or another contractor
- DBE provides little or no supervision of work
- DBE supervisor is not a full-time employee of the DBE

RECORDS/DOCUMENTS

- Certified Payrolls
- Document communication with DBE owner or Superintendent

CUF Inspection Form Instructions

The form does not and is not intended to document every possible CUF consideration. CUF is recognized during the normal course of inspecting the DBE's work on the project. The form merely records that CUF was inspected for the benefit of the record, and provides evidence to FHWA that CUF is being reviewed. It is the primary responsibility of the prime contractor to ensure that the DBE is performing a CUF. GDOT, as the contracting agency, has oversight responsibility to ensure that the prime contractor has effectively met this responsibility under its contract with the Department.

I. **Preconstruction Meetings:**
Remind the Prime contractor/s about the DBE goal and the contract requirements. Briefly go through the list of DBEs in the contract and what they will be performing. Remind the contractor about their CUF responsibilities identified in the Contract – Special Provision "Criteria for Acceptability". DBEs must perform a commercially useful function by actually performing, managing, and supervising the work involved. Credit toward the goal must not be reported on the monthly report unless the DBE is serving a CUF. You may ask the prime at this time if they have a CUF Process. If they say no, EEO will provide them guidance prior to the DBEs beginning work. Remind the Contractor, the Superintendent shall notify the Engineer prior to starting any Pay Item Work. The Prime Contractor shall coordinate and be responsible to the Engineer for all activities of subcontractors.

II. **Construction phase:**
Be familiar with the Contractors progress schedule. When will the DBEs begin work and on what items. The Prime contractor must not do the work of the DBE without the Engineers approval. Make certain the Prime gets a subcontract approval prior to the DBE begins work. And obtain a physical copy of the subcontract or supply agreement.

III. **Reviewing the Subcontract:**
The physical subcontract must be specific as to the work the DBE will perform. If the subcontract states: *furnish and install*, the expectation should be that the DBE will pay for the materials. If the subcontract merely states the DBE will *install, haul, or perform the work*, the Prime may have made arrangements to supply the materials themselves.

IV. **DBE begins work—CUF Form**
Begin the inspection by interviewing the Prime. Section A of the form. The intent is to establish that the contractor is aware of their responsibilities. Sections B through F are observations made during the normal course of inspecting the DBEs work.

Document a minimum of one review for each DBE for each project with a DBE goal. File the completed form in the official project records with the applicable DBE report. If your project is audited by a State or Federal agency, the expectation will be that each DBE that has worked on the project has had at least one documented CUF inspection.

The review should be started when the DBE first begins work and is not complete until the DBE has received a payment. Continue to monitor compliance through the course of the project. Use the CUF form to document any further noted concerns or inconsistencies.

Contact the District EEO Officer if you believe a DBE may not be performing a Commercially Useful Function (CUF), or if you have any questions related to the program. This form does not document every possible question or concern. Monitoring the DBE for CUF is a continuous process through the life of the project. Training is available online to aide in identifying fronts, scams, and pass-through schemes.

Davis Bacon Wage Rate Determination

Davis Bacon Wage Rate Determination

General Decision Number: GA190242 01/04/2019 GA242

Superseded General Decision Number: GA20180254

State: Georgia

Construction Type: Highway

County: Douglas County in Georgia.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded(and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher)for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019

SUGA2014-076 10/03/2016

	Rates	Fringes
CARPENTER, Excludes Form Work	$ 16.19	0.00
CEMENT MASON/CONCRETE FINISHER	$ 17.69	0.00
FENCE ERECTOR	$ 16.54	0.00
FORM WORKER	$ 15.26	2.08
HIGHWAY/PARKING LOT STRIPING:		
Operator (Striping Machine)	$ 12.37	1.95
INSTALLER - GUARDRAIL	$ 15.65	0.00
INSTALLER - SIGN	$ 13.03	0.00

IRONWORKER, REINFORCING	$ 14.64	0.00
IRONWORKER, STRUCTURAL	$ 15.12	0.00
LABORER: Concrete Paving Joint Sealer	$ 17.66	0.00
LABORER: Grade Checker	$ 11.45	0.00
LABORER: Mason Tender - Brick	$ 11.61	0.00
LABORER: Mason Tender - Cement/Concrete	$ 11.44	0.00
LABORER: Pipelayer	$ 12.45	0.00
LABORER: Asphalt (Includes Distributor, Raker, Screed, Shoveler, and Spreader)	$ 13.15	0.00
LABORER: Common or General, Includes Erosion Control	$ 10.67	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 18.14	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 13.38	0.00
OPERATOR: Broom/Sweeper	$ 14.83	1.38
OPERATOR: Bulldozer	$ 16.07	1.81
OPERATOR: Compactor	$ 14.64	0.00
OPERATOR: Concrete Saw	$ 18.94	0.00
OPERATOR: Crane	$ 21.06	4.24
OPERATOR: Distributor	$ 17.00	1.93
OPERATOR: Grader/Blade	$ 18.42	5.04
OPERATOR: Hydroseeder	$ 15.20	0.00
OPERATOR: Loader	$ 14.27	1.49
OPERATOR: Mechanic	$ 19.54	0.00
OPERATOR: Milling Machine Groundsman	$ 13.43	1.24
OPERATOR: Milling Machine	$ 16.00	1.31
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	$ 16.50	2.93
OPERATOR: Piledriver	$ 16.70	0.00
OPERATOR: Roller	$ 13.86	1.35

OPERATOR: Scraper	$ 12.64	0.00
OPERATOR: Screed	$ 14.67	1.86
OPERATOR: Shuttle Buggy	$ 14.06	1.98
PAINTER: Spray	$ 23.30	0.00
TRAFFIC CONTROL: Flagger	$ 12.26	0.88
TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper	$ 13.29	0.00
TRAFFIC SIGNALIZATION: Laborer	$ 13.75	1.14
TRAFFIC SIGNALIZATION: Electrician	$ 23.41	4.26
TRUCK DRIVER: Dump Truck	$ 15.00	0.00
TRUCK DRIVER: Flatbed Truck	$ 14.91	1.07
TRUCK DRIVER: Hydroseeder Truck	$ 16.74	0.00
TRUCK DRIVER: Lowboy Truck	$ 18.98	0.00
TRUCK DRIVER: Off the Road Truck	$ 12.38	0.00
TRUCK DRIVER: Pickup Truck	$ 13.29	0.00
TRUCK DRIVER: Water Truck	$ 13.19	1.46
TRUCK DRIVER: Semi/Trailer Truck	$ 16.26	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local),a survey rate (weighted average rate) or a union average rate(weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example:
PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.)and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

APPENDIX A - BID FORM

APPENDIX A

Bid Summary - GDOT Project P.I. 0012621

Sheet 1 of 7

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
	ROADWAY				
150-1000	TRAFFIC CONTROL - PI 0012621	LS	1		
156-0100	GPS DATA COLLECTION AND SUBMITTAL	LS	1		
210-0100	GRADING COMPLETE - PI 0012621	LS	1		
310-1101	GR AGGR BASE CRS, INCL MATL	TN	2067		
318-3000	AGGR SURF CRS	TN	150		
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	3637		
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	446		
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	75		
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	TN	226		
402-4510	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM MATL & H LIME	TN	1172		
413-0750	TACK COAT	GL	916		
432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	931		
441-0018	DRIVEWAY CONCRETE, 8 IN TK	SY	200		
441-0104	CONC SIDEWALK, 4 IN	SY	2495		
441-0108	CONC SIDEWALK, 8 IN	SY	126		
441-0754	CONCRETE MEDIAN, 7 1/2 IN	SY	526		

This unit price bid schedule can be inserted as an amended page in the bid documents. **DO NOT DISASSEMBLE THE BID DOCUMENTS.**

Bid Summary - GDOT Project P.I. 0012621

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
441-5004	CONCRETE HEADER CURB, 10 IN, TP 4	LF	31		
441-6216	CONC CURB & GUTTER, 8 IN X 24 IN, TP 2	LF	4235		
446-1100	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	LF	2479		
500-3800	CLASS A CONCRETE, INCL REINF STEEL	CY	45		
500-9999	CLASS B CONC, BASE OR PVMT WIDENING	CY	92		
515-2020	GALV STEEL PIPE HANDRAIL, 2 IN, ROUND	LF	295		
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	1164		
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10	LF	470		
550-1300	STORM DRAIN PIPE, 30 IN, H 1-10	LF	145		
550-1301	STORM DRAIN PIPE, 30 IN, H 10-15	LF	31		
550-4230	FLARED END SECTION 30 IN, STORM DRAIN	EA	2		
611-3000	RECONSTR CATCH BASIN, GROUP 1	EA	2		
611-3001	RECONSTR CATCH BASIN, GROUP 1, ADDL DEPTH	LF	2		
611-3010	RECONSTR DROP INLET, GROUP 1	EA	1		
611-3030	RECONSTR STORM SEW MANHOLE, TYPE 1	EA	3		
611-3100	RECONSTR JUNCTION BOX	EA	2		
611-8050	ADJUST MANHOLE TO GRADE	EA	6		
611-8140	ADJUST WATER VALVE BOX TO GRADE	EA	6		
621-6201	CONCRETE SIDE BARRIER, TP 2-SA	LF	242		

This unit price bid schedule can be inserted as an amended page in the bid documents. **DO NOT DISASSEMBLE THE BID DOCUMENTS.**

Bid Summary - GDOT Project P.I. 0012621

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
621-6202	CONCRETE SIDE BARRIER, TP 2-SB	LF	53		
621-6210	CONCRETE SIDE BARRIER, TP 6-S	LF	113		
621-6211	CONCRETE SIDE BARRIER, TP 6-SA	LF	63		
634-1200	RIGHT OF WAY MARKERS	EA	3		
641-1100	GUARDRAIL, TP T	LF	29		
641-1200	GUARDRAIL, TP W	LF	866		
641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	2		
641-5015	GUARDRAIL ANCHOR, TP 12A, 31 IN, TANGENT, ENERGY-ABSORBING	EA	2		
643-8200	BARRIER FENCE (ORANGE), 4 FT	LF	725		
668-1100	CATCH BASIN, GP 1	EA	23		
668-1110	CATCH BASIN, GP 1, ADDL DEPTH	LF	13		
668-2100	DROP INLET, GP 1	EA	4		
668-4300	STORM SEWER MANHOLE, TP 1	EA	7		
668-4311	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	LF	19		
670-9710	RELOCATE EXIST FIRE HYDRANT	EA	4		
	SIGNING & MARKING				
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	146		

This unit price bid schedule can be inserted as an amended page in the bid documents. DO NOT DISASSEMBLE THE BID DOCUMENTS.

Bid Summary - GDOT Project P.I. 0012621

Sheet 4 of 7

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
636-1036	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	106		
636-2070	GALV STEEL POSTS, TP 7	LF	344		
639-2002	STEEL WIRE STRAND CABLE, 3/8 IN	LF	250		
639-4004	STRAIN POLE, TP IV	EA	2		
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	19		
653-0130	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	EA	2		
653-0170	THERMOPLASTIC PVMT MARKING, ARROW, TP 7	EA	2		
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	6481		
653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	3107		
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	392		
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	4410		
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	5415		
653-3502	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	GLF	105		
653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	157		
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	408		
654-1001	RAISED PVMT MARKERS TP 1	EA	68		

This unit price bid schedule can be inserted as an amended page in the bid documents. DO NOT DISASSEMBLE THE BID DOCUMENTS.

Bid Summary - GDOT Project P.I. 0012621

Sheet 5 of 7

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
654-1003	RAISED PVMT MARKERS TP 3	EA	207		
	SIGNALIZATION				
682-9950	DIRECTIONAL BORE - 5 IN	LF	320		
682-9950	DIRECTIONAL BORE - 6 IN	LF	95		
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	34		
639-3004	STEEL STRAIN POLE, TP IV, INCL 45 FT MAST ARM	EA	1		
639-3004	STEEL STRAIN POLE, TP IV, INCL 60 FT MAST ARM	EA	1		
639-3004	STEEL STRAIN POLE, TP IV, INCL 65 FT MAST ARM	EA	1		
647-1000	TRAFFIC SIGNAL INSTALLATION NO – 1 – THORNTON RD AT MAXHAM RD	LS	1		
647-1000	TRAFFIC SIGNAL INSTALLATION NO – 2 – MAXHAM RD AT TREE TERRACE	LS	1		
682-6233	CONDUIT, NONMETL, TP 3, 2 IN	LF	2075		
687-1000	TRAFFIC SIGNAL TIMING -	LS	1		
	PERMANENT EROSION CONTROL				
603-2181	STN DUMPED RIP RAP, TP 3, 18 IN	SY	200		
603-7000	PLASTIC FILTER FABRIC	SY	200		

This unit price bid schedule can be inserted as an amended page in the bid documents. **DO NOT DISASSEMBLE THE BID DOCUMENTS.**

Bid Summary - GDOT Project P.I. 0012621

Sheet 6 of 7

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
700-6910	PERMANENT GRASSING	AC	1		
700-7000	AGRICULTURAL LIME	TN	4		
700-8000	FERTILIZER MIXED GRADE	TN	1		
700-8100	FERTILIZER NITROGEN CONTENT	LB	73		
700-9300	SOD	SY	3134		
702-1039	SCIRPUS AMERICANUS – BARE ROOT	EA	986		
716-2000	EROSION CONTROL MATS, SLOPES	SY	3233		
	TEMPORARY EROSION CONTROL				
163-0232	TEMPORARY GRASSING	AC	2		
163-0240	MULCH	TN	30		
163-0300	CONSTRUCTION EXIT	EA	2		
163-0310	CONSTRUCTION EXIT TIRE WASH ASSEMBLY	EA	2		
163-0528	CONSTRUCT AND REMOVE FABRIC CHECK DAM - TYPE C SILT FENCE	LF	50		
163-0541	CONSTRUCT AND REMOVE ROCK FILTER DAMS	EA	4		
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	39		

This unit price bid schedule can be inserted as an amended page in the bid documents. **DO NOT DISASSEMBLE THE BID DOCUMENTS**

Bid Summary - GDOT Project P.I. 0012621

Sheet 7 of 7

Item No.	Item Description	Units	Quantity	Unit Price	Bid Amount
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	5024		
165-0041	MAINTENANCE OF CHECK DAMS - ALL TYPES	LF	50		
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	2		
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	39		
165-0110	MAINTENANCE OF ROCK FILTER DAM	EA	4		
165-0310	MAINTENANCE OF CONSTRUCTION EXIT TIRE WASH ASSEMBLY	EA	2		
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	3		
167-1500	WATER QUALITY INSPECTIONS	MO	18		
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	5024		
				TOTAL BID:	

CONTRACTOR: _____

AUTHORIZED REPRESENTATIVE'S NAME: _____

AUTHORIZED REPRESENTATIVE'S SIGNATURE: _____ Date: _____

This unit price bid schedule can be inserted as an amended page in the bid documents. **DO NOT DISASSEMBLE THE BID DOCUMENTS.**

Section 4 SPECIAL PROVISIONS

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT: CR 635/Maxham Road Improvements
PI No. 0012621, Douglas County
Section 107 - Legal Regulations and Responsibility to the Public

Add the following to Subsection 107.23:

H. Protection of Federally Protected Species

The following conditions are intended as a minimum to protect these species and their habitat during any activities that are in close proximity to the known locations of these species.

1. The Contractor shall advise all Project personnel about the potential presence and appearance of the federally protected northern long-eared bat *(Myolis septentrionalis),* and that there are civil and criminal penalties for harassing, harming, pursuing, hunting, shooting, wounding, killing, capturing, or collecting these species in knowing violation of the Endangered Species Act of 1973. All personnel shall be advised that there are penalties for capturing, killing, or selling protected species under the Georgia Endangered Wildlife Act of 1973. Pictures and habitat information are attached and shall be posted in a conspicuous location in the Project field office until such time that Project construction has been completed and time charges have stopped.

2. All clearing of woody vegetation for the Project (STA 115+92 LT through 117+18 LT, 119+32 LT through 123+77 LT, and 121+16 RT through 123+75 RT) shall occur outside of the summer activity period of the federally protected northern long-eared bat, which begins April 1st and ends October 15th. A log shall be kept detailing the beginning and ending dates of all clearing of woody vegetation within the state numbers listed below. The log shall be signed by the Contractor and Project Engineer prior to the occurrence of clearing. Following Project completion, the log shall be submitted to the Project Engineer and the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services via the Ecology Submittals Inbox (ecology_submittals@dot.ga.gov). The e-mail shall be formatted with the title "Tree Clearing Log: PI No. 0012621)."

3. For the protection of the northern long-eared bat, any temporary lighting utilized should be directed away from suitable habitat (forested areas).

4. In the event any incident occurs that causes harm or injury to the northern long-eared bat along the Project corridor, the incident shall be reported immediately to the Project Engineer who in turn will notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All activity shall cease pending consultation by the Department with the US Fish and Wildlife Service and the lead Federal Agency.

5. A log shall be kept detailing any incidents that could cause injury to northern long-eared bats in or adjacent to the Project until such time that Project construction has been completed and time charges have stopped. Following Project completion, the log and a report summarizing any incidents involving this species shall be submitted to the Project Engineer and the Georgia Department of Transportation, Office of Environmental Services ecology submittals inbox (ecology_submittals@dot.ga.gov). The Department in turn shall provide copies of the report to the US Fish and Wildlife Service, the Georgia Department of Natural Resources Wildlife Resources Division, and the lead Federal Agency.

6. All costs pertaining to any requirement contained herein shall be included in the overall bid submitted unless such requirement is designated as a separate Pay Item in the Proposal.

Tree Clearing Log

PI No: 0012621 County: Douglas

Begin STA#	End STA#	Inside Restricted Clearing Zone (YIN)*	Begin Date	End Date	Contractor Signature and Printed Name	Project Engineer Signature and Printed Name

*See ERIT and Special Provision 107.23H for station numbers and dates of restricted tree clearing.

**If restricted, clearing of woody vegetation shall only occur outside of the summer activity period as specified in the *BRIT* and Special Provision 107.23H.

July 19,2018

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
SPECIAL PROVISION

PROJECT NUMBER: N/A
P.I. No.: 0012621
COUNTY: DOUGLAS

SECTION 108 - PROSECUTION AND PROGRESS

Retain Sub-Section 108.08 as written and add the following:

108.08. Failure or Delay in Completing Work

on Time C: Restrictive Work Hours

Failure to re-open travel lanes as specified in Special Provision Section 150.6 will result in the assessment of liquidated damages in the amount of$1000 per hour or portion thereof.

D: Milled Surfaces

Failure to cover milled surfaces as specified in Special Provision Section 150.6 will result in the assessment of liquidated damages in the amount of$1000 per calendar day.

E. Traffic Signal Loop Detectors

Failure to replace traffic loops removed or damaged during construction as specified in Special Provision Section 150.6 will result in the assessment of liquidated damages in the amount of $500.00 per hour or portion thereof.

The above rates are cumulative and are in addition to any Liquidated Damages which may be assessed for failure to complete the overall project.

(Douglas County)

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

July 19,2018

SPECIAL PROVISION

PROJECT NUMBER:

N/A P.I. No.: 0012621

COUNTY: DOUGLAS

SECTION 150 - TRAFFIC CONTROL

Add the following:

150.6 Special Conditions:

A. *Single Lane Closures*

1. SR 6ffhorton Road
    a. Single lane closure are allowed between the hours of 9:00 pm to 5:00 am, Monday through Saturday.
2. CR 635/Maxham Road
    a. Single lane closures are allowed between the hours of9:00 am to 3:00 pm and 9:00 pm to 5:00 am, Monday through Saturday.

B. *Milled Surfaces:*

1. All milled Surfaces shall be covered within 3 days.

C. *Traffic Signal Loop Detectors:*

1. Traffic loops removed or damaged during construction shall be replaced and operational within 48 hours. Failure in having replacement traffic loops operational within the time specified will result in the assessment of Liquidated Damages in accordance with Special Provision 108.08

(Douglas County)

Revised: March 15, 2017

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SPECIAL PROVISION

Section 156-GPS Specifications for Conveyance Structures GIS Mapping

Delete Section 156 and substitute the following:

156.1 General Description

Perform the items of this work according to this Specification. This work includes:

- Collecting sub-meter locations and attributes for all stormwater structures, inlets, outlets, and conveyance means (excluding curb and gutter) within the project limits.
- Compiling, processing, and submitting the GIS data in accordance with the Department's policies and guidelines.
- Maintaining quality control and quality assurance while performing the work.

156.1.01 Definitions

General Provisions 101 through 150

156.1.02 Related References

A. Standard Specifications

General Provisions 101 through 150

B. Referenced Documents

GDOT Policy: 8075-1-Database Design and

Modeling GDOT Policy: 8075-5-MetadataRegistry

GDOT Policy: 8085-1- Geospatial Data

Policy GDOT Policy: 8085-2- GPS Data

Collection Policy

156.1.03 Submittals

General Provisions 101 through 150

156.2 Materials

General Provisions 101 through 150

156.3 Construction Requirements

General Provisions 101 through 150

156.3.01 Personnel

Furnish qualified personnel capable of performing the work in accordance with the Department's above-stated policies and procedures.

156.3.02 Accuracy

Ensure that data will be accurate within 1 yard (I meter) horizontally for all assets. Collect and process data in accordance with the Department's Policies and Procedures.

156.3.03 Coordinate System

Submit the data to the Department in accordance with GDOT Policy 8085-1- Geospatial Data Policy and Standards.

156.3.04 Format

Provide data in ESRI ArcGIS 10.2 or newer file-based geodatabase format.

156.3.05 Schema and Metadata

Provide all the data in compliance with database schema, metadata, and required fields files located at the following URL: http://www.dot.ga.gov/PartnerSmart/DesignManuals/OtherResources/GIS_Inventory.zip

156.3.06 Data Submittal

The data shall be submitted to the Engineer no later than the final inspection. All electronic file deliverables shall include the Pl number and "MS4" in the file name.

156.4 Measurement

This work will not be measured separately for payment.

156.5 Payment

This contract item completed and accepted will be paid at the Lump Sum Price bid, and the payment will be full compensation for all work completed as specified in this Section.

Payment will be made under:

Item No. 156	GPS Data Collection and Submittal	Per Lump Sum

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

PROJECT: *NIA*
DOUGLAS COUNTY
P.I. NO: 0012621
Section 615 - Jacking or Boring Pipe
(Directional Boring)

Delete Section 615 as written and substitute the following:

615.1 General Description

This work shall consist of installing various sizes of bores by directional boring through whatever materials may be encountered .

615.1.01 Definitions

General Provisions 101 through 150.

615.1.02 Related References

A. Standard Specifications

Section 205- Roadway Excavation

Section 208- Embankments

B. Referenced Documents

General Provisions 101 through 150.

615.1.03 Submittals

Furnish, for the Engineer's approval, a plan showing the proposed methods for the installation of the horizontal directional bore. The Engineer will review the proposed installation plan within IO working days of receipt by the Department. No directional boring work will be allowed until the Contractor's submitted plan is approved by the Engineer. This plan shall include the following detail as a minimum:

- List of projects completed by the company performing the boring operation environment of installation (urban work, river crossing, freeway), diameter of product installation and length of bores. This list of projects must include the name, address and phone number of an owner's representative with knowledge of the performance of the work. Provide at least five previously completed projects of similar scope as the boring work included in this contract.
- List of the Contractor's key personnel with a resume of boring experience. The Department will be the sole judge of the qualifications of the foreman and the drill operators.
- Location of all proposed boring entry and exit pits.

- Proposed alignment of bore both horizontal and vertical. The proposed alignment shall maintain a minimum clearance of 18 inches (450 mm) or 2 times the diameter of the final product installation, whichever is greater, at any obstruction. Boring will not be allowed in select backfill areas such as at mechanically stabilized wall locations.
- Proposed diameter of bore. This diameter is the diameter of the final product installation.
- Proposed diameter of pilot borehole.
- Proposed diameter of back reamer. In no case shall the diameter of the back reamer exceed 1.5 times the diameter of the final product installation.
- Proposed depth of cover. The depth of cover shall be equal to or greater than 10 times the diameter of the final product installation. Additionally, the minimum depth of cover allowed in paved shoulders shall be **4** feet (1.22 meters). The minimum depth of cover under travel lanes or otherwise outside of the paved shoulder shall be 8 feet (2.44 meters).
- Evaluation of soil conditions to be encountered. Full soil survey not required. As a minimum, excavate the entrance and exit pits for the proposed bore and determine the nature of the material likely to be encountered. The drilling fluid composition should be based on the evaluation of the materials encountered in the bore pit excavation.
- Proposed composition of drilling fluid.
- Proposed drilling fluid pressure and flow rates.
- Proposed drilling fluid management plan.
- Proposed pull back rate.
- Type of tracking system.

615.2 Materials

Use conduit types and sizes that conform to the Plans and the following:

Material	Section
Electrical Wire, Cable, and Conduit	

615.3 Construction Requirements

Suitable pits or trenches shall be excavated for the boring operation and for placing end joints or termination connectors of conduit when required. Pits or trenches shall be securely sheeted and braced where necessary to prevent caving.

Where directional boring is required under railroads, highways, streets or other facilities, construction shall be done in the manner that will not interfere with the operation of the facility, and shall not weaken the roadbed or structure. No roadway pavement, subgrade, roadbed, paved shoulder, or unpaved median shall be disturbed or excavated as part of the boring or pipe placing operation for any reason without written authorization by the Engineer. In the above areas, any broken or damaged boring rod/stem, boring head (including transmitter/transponder locating heads and cutter heads) couplings (including backreaming, swivel or connector couplings), or any other material that cannot be retrieved as part of the pullback operation shall become the property of the Department and shall be abandoned in place unless otherwise authorized in writing by the Engineer. There shall be no additional payment for abandoned material.

Continuously monitor the location and alignment of the pilot drill progress to insure compliance with the proposed installation alignment and to verify depth of the bore. Monitoring shall be accomplished by manual plotting based on location and depth readings provided by the locating/tracking system or by computer generated bore Jogs which map the bore path based on information provided by the locating/tracking system. Readings or plots shall be obtained on every drill rod and provided to the Engineer on a daily basis for as-builts.

Monitoring of the drilling fluids such as the pumping rate, pressures, viscosity and density during the pilot bore, back reaming, and/or pipe installation stages shall be undertaken to ensure adequate removal of soil cuttings and to ensure that the stability of the borehole is maintained. Drilling fluid pressures should not exceed that which can be supported by the

overburden (soil) pressure to prevent heaving or a hydraulic fracture of the soils. Excess drilling fluids shall be contained at the entry and exit points until recycled or removed from the site. Ensure that all drilling fluids are disposed of in a manner acceptable to the appropriate local, state and federal regulations. The Contractor's work will be immediately suspended whenever drilling fluids seep to the surface other than in the boring entrance or exit pit. The Contractor must propose a method to prevent further seepage and must remove and dispose of any drilling fluid on the surface prior to resuming the boring operation.

To minimize heaving during pullback, the pullback rate should be determined to maximize the removal of soil cuttings and minimize compaction of the ground surrounding the borehole. The pullback rate shall also minimize over cutting of the borehole during the back reaming operation to ensure that excessive voids are not created resulting in post installation settlement. Any surfaces damaged by the work shall be restored to their preconstruction conditions. AU costs associated with the restoration are to be borne by the Contractor.

The distance that the excavation extends beyond the end of the bore will depend upon the character of the excavated material, but shall not exceed 2 feet (0.61 meters) in any case. This distance shall be decreased on instructions from the Engineer if the character of the material being excavated makes it desirable.

Once the directional boring is begun, the operation shall be carried on without interruption, insofar as practical.

The pits or trenches excavated to facilitate boring operations shall be backfilled immediately after the boring has been completed.

The boring shall proceed from a surface staging area provided for the boring equipment and workers. The location of the staging area shall be approved by the Engineer. The holes shall be bored mechanically. Excavated material will be placed near the top of the working pit and disposed of as required. The use of water or other fluids in connection with the boring operation will be permitted only to the extent necessary to lubricate cutting. Jetting will not be permitted.

Excavation will not be paid for separately, but all of the provisions of Section 205 and 208 shall govern.

In unconsolidated soil formations a gel-forming colloidal drilling fluid consisting of at least I 0% high grade carefully processed bentonite may be used to consolidate excavated material, seal tJ1e walls of the hole, and furnish lubrication for subsequent removal of material and immediate backreaming/installation of conduit. Flow pressure on the drilling fluid shall be continuously monitored and maintained at the minimal pressure required to place the fluid. At no time shall the flow pressure exceed 500 psi (3448 k Pa) and should normally not exceed 200 psi (1379 k Pa). All drilling fluid spoils shall be completely removed from both ends of the bore and properly disposed of at a location provided by the Contractor.

Allowable variation from line and grade established by the Engineer shall be a maximum of 2 percent. Any voids which develop during the installation operation and are determined by the Engineer to be detrimental to the Work, shall be pressure grouted with an approved mix.

Directional boring operations inherently include the risk of encountering under grade obstructions that begin to alter the bore direction. Should an obstruction be encountered, the Engineer shall be notified immediately. Attempts at corrective measures to restore the proper bore alignment should include but are not limited to boring deeper or shallower (if minimum pipe depth can be maintained), moving the boring head to the right or left of the obstruction, or attempt to bore through the obstruction (if other than solid rock). To restore the bore alignment, a minimum of three attempts shall be made to the Engineer's satisfaction at each encountered obstruction with different corrective measures. If a suitable bore alignment cannot be restored, the Engineer may authorize a relocation of the bore. Unsuccessful boring attempts shall be paid in accordance with Sections 615.4 and 615.5 below, using the obstruction location as one end of the measured length of directional boring.

615.4 Measurement

Directional bores will be measured by the horizontal linear foot (meter) of bore complete in place. The measurement for payment shall be determined by obtaining measurements from the points at which the bore arrives at the required minimum acceptable depth, at the entrance and exit of the boring operation, following the central axis of the bore. Directional boring above the minimum acceptable depth shall not be measured for payment.

615.5 Payment

This work performed and materials furnished as prescribed by this Item, measured as provided under Measurement will be paid for at the Contract Price per linear foot (meter) for Directional Boring of the size of bore specified, which shall be full compensation for furnishing the bore and all incidentals necessary to complete the1tem. All excavated material resulting from the directional boring operations shall be disposed of or used as directed by the Engineer at no additional cost to the Department.

Payment will be made under:

Item No. 615-	Directional Bore Pipe (Size)	Per linear foot (meter)
Item No. 615-	Directional Bore (Size)	Per linear foot (meter)

615.5.01 Adjustments

General Provisions 101 through 150.

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SPECIAL PROVISION

Section 647-Traffic Signal Installation

Delete Section 647 and substitute the following:

647.1 General Description

This work consists of furnishing materials and erecting a traffic signal installation including all traffic signal equipment, poles, bases, wires and miscellaneous materials required for completion of the installation. Ramp Meters are defined as a form of traffic signalization and all general provisions for traffic signalization are applicable unless otherwise noted in the Plans and Specifications.

It also includes all test periods, warranties and guarantees as designated in subsequent sections, and response to maintenance and operational issues as described in subsequent sections.

Apply for, obtain and pay for all utility services, communications services to, and pole attachment permits required by all utility owners that are necessary for the signal installation and operation required in the Plans. The Contractor will be responsible for establishing utility services and ongoing monthly costs related to utility services until final acceptance of the signal project.

Upon completion of a successful "burn in" or operational testing period for the signal installation, the Contractor will be responsible for an orderly and uninterrupted transfer of these services and permits to the local government or other jurisdiction that will be responsible for subsequent maintenance and operation.

647.1.01 Definitions

General Provisions 101 through 150.

647.1.02 Related References

A. Standard Specifications

Section 106-----Control of Materials

Section 107-Legal Regulations and Responsibility to the Public

Section 108 -Prosecution and Progress

Section 150 -Traffic Control

Section 500----Concrete Structures

Section 501-Steel Structures

Section 535-Painting Structures

Section 615-Jacking or Boring Pipe

Section 631---Changeable Message Signs

Section 636 - Highway Signs

Section 639-Strain Poles for Overhead Sign and Signal Assemblies
Section 645-Repair of Galvanized Coatings
Section 680-Highway Lighting
Section 681-Lighting Standards and Luminaires
Section 682-Electrical Wire, Cable, and Conduit
Section 700-Grassing
Section 755-Electrical Work
Section 800-Coarse Aggregate
Section 801-Fine Aggregate
Section 832--Curing Agents
Section 833-Joint Fillers and Sealers
Section 850-Aluminum Alloy Materials
Section 852-Miscellaneous Steel Materials
Section 853-Reinforcement and Tensioning Steel
Section 854-Castings and Forgings
Section 861-Piling and Round Timber
Section 870-Paint
Section 886-Epoxy Resin Adhesives
Section 910-Sign Fabrication
Section 911-Steel Sign Posts
Section 912-Sign Blanks and Panels
Section 913-Reflectorizing Materials
Section 915-Mast Arm Assemblies
Section 922-Electrical Wire and Cable
Section 923-Electrical Conduit
Section 924-Miscellaneous Electrical Materials
Section 925-Traffic Signal Equipment
Section 926 - Wireless Communication Equipment
Section 927 - Wireless Communication Installation
Section 935-Fiber Optic System
Section 936--CCTV System
Section 937-Video Detection System
Section 939--Communications & Electronic Equipment
Section 940-Navigator Integration

B. Referenced Documents

National Electrical Manufacturers Association (NEMA) Traffic Control Systems Standards No. TS 1

NEMA Traffic Control Systems Standards No. TS 2
AASHTO Roadside Design Guide

The Manual on Uniform Traffic Control Devices (MUTCD), current edition National Electrical Code
National Electrical Safety Code (NESC)

GDT 7 Determining Maximum Density of Soils

GDT 24a Determining the Theoretical Minimum Dry Density of Soils or Soil Aggregates containing> 45% Retained on the No. 10 Sieve

GDT 24b Determining the Theoretical Minimum Dry Density of Soils or Soil Aggregates containing> 5% Retained on 2-Inch Sieve using a 5.5 Pound Rammer and a 12 Inch Drop

GDT 67 Family of Curves Method for Determining Maximum Density of Soils

647.1.03 Submittals

Use only equipment and materials that are on the Department's Qualified Products List (QPL)

These products have been evaluated by the Office of Traffic Operations and have proven their capability of meeting the appropriate Georgia Department of Transportation Specification. Any of these products may be used without sampling or pre-testing. The Contractor shall submit a letter to the Field Engineer, stating which QPL items they will use. Submittal letter shall include QPL number-and product description. The Field Engineer and/or department designee must ascertain that the construction item is the same material identified on the appropriate QPL and will acknowledge receipt of these items in the project diary or as required by the Construction manual.

Written approval is required from the State Traffic Engineer or District Engineer prior to beginning any work on the traffic signal installation and /or installing the proposed on the work site.

A. Review

For all traffic signal material submittals, the Engineer's review of the material should be completed within forty five (45) days from the date of receipt of the submission unless otherwise specified. The State Traffic Engineer or District Engineer will advise in writing, as to the acceptability of the material submitted.

The State Traffic Engineer or District Engineer may determine that submitted equipment is approved, in which no further action is required. In the event, materials submitted for use are rejected the Contractor is required to re-submit materials, within fifteen (15) days of notification of material failure or rejection. Resubmittal of subsequent materials for review will be considered the start point of a new approval cycle as described.

The Department reserves the right to be reimbursed by the Contractor for reviewing any equipment and/or component submittals after a second submittal of equipment proposed for use on the project.

B. Submittal Costs

No separate measurement or payment will be made for submittal costs. All costs associated with reproduction of submittal material documents, samples and mailing expensed will be the responsibility of the Contractor and are not subject to reimbursement by the Department. All submittal material becomes the property of the Department and will not be returned to the Contractor.

C. Steel Strain Pole, Concrete Strain Pole or Steel Pole Certification

Instruct the supplier or manufacturer of the strain poles or steel poles with traffic signal mast arms to submit a certification, including mill certificates to:

Department of Transportation
Office of Materials and Research
15 Kennedy Drive
Forest Park, Georgia 30297

Include the following in the certification:

- A statement that the items were manufactured according to the Specifications, including the Specification Subsection number
- Project number and P.I. number

Instruct the supplier or manufacturer to send copies of the transmittal letter to the Engineer.

Prepare Shop Drawings and related signal strain pole design calculations with the following criteria, 5% sag and 18 foot signal head height. Provide "bending moment at yield" to determine the foundation size according to the signal strain pole foundation drawings. Submit all Shop Drawings and related signal strain pole design calculations to the Traffic Engineer. The Traffic Engineer will forward to the State Bridge and Structural Design Engineer for review and approval. Obtain written approval prior to pole fabrication and installation. Upon acceptance of the pole certification provide one copy of the design calculations and shop drawings to the agency responsible for maintaining the traffic signal installation.

All pole drawings shall include roadway and pole elevations.

Show all dimensions and material designations of the designs on the Drawings. See Subsection 501.1.03 for the certification procedure for poles and anchor bolts.

D. Signal Item Certification

Only Equipment and/or material on QPL shall be submitted for certification. All others will be rejected. Submit four (4) copies of material catalog product numbers and descriptions to the Engineer. One copy of all submittals is to be provided to the maintaining agency. Reference the project number, P.I. number, and QPL number, for the following traffic signal items:

- Signal heads
- LED Signal Modules
- Mounting hardware
- Controllers
- Cabinet assemblies
- Battery Backup System (BBS)
- Detectors
- Monitors (conflict/IVDS)
- Cable
- Load switches
- Blank-out signs
- Lane use signals
- Preformed cabinet bases

- Other related signal equipment (including but not limited to Conduit, Pull boxes, Ground Rods, Enforcement Indications, etc.)

E. Test Results Submittal

Submit the results of the testing of the following items to the Engineer. A copy of the test result submittals shall be provided to the maintaining agency.

- Loop Detector Testing
- Signal Cable Testing
- Interconnect Cable Testing
- Pre-emption Testing
- Controller and Cabinet Testing from Manufacturer (Including conflict monitor)
- Traffic Signal Monitor
- Any other operational testing required by the Engineer

F. Mast Arm Pole Chart

For locations with mast arm pole installations, submit a "Mast Arm Pole Chart" for review and approval by the State Bridge and Structural Design Engineer. The "Mast Arm Pole Chart" shall also include a sketch on an 8 ½ inch x 11 inch (216 mm x 279 mm) sheet of paper showing the following:

- Curb lines
- Location of mast arm pole based on utility information and field location verified by Contractor. (Final location of mast arm pole must meet the criteria for setback from the road as specified in the Roadside Design Guide by AASHTO and in the Standard Detail Drawings.
- Distance from both adjacent curbs to mast arm pole
- Distance along mast arm from pole to curb and from curb to each proposed signal head
- Directional arrow
- Street names
- Position of Luminaries

Label the sketched distances. Once this pole chart is approved, the Contractor shall use the distances measured to the proposed signal head locations when ordering the mast arm to ensure that the mast arm is fabricated with holes for signal head wiring in the correct locations.

647.2 Materials

647.2.01 Delivery, Storage, and Handling

A. State-supplied Equipment

For projects where traffic signal equipment is to be supplied by the Georgia Department of Transportation, obtain State-supplied traffic signal equipment from the Traffic Signal Electrical Facility (TSEF):

1. Contact the Engineer by phone or correspondence within one week after receiving the Notice to Proceed and arrange for a date, time and location to pick up the signal equipment and materials from the Traffic Signal and Electrical Facilities (TSEF).

2. Sign GDOT's Warehouse Issue Request Form 592 to accept delivery of the State-supplied equipment from GDOT's Traffic Signal Equipment Warehouse. Initial Form 592 if equipment is received from a GDOT District Field Office.
3. Inspect the equipment to ensure that it is operating properly and perform any operational tests within ten (10) calendar days after receiving the equipment.
4. Before installation, and within ten (10) calendar days, certify to the Engineer in writing that the State-supplied equipment was received in good condition.
5. Notify the Engineer in writing if the State-supplied equipment is defective. The State Signal Engineer will replace the defective State-supplied equipment.
6. If no written dissent is received after ten (10) calendar days or if equipment is installed in the field, the Engineer will consider this equipment to be satisfactory and accepted.
7. The Contractor shall supply new in like and kind State approved equipment to replace State-supplied equipment that is damaged or lost.

B. Signal Equipment

See Section 925 for signal equipment specifications.

The signal equipment, components, supplies, or materials used in traffic signal installation may be sampled and tested if not previously approved by the Department.

Test according to the Specifications and the Sampling, Testing, and Inspection Manual using one or more of the following methods:

- Have the Department use their own facilities.
- Have the supplier or manufacturer use their facilities with an authorized Department representative to witness the testing.
- Provide independent laboratory test results indicating compliance with Department Specifications referenced in Subsection 647.1.02, "Related References", of this document.
- When testing by the Department is required, supply the item to the Department. Acceptance of materials tested does not exclude further testing or waive warranties and guarantees required by the Specifications.

C. Cable

Use cable conforming to Section 680, Section 922, and Section 925 and the appropriate IMSA, NEMA, or UL Specifications for the wire or cable.

Obtain pole attachment permits required by local utility companies or pole owners to allow joint use for signal cable, hardware, or other auxiliary devices.

D. Interconnect Communications Cable

1 Use fiber optic interconnect cable or spread spectrum radio for all new interconnected signal systems. See Section 935 for fiber optic cable or spread spectrum information, specifications, marking and installation and testing techniques.

2 Use copper cable only as directed by the Engineer or where specifically shown in the Plans. Refer to Subsection 647.3.05, "Construction", of this document for installation.

E. Conduit on Structures

Use galvanized rigid steel materials for all exposed conduit for cabling. Use galvanized rigid steel (GRS) conduit on the exterior of signal poles and other structures and to house signal conductors for the entire length from the weather head on

the pole to the interior of the cabinet or to the pull box and ground conduit using an approved grounding bushing. (see Subsection 647.3.05V).

647.3 Construction Requirements

Refer to Subsection 107.07 of the Specifications regarding proper conduct of The Work.

647.3.01 Personnel

For the definition of a qualified electrician, see Subsection 755.1.01.

647.3.02 Equipment

Use machinery such as trucks, derricks, bucket vehicles, saws, trenchers, and other equipment necessary for the work and approved by the Engineer prior to installation operations.

647.3.03 Preparation

Utility Permits

A. Application

Apply for, obtain, and pay for utility services and pole attachment permits for signal operation, traffic signal communications including standard telephone service and signal communications as required in the Plans.

B. Maintenance

The Contractor will be responsible for establishing utility services and ongoing monthly costs related to utility services until Final Acceptance of the signal(s) installation, or in the event of multiple installations, the Contractor will be responsible for utility costs until overall project acceptance. After Final Acceptance, the Contractor will provide an orderly transfer these services and permits to the local government or jurisdiction responsible for maintenance and operation. Ensure that the transfer does not interrupt service.

C. Utility Location

1. Adjustment

   Prior to ordering signal poles, locate utilities and adjust the location of poles, where necessary, to minimize utility conflicts. Obtain approval from the District Traffic Engineer for any deviation from the Plans.

   Determine the final length of mast arms based on any field adjusted pole locations. Final location shall be approved by the District Traffic Engineer.

2. Clearance

   When installing aerial cable of any type, it is the Contractor's responsibility to ensure that overhead clearance and separation requirements conform to local utility company standards, the NEC and the NESC. Refer to the Standard Details Drawings for further information on utility clearances.

3. Pre-emption

   When traffic signal pre-emption is used, coordinate with the railroad, fire department or any other agency that uses pre-emption to obtain pre-emption output and route output cable to the signal controller operating the intersection to be pre-empted. It is the Contractor's responsibility to obtain all permits and approval for crossing at grade or grade separated railroad facilities.

647.3.04 Fabrication

General Provisions 101 through 150.

647.3.05 Construction

A. Acquiring and Disposing of Equipment

Do not modify the signal equipment, design, and operation without the District Traffic Operations Engineer's written approval.

All traffic signal equipment removed or replaced shall be returned to District Traffic Signal Shops unless otherwise noted in the Plans or as directed by the Engineer or District Signal Engineer. Provide an inventory list and arrange a mutually agreeable delivery time with the District Signal Engineer twenty-four (24) hours in advance. All materials not returned to the District Signal shop shall be the responsibility of the Contractor to remove and dispose.

B. Traffic Signal Equipment Modification and Removal

Upon the Department issuance of Notice to Proceed any existing traffic signal equipment, responsibilities for maintenance, operations and response to traffic signal malfunction become the responsibility of the Contractor and provisions of Subsection 647.3.07, "Contractor Warranty and Maintenance", apply.

1. Remove existing signal equipment that is not used in the final installation when the new signal equipment is operational.

   Carefully remove equipment to minimize damage and retain it in its original form. This equipment may include:

   - Strain poles including the foundation down to 3 feet (900 mm) below ground level finished grade
   - Timber poles
   - Traffic signal cabinets including contents, cabinet base and work pads
   - Original signal heads including span wire support
   - Other equipment not retained in the final installation

   Ensure that unused equipment is secured and disposed of in accordance with all Environmental Protection Agency regulations and Department instructions.
2. Replace traffic signal equipment that the District Signal Engineer determines has been damaged or destroyed during installation, modification, or removal of the traffic signal, at no expense to the Department. Replace with new material.
3. If the Engineer finds that the existing material shown in the Plans to be relocated is unsatisfactory, replace with new material. The costs will be paid for as Extra Work.
4. Remove old signal heads by the end of the day that the new signal equipment is placed in operation. Remove all other signal equipment within seven (7) days after operations of the newly installed equipment.

C. Auxiliary Cabinet Equipment

Provide auxiliary cabinet equipment or special purpose equipment with connecting harnesses, if necessary, or as shown in the Plans or Standard Detail Drawings.

1. Install the equipment in its associated cabinet. Extraneous wiring may be necessary to install the equipment. Additional cabling shall be enclosed in NEMA enclosure and neatly secured.
2. Connect the auxiliary equipment to its cable harness, or insert it in premounted racks or sockets.

D. Signal Controllers

Furnish and install approved microprocessor controllers at the locations shown in the Plans or as directed by the Engineer. All equipment furnished shall comply with Section 925,"Traffic Signal Equipment".

1. Identify the controller and other auxiliary equipment by model and revision numbers. These numbers shall agree with previously approved catalog submittals.

2. Assemble the controller, cabinet, and auxiliary equipment to provide the operational sequence shown in the Plans and future operations specified. Ensure the controller functions as a unit with the cabinet assembly.
3. Ensure controller and auxiliary equipment are provided AC power from receptacles marked for controller power.
4. The Department will provide controller firmware. The Contractor shall provide the controller to the Department. The Department will load the firmware into the controller and notify the Contractor that the controller is ready to be picked up. If the controller is purchased with applications firmware, ensure that the firmware provided is the current Department licensed version of firmware including "boot code". Current firmware version shall be at the date of application "tum on".
5. Unless otherwise specified in the Plans or directed by the Engineer, thirty days prior to installation of equipment the Contractor shall deliver the controllers to and pick up the controller from the Traffic Signal Electrical Facility (TSEF) Atlanta office. The Department shall have 30 work days to load the controller firmware starting from the date the Contractor delivered the controllers to the Department.
6. For 2070 signal controllers used for Ramp Metering ensure the Watchdog Timer "Muzzle Jumper" is selected on the field input/output module. This is required for operating with a 208 monitor.

E. Cabinet Assembly

1. Location

The cabinet should be located in accordance with the Plan location, however if the cabinet location needs to be moved, choose a location that:

a. Protects maintenance personnel from vehicles when servicing the equipment
b. Allows the front panel door of the controller to open away from the intersection for view of signal indications while servicing or performing cabinet work.
c. Does not block a sidewalk or passageway and complies with Federal regulations for Americans with Disabilities Act (ADA) clearance requirements.
d. Is located away from the roadway or curb line to prevent vehicular damage to the cabinet.
e. Is not located within drainage areas or installed in areas likely to collect and hold surface water.
f. Relocate the cabinet to avoid conflicts from proposed reconstruction projects, commercial driveways, etc. within the right-of-way at the Engineer's discretion.

2. Erection

Install and level traffic signal controller cabinets at locations shown in the Plans and/or as directed by the Engineer.

a. Install cabinets to conform to the Standard Detail Drawings. Install pole or base-mounted as indicated in the Plans. Cabinet base shall not extend more than 9 inches above final grade.
b. Seal base-mounted cabinets to their base using silicone based sealer. Pliable sealant used shall not melt or run at temperatures as high as 212 °F (100 °C).
c. Use prefabricated bases and work pads
d. Install technician pad in front and rear of the controller cabinet door and if applicable in front of battery backup cabinet door. See Standard Details for pad information.
e. Close all unused conduit in the controller base with a PVC cap sized appropriately. Do not permanently affix the conduit cap to the conduit. Seal those conduits used for signal cable with a pliable sealant to prevent moisture and insects from entering the cabinet via the conduit.

3. Field Cabinet Wiring

All wiring shall be neat and secured and comply with NEC, NEMA, and Table 647-1, Table 647-2, Table 647-3 Table 647-4, Table 647-5, and Table 647-6 of this Specification.

a. Cut field cabinet wiring to the proper length and organize it in the cabinet. Wire lengths should be slack (minimum 10 feet) allowing for future modifications.
   - Use at least No. 6 AWG wire for the conductors between service drop and AC+ and the AC- terminals.

b. Do not mount electrical meter to the cabinet. Submit "power pedestal" or other method of providing location for mounting to the Engineer.

c. Label all field terminals and conductors so as to identify the specific field input.

d. Crimp terminal connections to conductors with a ratchet-type crimping tool that will not release until the crimping operation is completed.

e. Do not use splices inside the controller cabinet, base, or conduit.

f. Do not use solid wire, except grounding wire.

g. Supply the cabinets with cabinet wiring diagrams, schematic drawings, pin assignment charts, and manuals for circuits and components. Store these documents in the cabinet in a resealable, weatherproof container.

F. Signal Monitors

Furnish signal monitor equipment as follows,

1. Mount signal monitors in a rack with appropriate connectors to attach to the wiring harness.
2. Program the monitor according to the signal operation indicated in the Signal Plans before placing the installation in flash or stop-and-go operation. Provide any signal monitoring programming tools required to program the monitor to the maintaining agency.
3. Configure and equip the signal monitor to monitor all red signal indications. Ensure that the red output for unused or vacant load bays or output slots is jumpered to 120 V AC+.
4. For ITS Cabinets configure the CMU and AMU.
5. For Ramp Metering Cabinets mount model 208 monitor in rack and provide the necessary programming required for the Ramp Meter operation as shown in the Plans.

G. Power Disconnect

Install a power disconnect box at each intersection as shown in the Standard Detail Sheets. Ensure the power disconnect is installed at the top of the cabinet pole or as indicated on plans. Install service cables from disconnect box and terminate as specified on the controller cabinet-wiring or battery backup diagram.

H. Flashing Beacon

Furnish and install the flashing beacon controller at the locations shown in the Plans and/or as directed by the Engineer. Install it as a complete unit (solid state flasher and cabinet with time clock, if applicable) and ensure that it conforms to this Specification.

I. Loop Detector Systems

Install and test loop detector systems according to NEMA Standards Publication TS 1-1983, Section 15, Inductive Loop Detectors, subsequent revisions (except as shown in the Plans), Details, notes, and this Specification.

Ensure that loop detectors are complete and fully operational before placing the signal in stop-and-go operation.

1. General Installation Requirements

Each loop must consist of at least two turns of conductor, unless otherwise shown in the Plans or this Specification. Do not place a portion of the loop within 3 feet (1 m) of a conductive material in the pavement such as manhole covers, water valves, grates, etc.

a. Install pull boxes, condulets, and conduits before beginning loop installation.

b. Ensure that the ambient pavement surface temperature in the shade is at least 40 °F (5 °C) before cutting roadway and placing sealant into saw cuts.

2. Loop Saw Cuts

a. Outline the loop on the pavement to conform to the specified configuration.

b. Ensure each loop has a separate saw cut with a minimum distance between saw cuts of 6 inches.

c. Install the detector loop in a sawed slot in the roadway surface deep enough to provide at least 3 inches (76 mm) of sealant cover.

d. Ensure that the slot is at least 0.25 inches (6 mm) wide for stranded No. 14 AWG loop wire, THWN, XHHW, or XLPE, and at least 0.31 inches (7 mm) wide for polyethylene or PVC encased No. 14 AWG loop wire.

1) At the intersection of the slots, drill a 2 inch (51 mm) diameter hole or make miter saw cuts in the pavement. Overlap miter saw cuts at the intersection of saw cuts so that the slots have a full-depth and smooth bottom.

2) Prevent the wire from bending sharply.

3) Do not install detector loop wire unless sawed slots are completely dry and free of debris. Pressure wash the slot to guarantee adhesion of the loop sealant. Use compressed air to thoroughly dry the sawed slot.

4) Install the loop wire starting at the nearest pull box or condulet, around the loop for the specified number of turns, and back to the pull box or condulet.

NOTE: Loop wire from the street is to be spliced in condulets or pull boxes only.

5) Refer to table 647-9 for the number of turns for Quadrupole loops. Refer to table 647-8 for the number of turns for) Bipole loops. Bipole loops require at least three (3) turns.

e. Press the wire in the slot without using sharp objects that may damage the jacket.

f. Hold the loop in place every 5 feet (1.5 m) with 1 inch (25 mm) strips of rubber, neoprene, flexible tubing, or foam backer rod as approved by the Engineer.

g. Leave the hold down strips in place when filling the slot with loop sealant.

h. Where encased loop wire is used, apply a waterproof seal to the ends of the polyethylene tubing that encase the wire to prevent moisture from entering the tube.

i. Where the loop wires cross pavement joints and cracks, protect the loop wires using the method specified in "Traffic Signal Details" in the Plans. When crossing expansion joints drill a 2 inch diameter hole minimum 3 inches deep, or to bottom of saw cut. Do not install loop wires in an expansion joint.

j. Twist Loop Lead-in 3 turns per foot.

3. Loop Sealing

After successfully testing each loop, fill the slots with sealant to fully encase the conductors.

a. Seal the slot within one hour of cutting slot.

b. Ensure that the sealant is at least 3 inches (75 mm) thick above the top conductor in the sawcut.

c. Apply the sealant so that subsequent expansion does not extend the sealant material above the pavement surface.

d. In case of accidental spill, before the sealant sets, remove surplus sealant from the adjacent road surfaces without using solvents or epoxy sealants.

e. When the Engineer determines that the loop sealant can accommodate traffic but the surface is tacky, dust the sealer on the pavement surface with cement dust before opening the roadway to traffic.

f. Dispose of the solvents used to clean loop installation equipment according to the manufacturer's specifications and local, State, and Federal regulations.

4. Loop Connections

Connect loop conductors to a shielded lead-in cable that runs from the pull box adjacent the pavement edge or condulet to the detector hook-up panel in the controller cabinet, unless otherwise specified in the Plans.

a. Use continuous (no splices) shielded lead-in cable from the pull box or condulet to the cabinet input file terminal. Do not ground the shield in the loop lead-in cable at the cabinet.

b. Connect each loop to an individual detector channel as specified in the Plans.

c. If the Plans specify that two or more loops will be operated on the same detector channel or detector amplifier unit, wire them in series to their loop lead-in at the pull box or condulet.

d. Use series-parallel connections when series connections do not meet the manufacturer's specified operating range for the detector amplifier unit.

e. Make weather-tight and waterproof splices as detailed on the Plan Standard Detail Sheets. Make loop splices to loop lead-in cable only after the detector system has been tested and demonstrated under traffic conditions to the Engineer's satisfaction.

5. Loop Maintenance

a. Locate all existing loops, determine the operational status of all loop assemblies, and notify the Engineer prior to commencing loop construction activities at the intersection.

b. Maintain all existing, operational loops, unless otherwise notified by the Engineer. Repair of an existing loop that is non-operational prior to beginning work will be considered as extra work.

c. Locate points of conflict between new loops and existing loops, and install all new loops and saw cuts so as not to cut existing loop lead-ins and loop wires that are to be retained.

d. If an existing operational loop that is not scheduled for replacement fails during the construction time frame, notify the Engineer and complete the replacement of the damaged loops immediately.

e. Loops that are removed or destroyed as part ofa construction, rehabilitation, or maintenance project shall be replaced and returned to full operation within the following time frames, based on the route prioritization rating:

State Route Prioritization Rating	Left-turn Loop Detection	Mainline/Side-street Presence Loop Detection	Set-back Loop Detection
CRITICAUHIGH	5 calendar days	5 calendar days	28 calendar days
MEDIUM	14 calendar days	14 calendar days	28 calendar days
LOW	28 calendar days	28 calendar days	28 calendar days

The Office of Transportation Data will provide the prioritization rating of the state route. All costs associated with the replacement of the loops damaged during construction shall be the responsibility of the Contractor.

J. Pedestrian Push Button

Install the push button with a pedestrian instruction sign as illustrated on the Department's Standard Detail Sheets and according to the Plans.

I. Place the pedestrian buttons as shown on the Signal Plan Sheet and within 10 inches (254 mm) of sidewalk or concrete landing pad. Position the pedestrian button to correspond to the appropriate signal phase. Locate pedestrian buttons perpendicular to the appropriate signal indication and signal phase, and as field conditions require.

2. Place the center of the buttons between 38 inches (0.965 m) and 42 inches (1.05 m) above the sidewalk or ground level.
3. Seal all openings to prevent moisture from entering the pushbutton.

K. Cable

Install and connect electrical cable to the proper equipment to produce an operating traffic signal system. Use stranded copper cable conforming to Section 925.

Install wiring in accordance with IMSA, NEMA, UL, and the Department's Traffic Signal Wiring Standards, shown in Tables 647-1, 647-2, 647-3, 647-4, 647-5, and 647-6 of this Specification.

In addition to the information provided below, see Section 682, Section 922, and Section 925 for cable equipment and installation specifications.

Table 647-1 Vehicular Signals Georgia DOT Wiring Standards

Signal Indications	Four Conductor Cable		Seven Conductor Cable		Ten Conductor Cable	
	Phases 2, 4, 6, & 8	Phases 1, 3, 5, & 7	Phases 2, 4, 6, & 8	Phases 1, 3, 5, & 7	Phases 2, 4, 6, & 8	Phases 1, 3, 5, & 7
Red	Red Wire		Red Wire		Red Wire	
Yellow	Black Wire		Orange Wire		Orange Wire	
Green	Green Wire		Green Wire		Green Wire	
Red Arrow		Red Wire		White Wire with Black Tracker		Red Wire with Black Tracker
Yellow Arrow		Black Wire		Black Wire		Orange Wire with Black Tracker
Flashing Yellow Arrow		Green Wire		Orange Wire		Blue Wire
Green Arrow		Green Wire		Blue Wire		Green Wire with Black Tracker
Auxiliary					Black Wire	Black Wire
Neutral	White Wire	White Wire	White Wire	White Wire	White Wire	White Wire
Spare					White Wire with Black Tracker	White Wire with Black Tracker

Table 647-2 Vehicular Loop Detectors Georgia DOT Wiring Standards				
Detectors	**Phases 3, 4, 7, and 8 Presence Loops**		**Phases 2 and 6 Setback Pulse Loops and Phases 1 and 5 Presence Loops**	
	Loop Wires	**Shielded Loop Lead-in Cable, 3 Pair**	**Loop Wires**	**Shielded Loop Lead-In Cable, 3 Pair**
Right Curb Lane	Red Wire	Red/Black Pair (1)	Red Wire	Red/Black Pair (1)
Second Lane	Green Wire	Green Black Pair (1)	Green Wire	Green Black Pair (1)
Third Lane	White Wire	White/Black Pair (1)	White Wire	White/Black Pair (1)
Fourth Lane	Red Wire	Red/Black Pair (2)	Red Wire	Red/Black Pair (2)
Fifth Lane	Green Wire	Green/Black Pair (2)	Green Wire	Green/Black Pair (2)
Sixth Lane	White Wire	White/Black Pair (2)		
First Left-Turn Lane			Red Wire	Red/Black Pair (3)
Second Left-Turn Lane			Green Wire	Green/Black Pair (3)

Table 647-3 Pedestrian Signals Georgia DOT Wiring Standards				
Signal Indications	**Four Conductor Cable**		**Seven and Ten Conductor Cable**	
	Phases 2 and 6	**Phases 4 and 8**	**Phases 2 and 6**	**Phases 4 and 8**
Don't Walk	Red Wire	Red Wire	Red Wire	Orange Wire
Walk	Green Wire	Green Wire	Green Wire	Blue Wire
Neutral	White Wire	White Wire	White Wire	White Wire

Table 647-4 Pedestrian Detectors Georgia DOT Wiring Standards		
Push Buttons	**3 Pair Shielded Cable**	
	Phase 2 and 6	Phase 4 and 8
Call	Green and Black Pair	Red and Black Pair

NOTE: Do not use aluminum cable.

Table 647-5 Ramp Meter Signals Georgia DOT Wiring Standards	
Signal Indications	**3-Section Signal Heads Seven Conductor Cable L1,L2,L3**
Red	Red Wire
Yellow	Orange Wire
Green	Blue Wire
Neutral	White Wire

Table 647-6 Ramp Meter Loop Detectors Georgia DOT Wiring Standards				
	Demand Detector Loops		**Queue Detector Loops**	
	Loop Wires	**Shielded Loop Lead-In Cable, 3 Pair**	**Loop Wires**	**Shielded Loop Lead-in Cable, 3 Pair**
Lane 1	Red Wire	Red/Black Pair (2)	Red Wire	Red/Black Pair (1)
Lane2	Green/Wire	Green Black Pair (2)	Green Wire	Green/Black Pair (1)
Lane3	White Wire	White/Black Pair (2)	White Wire	White/Black Pair (1)
	Passage Detector Loops		**Mainline Detector Loops (if used)**	
	Loop Wires	**Shielded Loop Lead-in Cable, 3 Pair**	**Loop Wires**	**Shielded Loop Lead-in Cable, 3 Pair**
Lane 1	Red Wire	Red/Black Pair (3)	Red Wire	Red/Black Pair (4)
Lane 2	Green Wire	Green/Black Pair (3)	Green Wire	Green/Black Pair (4)
Lane 3	White Wire	White/Black Pair (3)	White Wire	White/Black Pair (4)

L. Signal Cable for Vehicular Signal Heads and Pedestrian Heads

Install cable for signal heads and pedestrian heads as follows:

1. For vehicle signal heads, install one 7-conductor or IO-conductor signal cable for each intersection approach from the controller cabinet to the through-signal head on each approach as directed by the Engineer. From this leftmost signal head, install a 7-conductor or IO-conductor signal cable to each of the other signal heads on the same approach in sequence. If a flashing yellow arrow signal head is used for the left turn display, install either a second 7-conductor signal cable per left tum phase or one 10-conctor signal cable for each intersection approach.
2. For pedestrian signal heads, install one 4-conductor or 7-conductor signal cable from the controller cabinet to each pedestrian head installation location to operate either one or two pedestrian heads.
3. Make a minimum 1 foot (300 mm) diameter 3 tum weather drip loop as shown in the Standard Detail Drawings in the Plans at the entrance to each signal head.
4. Neatly tie signal cables leaving a structure or weatherhead to enter a signal fixture. Tie the cables to the messenger cable as illustrated in the Standard Detail Drawings.
5. For Ramp Meter signal heads install one 7-conductor signal cable for each lane of the Ramp Meter operation from the controller cabinet.

M. Interconnect Communications Cable

Use fiber optic interconnect cable as specified in the Plans for all new interconnected signal systems. See Section 935 for fiber optic cable information, specifications and installation and testing techniques, and all other signal interconnect methods. Install interconnect communications cable as follows:

1. Provide support for the interconnect cable on new or existing utility poles or signal poles; install underground in conduit.
2. Use fiber optic standoff brackets as needed to prevent damage from poles, trees and other structures.
3. Pull cables with a cable grip that firmly holds the exterior covering of the cable.
4. Pull the cables without dragging them on the ground, pavement or over or around obstructions. The Engineer will inspect and approve the cable prior to installation. Use powdered soapstone, talc, or other approved inert lubricants to pull the cable through the conduit.
5. When using a separate messenger cable, spirally wrap the communications cable with a lashing machine according to the IMSA-20-2 Specifications.
6. Do not splice outside the signal cabinet except at the end of full reels of 5,000 feet (1500 m).
7. Ensure that splice points are near support poles and accessible without closing traffic lanes.
8. Unless drop cable assemblies for communications are used, loop the cable in and out of the control cabinets. Coil and tie 10 feet (3 m) of cable in the controller cabinet foundation. Tape the cable ends to keep moisture out until the terminals are attached.
9. Prevent damage to the cable during storage and installation.

NOTE: Do not allow anyone to step on or run over any cable with vehicles or equipment.

N. Loop Detector Lead-in Cable

Use 3-pair shielded lead-in cable in compliance with Section 925 and manufacturer's recommendations for Detector loop lead-in installed for loop detectors. Ensure the three pair has 3 separate distinguishing colors. Use a shielded lead-in cable connecting the loop to the detector hook-up panel in the controller cabinet, unless otherwise specified in the Plans. Provide a separate 3- pair for each phase or future phase.

1. Splice the loop detector wire to a shielded loop detector lead-in cable in a pull box adjacent to the loop detector installation.
2. Use continuous (no splices) shielded lead-in cable from the pull box or condulet to the cabinet input file terminal. If induced voltage is present, the shield in the loop lead-in cable shall be grounded to cabinet per NEC. Otherwise do not ground the shield in the loop lead-in cable at the cabinet.
3. Connect each loop to an individual detector channel as specified in the Plans.
4. Each detection loop shall be connected to the control cabinet via separate lead-in pair.
5. Set back loops with aerial loop leads to the control cabinet shall be supported by¼ inch messenger cable with no splices between the control cabinet and the initial point of aerial attachment.
6. Make weather tight and waterproof splices between lead-in and loop wire. Loop installation may be approved only after the detector system has been tested and demonstrated under traffic conditions to the Engineer's satisfaction, during the Operational Test Period.

O. Pedestrian Push Button Lead-in

Use 3-pair shielded lead-in cable compliant with Section 925 for pedestrian push buttons. Install one 3-pair shielded lead-in cable to each pedestrian push button station(s) location to operate either one or two push buttons. Do not ground

the shield for the push button lead-in cable at the controller cabinet. Do not use the same 3 pair cable for loop and pedestrian detectors.

P. Messenger Cable, Stranded-Steel

The messenger is used to support signal cable indicated in the Plans as overhead cable. Use devices such as aluminum wrap, aluminum wire ties or lashings to attach the cable.

- Before erecting the messenger strand, determine the suspension strand length to span the distance between the poles.
- Run the messenger strand from structure to structure without splicing.
- The minimum allowable sag is two and one-half percent (2.5%) for timber poles, five (5%) for strain poles of the longest diagonal distance between the signal poles unless pole manufacturers specifications exceed 2.5%. The contractor is responsible for providing the District Signal Engineer with sag calculations for new installations.
- Calculate attachment points for the messenger strand at the signal pole according to the Plan Detail Sheet.

Set messenger strands so that the height conforms to the clearances on the Standard Detail Drawings. Attach cables to messenger cable using lashing wire, aluminum ties, or lashing rods (Subsection 925.2.43). If lashing rods are used use lashing rods sized for the cables and messenger strand. Only use lashing rods that are of the same material as the messenger strand. Lashing wire shall only be used to support aerial loop lead-in and fiber optic.

1. Drill wood poles to receive the eye bolts so that the span wire and eyebolt at each connection form a straight angle.
2. Never pull or strain the messenger on the eye bolt to an angle of variance greater than ten degrees (10°).
3. Attach down guy wires to guy hooks. Use a minimum 3/8 inch messenger cable for down guys. Never attach them directly to the eye of an eyebolt.
4. Ensure that messenger strand clearances conform with local utility company Standards.
5. Make stranded messenger cable attachment points with the appropriate size strand vises or 3 bolt clamps. Stranded steel messenger cable is not paid for separately under this Specification.
6. Use minimum ¼ inch messenger cable.
7. Use standoff brackets as needed to prevent damage from poles, trees or other structures.

NOTE: Never splice messenger cable between structures or stand off brackets.

Q. Underground Cable for Signal Circuits

Underground cable for signal circuits includes cable, with conduit, as shown in the Plans. Install cable under existing pavement or surfaced shoulder, according to Subsection 680.3.05.

I. Cable in Conduit

Pull cable into conduits as follows:

a. Pull cables into conduits without electrical or mechanical damage. Pull cables by hand only. The use of trucks or other equipment is not permitted, unless approved by the Engineer. If mechanical pulling is approved, do not exceed the manufacturer's tension rating for the cable.

b. Pull cables with a cable grip that firmly holds the exterior covering of the cable.

c. Use powdered soapstone, talc, or other inert lubricants to place conductors in conduit according to manufacturer's recommendations.

d. Handle and install the conductors to prevent kinks, bends, or other distortion that may damage the conductor or outer covering.

e. Pull all cables in a single conduit at the same time. When pulling cables through hand holes, pole shafts, etc., use a pad of firm rubber or other material between the cable and the opening edges to prevent cable damage.

f. When installing cable in conduit with existing signal cable circuits remove all existing cables and pull them back into the conduit with the new cables.

g. The distance between pull boxes in a run of conduit shall not be greater than l 00 feet (30 m), unless otherwise shown in the Plans or approved by the Engineer or District Signal Engineer, with the exception of fiber optic cable.

h. The distance between pull boxes in a run of conduit for fiber optic cable shall not exceed 750 feet (225 m), unless otherwise shown in the Plans or approved by the Engineer. Identification tape and tone detection wire shall be used for fiber optic cable in conduit. All unused conduit shall have a continuous pull cable installed between pull boxes.

2. Splices

Required splicing shall be performed according to the National Electric Code; use materials compatible with the sheath and insulation of the cable.

Insulate required splices with electrical insulation putty tape, plastic, pressure sensitive, all-weather 1.5 mil (0.038 mm) electrical tape in accordance to standard details.

a. Make the spliced joints watertight.

Note: Splice detector wires to shielded loop detector lead-in at pull boxes located immediately after the loop wire leaves the roadway. No splices will be permitted in shielded loop detector lead-in cable from this point to the controller cabinet.

R. Conduit and Fittings

Install conduit by type (ORS, HDPE, PVC) as shown in the Plans and the Standard Detail Drawings. Refer to the NEC, for conduit full percentages.

Separate the power cable to the controller cabinet from all other cables in its own tin (25 mm) galvanized rigid steel conduit except inside poles. Ensure that conduit conforms to Section 682, Section 923 and Section 925 with the following addition:

- Use flexible conduit only where shown in the Details or as directed to do so in writing by the District Signal Engineer.

Use the conduit size specified in the Plans, unless otherwise directed by the Engineer. Obtain written approval from the Engineer prior to installing conduit other than the size specified in the Plans.

All 2 inch (50 mm) conduit elbows shall be "sweep" type. The minimum radius for the elbow is 18 inches (450 mm), unless otherwise approved by the Engineer.

NOTE: Do not use multi-cell conduit.

Install conduit and fittings as follows:

1. Ensure that exposed conduit on poles are galvanized rigid steel (ORS) conduit.
2. Ream the ends of metallic conduit after cutting the threads. Ream other conduit as necessary.
3. Cut the ends square, and butt them solidly in the joints to form a smooth raceway for cables.
4. Make conduit joints to form a watertight seal.

5. Coat metallic conduit threads with red- or white-lead pipe compound, thermoplastic or Teflon seal. Ensure that they are securely connected.
6. Make plastic conduit joints with materials recommended by the conduit manufacturer.
7. Install bushings in the conduit to protect the conductors. When conduit is installed for future use, properly thread and cap the ends of the metallic conduit runs.
   a. Plug the ends of nonmetallic conduit runs to prevent water or other foreign matter from entering the conduit system.
   b. Seal the exposed conduit ends with a permanently malleable material.
   c. Ensure that empty conduit installed for future wire or cable has a nylon pull string or cord inside that is impervious to moisture and rot and can withstand a load of 50 pounds (23 kg) without breaking. Secure this pull cord at each open end and at each pull box.
8. Ensure that conduit on pole exteriors are mounted with galvanized, two-hole straps or clamps. Place the clamps not more than 3 feet (1 m) from junction boxes, condulets, or weatherheads. Place it at 3 foot (0.9 m) intervals elsewhere.
   a. Fasten the clamps to wood poles with galvanized screws or lag bolts.
   b. Do not install conduit risers on concrete, steel, or mast arm poles unless approved by the Engineer.
9. Install a weatherhead at the end of exterior conduit runs on a pole or other structure to prevent moisture or other matter from entering the conduit.
10. After installation, ensure that the conduit or fitting placement has not warped or distorted any condulet, terminal, control or junction box.
11. Ensure Conduit that is terminated at poles is grounded at the pull box.

S. Underground Conduit

Underground conduit includes encased or direct burial conduit.

1. Install the conduit in a trench excavated to the dimensions and lines specified in the Plans.
   a. Provide at least 18 inches (450 mm) finished cover, unless otherwise specified.
   b. Under pavement, excavate at least 36 inches (900 mm) below the bottom of the pavement.
2. Before excavation, the Contractor is responsible for determining the location of electrical lines, drainage, or utility facilities in the area to prevent damage.
   a. Place the conduit where it will not conflict with proposed guardrail, sign posts, etc.
   b. Change locations of conduit runs, pull boxes, etc., if obstructions are encountered during excavation. Changes are subject to the Engineer's approval.
   c. Where possible, provide at least 12 inches (300 mm) between the finished lines of the conduit runs and utility facilities such as gas lines, water mains, and other underground facilities not associated with the electrical system.
3. When the conduit run is adjacent to concrete walls, piers, footings, etc. maintain at least 4 inches (100 mm) of undisturbed earth or firmly compacted soil between the conduit and adjacent concrete or, when the conduit is encased, between the encasement and the adjacent concrete. Unless specified in the Plans, do not excavate trenches in existing pavement or surfaced shoulders to install conduit.
4. When placing conduit under an existing pavement, install the conduit by directional boring, or other approved means. See Section 682 for directional boring pipe specifications. Obtain the Engineer's approval prior to installing conduit by means of boring-method.
5. When the Plans allow trench excavation through an existing pavement or surfaced shoulder, restore the pavement shoulder surface, base, and subgrade according to the Specification.

6. Cut trenches for conduit on a slight grade (0.25 percent minimum) for drainage, unless otherwise specified. When the grade cannot be maintained all one way, grade the duct lines from the center, both directions, down to the ends.
7. Avoid moisture pockets or traps. Excavate vertical trench walls.
8. Tamp the bottom of the trench to produce a firm foundation for the conduit.
9. When necessary to prevent damage, sheet and brace the trenches and support pipe and other structures exposed in the trenches.
10. Conduit installed for fiber optic cable installation shall have identification tape and detectable tone wire installed for detection as specified and detailed in the Project Standard Detail Sheets.
11. Install direct burial conduit as shown in the Plans. Use rigid galvanized steel, or polyethylene conduit. Excavate at least 36 inches (900 mm) below the top of the finished ground or 36 inches (900 mm) below the bottom of the pavement.
12. When rock is in the bottom of the trench, install the conduit on a bed of compacted, fine-grain soil at least 4 inches (I 00 mm) thick.
13. Conduit installed for fiber optic cable installation shall have detectable tone wire installed for detection as specified in Section 682 and detailed in Standard Detail Sheets.

T. Encased Conduit

Place encased conduit in the locations shown in the Plans unless otherwise specified. Construct as follows:

1. Construct the encasement using Class A concrete that meets requirements in Section 500.
2. Extend the encasement or conduit under roadway pavements or surfaces 6 inches (150 mm) past the outer edge of paved shoulders or sidewalks, or past curbs if no shoulder or sidewalk is present.
3. Extend the conduit at least 3 inches (75 mm) beyond the encasement.
4. Place 3 inches (75 mm) of concrete in the bottom of the trench and place the conduit on top of it.
5. Temporarily plug the ends of the conduit to prevent concrete or foreign materials from entering.
6. Cover the conduit with at least 3 inches (75 mm) of concrete. Wait to encase the conduit with concrete until the Engineer inspects and approves the conduit.
7. Cure the concrete encasement according to Subsection 500.3.05.Z, except curing may be reduced to twenty-four (24) hours. Use a precast encasement if approved by the Engineer.

U. Backfilling

Immediately backfill the conduit after the Engineer's inspection and approval, except for encased conduit, which must complete a twenty-four (24) hour cure period.

1. Backfill with approved material free of rocks or other foreign matter.
2. Backfill in layers no greater than 6 inches (150 mm) loose depth, up to the original ground level.
3. Compact each layer to one hundred percent (100%) of the maximum laboratory dry density as determined by GDT 7, GDT 24a, GDT 24b, or GDT67 whichever applies.

V. Conduit on Structures

Install conduits, condulets, hangers, expansion fittings, and accessories on structures according to the Plans and, unless otherwise specified, the following:

1. Run the conduit parallel to beams, trusses, supports, pier caps, etc.
2. Install horizontal runs on a slight grade without forming low spots so they may drain properly.
3. Run conduits with smooth, easy bends. Hold the conduit ends in boxes with locknuts and bushings to protect the conductors.

4. When not specified in the Plans or Special Provisions, submit the type and method for attachment to structures to the Engineer for submission to the District Signal Engineer for approval.
5. Ground galvanized rigid steel conduit in pull boxes.

All exposed conduit shall be galvanized, rigid conduit unless otherwise specified.

W. Testing Conduit

After installing the conduit, test it in the presence of the Engineer.

1. Test conduit using a mandrel 2 inches (50 mm) long and 0.25 inches (6 mm) smaller in diameter than the conduit.
2. Repair conduit to the Engineer's satisfaction if the mandrel cannot pass through. If repairs are ineffective, remove and replace the conduit at no additional cost to the Department.
3. Thoroughly clean the conduits. When installing conduit but wiring at a later date:
   a. Perform the mandrel test.
   b. Ream the duct opening to remove burrs or foreign matter.
   c. Thoroughly clean the duct.
   d. Provide and install a weatherproof cap at each open end.
   e. All installed conduit not used or containing cable shall have a continuous nylon pull string installed between junction boxes.

X. Grounding

Ground the cabinets, controller, poles, pull boxes, and conduit to reduce extraneous voltage to protect personnel or equipment.

NOTE: Grounding shall meet the minimum requirements of the NEC.

Provide permanent and continuous grounding circuits with a current-carrying capacity high enough and an impedance low enough to limit the potential above the ground to a safe level.

Perform grounding as follows:

1. Bond the grounding circuits to nonferrous metal driven electrodes. Use electrodes that are at least 0.625 inches (15 mm) in diameter, 8 feet (2.4 m) long, and are driven straight into the ground.
2. Use the shortest possible ground lead that leads directly to a grounding source.
3. Ensure that the maximum resistance between the ground electrode and the earth ground is no greater than twenty five (25) ohms.
4. Connect the ground electrodes and the ground wire with an exothermic weld or ground rod clamp as approved by Signal Engineer.
5. Connect neutral conductors to the cabinet buss-bar and ground them at each terminal point.
6. Ground the cabinet with a No. 6 AWG solid copper wire between the buss-bar to the ground electrode. Bends shall not exceed 4 inch (100 mm) radius bends.
7. Permanently ground the poles by bonding the No. 6 AWG solid copper wire to a separate ground rod.
8. Ground pole-mounted accessories to the pole.
9. Underground metallic conduit or down guys are not acceptable ground electrodes. Do not use Snap-On connections.
10. For extended distances between Ramp Meter and IVDS additional grounding may be required by the manufacturer.

Y. Ground Rod

Install copper clad ground rods adjacent to the traffic signal pole bases, controller cabinet bases, and in pull boxes to shield and protect the grounding system.

When ground rods are not protected, bury them at least 2 inches (50 mm) below the finished ground level.

1. Use 0.625 inch (15 mm) diameter ground rods at least 8 feet (2.4 m) long. Use copper clad ground rods.
2. Drive single ground rods vertically until the top of the rod is no more than 2 inches (50 mm) above the finished ground.
3. Attach a length of No. 6 AWG solid copper wire to the top of the ground rod using an exothermic weld.
4. When controller cabinets are mounted on timber poles, ground them with No. 6 AWG solid copper wire attached to the ground rod. Run the wire inside a minimum 0.75 inch (19 mm) rigid conduit attached to the timber pole and to the chassis ground in the controller cabinet.
5. When ground penetration is not obtained:
   a. Place a horizontal ground rod system of three (3) or more parallel ground rods at least 6 feet (1.8 m) center-to-center and 30 inches (720 mm) below the finished ground.
   b. Ensure that this grounding system produces a resistance of25 ohms or less.
   c. Join the ground rods and connect them to the grounding buss of the traffic signal cabinet with No. 6 AWG solid copper wire.
6. Install a ground wire on wood poles.
   a. Use at least No. 6 AWG solid copper wire bonded to the grounding electrode and extending upward to a point perpendicular to the uppermost span.
   b. Place wire staples no greater than 2 feet (0.6 m) apart to secure the ground wire to the pole.
   c. Connect the span wire to the pole ground using copper split bolt connectors. Provide a separate ground rod for pole mount cabinets. Do not use the pole ground. Bond the pole ground to the pole cabinet ground rod.
7. Ensure that grounding for signal strain poles conforms to the grounding assembly typical erection Detail Sheet in the Plans.
8. Permanently ground cabinet and cabinet conduits to a multi-terminal main ground buss.
   a. Use a No. 6 AWG solid copper wire bonded between the buss and grounding electrode.
   b. Connect the power company neutral, conduit ground, and grounds of equipment housed in the cabinet to the buss-bar.
   c. Do not ground to a permanent water system instead of the driven ground rod. Ensure that grounding devices conform to the requirements of the NEC and NEMA.
9. When testing for resistance ensure the ground is dry. The Contractor is responsible for submitting the ground test results.

Z. Signal Poles

See Section 501 for signal pole materials certification and Subsection 925.2.27, Subsection 925.2.28, Subsection 925.2.29, Subsection 925.2.30 and Subsection 925.2.31 for traffic signal equipment. Refer to the Plans for pole locations.

Where necessary, adjust pole location to avoid utility conflicts. Provide minimum clearance distances between the signal pole and the roadway as specified in the Plans and on the Standard Detail Drawings.

1. Strain Poles

   Provide signal strain poles that conform to Section 639.

Provide caissons or foundations that conform to the "Construction Detail for Strain Pole and Mast Arm Pole Foundations" in the Plans.

Determine the required foundation size based on the manufacturer's specified "bending moment at yield" for each pole.

Provide strain poles with manufacturer-installed holes for pedestrian heads and push buttons. Seal unused holes with water tight plugs that match the pole finish provided by the manufacturer of the pole. All steel strain pole holes that are used shall have a rubber grommet or weather head.

Rake the poles during installation to provide a pole that is plumb once the load is applied.

2. Metal Poles

Install metal poles as follows:

a. Ensure that anchor bolts, reinforcing bars, and ground rods conform to Section 639 and Section 852 and are placed in the excavation.

b. Support the anchor bolts with a template to provide the proper bolt circle for the pedestal or pole to be installed. Anchor bolts shall be installed without any modifications. Refer to signal details for proper installation.

c. Wire the reinforcing bars together or to the anchor bolts.

d. Wire the conduits in the base to the reinforcing bars for support. Ensure that they are accessible above and beyond the foundation.

e. Before pouring the foundation concrete, determine that the anchor bolt orientation is correct so that the tensile load is divided between at least two anchor bolts. Pour and vibrate the concrete with the Engineer present.

f. Ensure that the pole foundations and pedestals with the anchor-type base conform to Section 500 and Section 639. Do not install or locate poles without the Engineer's approval. Ensure the foundation meets AASHTO guidelines.

   1) The Engineer may take a concrete test cylinder as it is being poured.

   2) Cure the cylinder and submit it for testing to the Office of Materials and Research.

g. If the concrete foundation fails to meet the requirements of the Specifications and is not accepted, replace the foundation upon notification of failure.

h. After installing poles and applying the load of the signal span, inspect them for plumb and for the proper horizontal position of the mast arm, when applicable. Make sure all threads of the nut are threaded onto the anchor bolt.

i. Correct deficiencies by using the leveling nuts on the anchor bolts or by adjusting the mast arm.

j. The Engineer will examine the pedestals and poles for damaged paint or galvanizing. Restore the finish coating where necessary.

k. After the Engineer approves the pole installation, provide an acceptable method of protecting the area between the pole base and the top of the foundation to prevent the accumulation of debris.

   If the finish or galvanized steel materials is scratched, chipped, or damaged, the material will be rejected. The finish may be replaced as specified under Section 645, with the Engineer's approval.

I. For poles or arms that need galvanization, thoroughly clean the steel poles and arms and touch up non-galvanized parts with i-d red or original-type primer.

m. Apply the remaining coats according to the System V (Heavy Exposure) Section 535, unless otherwise indicated in the Plans. The entire pole shall be the same color.

n. Install a service bracket and insulator on one pole at each intersection to attach power service wire as specified in the Plan Details. Install a disconnect box on the cabinet pole at each intersection to attach power service where the power service is provided overhead.

o. Install poles to which controller cabinets are attached with mounting plates, bolts, nipples, and at least two, 2.5 inch (64 mm) threaded openings at the top and at least two (2) 2 inch (50 mm) at the bottom of the pole.

p. Attach the fittings to the poles as specified by the manufacturer in the Plans or as the Engineer directs. The fittings may include:

- Cast aluminum cap
- Pole clamp hardware for span wire attachment
- Weatherhead with chase nipples and couplings
- Galvanized elbow with bushing installed by cutting the pole and welding in place around the entire circumference

q. The Office of Materials and Research will inspect the anchor bolts. If approved, the Office of Materials and Research will display the inspector's hammer stamp mark on the top of the bolt.

NOTE: Never add holes or openings to the metal pole or mast arm without approval from the Office of Bridge and Structural Design.

3. Concrete Strain Poles

a. Ensure that concrete strain poles meet the requirements of Section 639 and detailed construction drawings.

b. Install concrete strain poles so that the angle of variance between the eye bolt on the pole and the span wire is less than ten degrees (10°).

c. Verify pole hole orientations for pedestrian heads, pedestrian push button stations, luminaries arms, etc., with the Engineer prior to proceeding with traffic signal installation. For poles at cabinet location provide at least two 2.5 inch (64 mm) openings at the top of pole and at least two 2.0 inch (50 mm) threaded openings at the bottom.

d. Plug all unused holes. Use Grout or threaded fittings. Match the finish of the pole.

4. Mast Arms

Install mast arms that can accommodate traffic signal mounting hardware and that adhere to the manufacturer's recommended procedures and Section 925 and Section 915. Do not add holes.

a. Seal the openings in the mast arms to prevent pests from entering.

b. Align the mast arm to allow the signal heads to hang plumb at the correct height without using extensions.

c. All Mast arms are to be galvanized unless indicated otherwise in the Plans.

NOTE: The Contractor shall submit a "Mast Arm Pole Chart" to the Engineer and the Office of Bridge and Structural Design for review and approval as described in Subsection 647.1.03.F of this Specification.

Verify pole hole orientations for pedestrian heads, pedestrian push button stations, luminaries arms, etc., with the Engineer prior to proceeding with traffic signal installation.

5. Aluminum Pedestrian Pedestals Poles

Install aluminum pedestal poles, which adhere to Section 850 on breakaway aluminum bases that meet the requirements for breakaway construction. See Section 925 for breakaway base requirements. See the Standard Detail Drawings for Pole and Foundation Details.

a. Secure at least four anchor bolts in a concrete foundation as shown in the construction Detail.

b. As an alternate to a concrete foundation install a Pedestal Foundation Anchor Assembly (Subsection 925.2.29). Install the foundation until the top of the base plate is level with the ground. Slide bolt heads through the keyhole and under the base plate against the bolt head keepers with threads up. Bolt the pole base to the foundation. Adhere to the manufacturer's instructions for installation.

1) Use a Universal Driving Tool with the correct kelly bar adaptor and bolts supplied with the tool.

2) Attach driving tool assembly to the foundation base plate using the bolts provided with each foundation. Be sure to align the tool soothe holes in the tool line up with the proper bolt circle on the foundation.
3) Stand the foundation, with the attached drive tool assembly, upright and attach the drive-tool-foundation to the kelly bar.
4) Raise the kelly bar until the foundation swings free of the ground. Maneuver the kelly bar until the point of the foundation is over the marked installation location.
5) Lower the kelly bar until the point of the foundation is forced into the ground and the helix is flush with the ground surface.
6) Ensure the shaft of the foundation is plumb by checking the shaft with a level on two sides that are at least 90 degrees from each other. Recheck the shaft to be sure it is plumb when the foundation has penetrated 1 foot into the ground.
7) When the base plate of the foundation is 1 (25 mm) to 2 (50 mm) inches above the ground line remove driving tool.

c. Contain the wiring inside the pole or in approved hardware. Do not allow conduit outside the pole.
d. Position the pedestal pole plumb and high enough to clear the pedestrian's head as shown in the Plans. Ensure that the bottom of the pedestrian signal housing including brackets is not less than 10 feet (3 m) from the ground line. If using a vehicle signal housing ensure pole is adequate to give signal head a height of 12 feet (3.6 m)
e. Instruct the supplier to furnish a mill certificate that shows the alloy and physical properties of the steel used in fabricating the anchor bolts. The bolts may be subjected to a tensile and shear strength test.

6. Timber Poles

Timber poles do not require the use of concrete for filling the cavity around the pole base.

Use timber poles that meet the requirements of Section 861 and Section 639. Use Class II for all signal support poles. Use Class IV for aerial loop lead-in or communication cable if approved by the Engineer. Poles shall be inspected and include AWW stamp.

Drill wood poles to receive the eye bolt so that the angle of variance between the eye bolt and span wire at each connection is less than ten degrees (10°). See the Standard Detail Drawings for additional information.

Guy timber poles use single or double guy wires as shown in the Plans and as directed by the Engineer. Guy helper cables with separate guy wires when helper signal span cables are indicated in the Plans.

NOTE: Never attach down guy wires to eye bolts. Attach down guy wires to angle guy attachment only and install insulating rods on all down guy installations as detailed on Standard Detail Sheets.

AA. Pull Boxes

Ensure that pull boxes conform to the Standard Detail Drawings or Plan Detail Sheet. Install pull boxes as required by the Specifications and Plans.

1. Include provisions for drains in pull box excavations as specified.
2. Do not place the aggregate for the drain until the Engineer approves the excavation.
3. Do not set the pull box until the aggregate is in place.
4. Set the pull boxes in place, level, and install conduits as required. Conduit entrance shall be through the open bottom in Types 1, 2, 3, 4S and 5S. Conduit entrance shall be directly through cored holes in the side walls in Types 4 and
5. Conduit entrance shall be through the conduit terminators in Types 6 and 7.

Adjust the location of the pull box if necessary to avoid obstacles.

Where conduit entrance will be through the side wall in Types 4 and 5, or for conduit other than the terminator size provided in Types 6 and 7, use field cored conduit entrance holes in the side wall of the box. All field coring shall be made with a diamond-tipped masonry hole saw and according to the pull box manufacturer's recommendations.

Use an approved HDPE to EPVC coupling or an underground-type conduit adhesive where joining conduit or conduit bodies of dissimilar materials , such as HDPE-to-EPVC sweeps into pull boxes or installing into pull box conduit terminators.

- Do not locate pull boxes on the curb side of the signal pole in the intersection radius return
- Install pull boxes so that the long dimension is parallel to the adjacent roadway
- Install the pull box at a location that is level with the surrounding ground or pavement. Do not place a pull box in a ditch or depression. Unless otherwise shown in the Plans, when installed either in a sidewalk or in the ground, the top of the pull box shall be level with the sidewalk or ground surface.

5. Obtain the Engineer's approval, and begin backfilling and installing the frame and cover. Ground metal lids or covers.

BB. Span Wire and Span Wire Assemblies

Use span wire to support signal heads, cable, and other hardware only. Use messenger cable to support the aerial cable plant. Install span wire and messenger wire where specified in the Plans and in accordance with the Standard Detail Drawings. See Section 925 for information on span wire and messenger cable.

1. Install signal span wire not to exceed the sag specified by the pole manufacturer. Span wire used with timber pole installation shall have a minimum 2.5% sag. Span wire used with strain pole installation shall have a minimum 5% sag.
2. Use helper cables where specified in the Plans and on the Standard Detail Drawings.
3. For construction of a box or modified box span, use bullrings. Be consistent throughout the intersection in use of bull rings or strandvises. If bull rings are not used, strandvises shall be interlocked.
4. Install 12 inch (300 mm) diameter drip loop wrapped three times at the cable entrance to signal heads. Arrange cable so that it enters the structure from the bottom of the drip loop. Use a 24 inch (600 mm) diameter drip loop where cables enter a weatherhead and use 24 inch (600 mm) sag at comers of a span.
5. Use aluminum ties, lashing rods, or aluminum wrap to attach cables to span wire. When using aluminum wrap or aluminum ties, space at 6 inch (150 mm) increments. Aluminum wrap shall have at least three turns of wrap. Do not use lashing wire on span wire.
6. Ground all span wire and down guy assemblies as shown on Standard Detail Sheets. Bond all span wire together and bond to ground at every pole.

CC. Traffic Signal Heads

Place traffic signal heads according to the signal design and Plan Detail Drawings. Deviation from the Plans must be according to the MUTCD, current edition and at the Engineer's approval. Ensure all Traffic Signal Heads at an installation have the same appearance for the signal heads and the LED Modules. The Ramp Metering enforcement device shall be mounted on the back of one signal per lane and wired to the red display. The enforcement device shall be able to be viewed from downstream on the ramp.

1. Install traffic signal heads at least 17 feet (5.1 m), but no greater than 19 feet (5.7 m) over the roadway. AU vertically attached signal head assemblies shall have a metal support plate installed within the top section (RED) indication of the signal bead for additional support and stability. Install Ramp Metering traffic signal heads as shown on the Plans Detail Drawings.
2. Adjust signal heads on the same approach to have the same vertical clearance.
   a. Measure the clearance from the pavement to the lowest part of the assembly, including brackets and back plates.

b. Mount traffic signals on poles with a clearance of at least 12 feet (3.6 m) but no more than 19 feet (5.8m) above the sidewalk or pavement grade of the center of the highway, whichever grade is higher.

c. Mount and adjust Ramp Metering traffic signals as per the Plan Detail Drawings.

d. Mount and adjust Ramp Meter enforcement device (head) as per the Plan Detail Drawings.

3. Connect the signal cable to the wire in each signal head to provide the correct signal indication when the cables are connected to the controller cabinet back panels. Do not splice cables. Use wire nuts to make the connections to the LED signal modules lead-in. Make all connections in the top section. Ensure that the black jacket is pulled into the signal head 6 inches (150 mm).

4. Install optically programmable (OP) signal heads as shown in the Plans and Standard Detail Sheet and as directed by the manufacturer.

5. Mount OP heads securely or tether them to limit movement.

6. Mask the OP lamp for directing visibility under the Engineer's supervision.

7. Tether signal heads that have tunnel visors longer than 12 inches (300 mm), at the discretion of the Engineer.

8. Attach signal heads to mast arms using rigid mounting brackets. See Section 925 for equipment information. Adjust signal heads on mast arms so that all red indications on the same mast arm are at the same elevation.

9. Install lane control heads for reversible lane systems and Ramp Metering heads as shown in the Plans and the Standard Detail Drawings. Center each signal over the lane or lanes under signal control.

10. Leave a vertical clearance for blank-out signs as shown on the Standard Detail Drawings. Use a spirit level to ensure that the bottom edge of each sign is horizontal.

11. All LED modules shall be labeled with their turn on date on the backside of the LED insert.

DD. Pedestrian Signal Heads

Install pedestrian signal heads on wood, concrete, steel strain poles, wood or steel auxiliary poles, or metal pedestal poles. Do not mix pole mount methods at the same intersection installation.

Install the pedestrian signal heads as shown on the Standard Detail Drawings and the intersection Plan Sheets and Drawings.

Leave a vertical clearance from the bottom of the head to the ground level of at least 10 feet (3 m) unless specified by the Engineer.

1. Pedestal Mounts

Make pedestal mounts with a lower supporting assembly consisting of:

a. A 4 inch (100 mm) slip-fitter bracket

b. Hollow aluminum arms with a minimum inside cross-sectional area equal to a 1.5 inch (38 mm)

pipe Use serrated locking devices that firmly hold the signal heads in the required alignment.

c. For Pedestal Mounts using side hinge "clamshell". Secure "clamshell" to pedestal using 0.75 inch (19 mm) wide and 0.30 inch (0.75 mm) thick stainless steel bands.

2. Pole Mounts (Side of Pole)

For Metal poles, use side hinge "clamshell" mounting hardware or hardware as described in Wood Pole, Metal Pole alternate, or pedestrian pole.

a Side Hinge "Clamshell"

- Secure the hubs to metal or concrete poles using 0.75 inch (10 mm) wide and 0.030 inch (0.75 mm) thick stainless steel bands. Secure the hubs to wood poles using lag bolts.

b. Wood Pole or Metal Pole alternate:

Make pole mounts with the upper and lower assembly consisting of:

- A post arm with a minimum cross-sectional area equal to a 1.5 inch (38 mm) pipe
- A post hub plate that matches the outside pole contour
- Secure the hubs to metal or concrete poles using 0.75 inch (19 mm) wide and 0.030 inch (0.75mm) thick stainless steel bands. Secure the hubs to wood poles using lag bolts, orbanding.

Space the junctions so that each pedestrian signal head can be directed toward approaching traffic as needed. Use serrated locking devices that hold the pedestrian signal heads in alignment.

EE. **Blank-out Signs**

Install blank-out signs as shown on Plans or as follows:

I. Securely fasten the signs to a stationary structure or to a messenger strand support system.
   2. Center each sign over the lane or lanes under sign control, where applicable.
   3. Leave a vertical clearance for blank-out signs as shown in the Plans or in Subsection 647.3.05.EE, "Traffic Signal Heads." Use a spirit level to ensure that the bottom edge of each sign is horizontal.
   4. Use terminal strips to connect each sign electrically to the external control box orcabinet.

FF. Battery Backup System (BBS)

Install Battery Backup System (BBS) if indicated on the Plans. Install in accordance with the option as indicated on the Plans and as directed by the Engineer.

With the Battery Backup submittal provide calculations for determining the size of the inverter and batteries based on the actual power requirements for the intersection installation. Ensure that all auxiliary items are included in the calculations. Ensure the submittal specifies the model number and the firmware revision that is being supplied.

Ensure that the external cabinet supplied meets the Section 925 Specifications and is base mounted next to the 332A cabinet as specified. Do not attach the battery external cabinet to the 332A cabinet unless otherwise specified. The external cabinet option allows for 2 separate configurations. Ensure that the correct configuration is installed in accordance with the Plans. Make all connections to the 332A cabinet through the base of the cabinets.

Provide date of manufacture of all batteries provided.

Ensure the BBS functions as required by the specifications. Ensure the "ON BATTERY" relay provides an input into the controller Alarm 2. Install the two hour run time circuitry from the normally open contacts in the BBS controller to the AC+ and the mercury coil terminal in the traffic signal cabinet.

Ensure that the BBS is enabled to communicate via Ethernet connection.

Provide copy of all documentation (Operation and Maintenance Manual) for items supplied. Include with documentation any communications firmware and cable required to interrogate the unit for status, setup or logs.

GG. Power Meters

Install Power Meters per GDOT Standard Drawings and Utility Provider's Specifications.

647.3.06 Quality Acceptance

A. *Testing Loop Detector Installation*

Test each loop after installing the conductors in the slots cut in the pavement and before sealing.

- Perform a test where the loop wire is spliced to the shielded lead-in wire and where the shielded lead-in wire enters the controller cabinet
- If there are no splice points, such as in direct entry to the controller cabinet, only perform the tests at the controller

- Record the test results on the Loop Installation Data Sheet in Table 647-10, as shown in this section. Make copies of the data sheet as needed.
- Include the data sheets in the records, and place a copy in the controller cabinet.

Conduct the following five (5) tests to evaluate each loop installation for acceptance before sealing the loop in the pavement:

1. Induced AC Voltage Test

   Read 0.05 V AC or less on a digital voltmeter or no deflection on the pointer of an analog meter.

2. Inductance

   Inductance (l) is measured in microhenries (mH), and the total inductance is equal to the inductance of loop plus inductance of the loop lead-in.

   Acceptable inductance is within 10 percent (10%) of the calculated value for a single loop with the design criteria listed in Table 647-8 and Table 647-9:

Table 647-8 Standard (Bi-Pole) Loops	
6 ft x 6 ft (3 turns) [1.8 rn x 1.8 m (3 turns)]	I= 76 mH + 23 rnH per 100 feet of loop lead-in cable I = 76 mH + 23 mH per 30 m of loop lead-in cable
6 ft x 30 ft (2 turns) [1.8 rn x 9 m (2 turns)]	I = 126 rnH + 23 mH per 100 feet of loop lead-in cable I = 126 rnH + 23 rnH per 30 rn of loop lead-in cable
6 ft x 40 ft (2 turns) [1.8 rn x 12 rn (2 turns)]	I= 165 mH + 23 rnH per 100 feet of loop lead-in cable I = 165 rnH + 23 mH per 30 m of loop lead-in cable
6 ft x 50 ft (2 turns) [1.8 rn x 15 rn (2 turns)]	I = 205 rnH + 23 rnH per 100 feet of loop lead-in cable I= 205 mH + 23 mH per 30 rn of loop lead-in cable
6 ft x 70 ft (2 turns) [1.8 rn x 21 rn (2 turns)]	I = 285 mH + 23 rnH per 100 feet of loop lead-in cable I = 285 mH + 23 rnH per 30 m of loop lead-in cable

Table 647-9 Quadrupole (QP) Loops	
6 ft x 30 ft (2, 4, 2 turns) [1.8 m x 9 m (2, 4, 2, turns)]	I = 269 mH + 23 mH per 100 feet of loop lead-in cable I = 269 mH + 23 mH per 30 m of loop lead-in cable
6 ft x 40 ft (2, 4, 2 turns) [1.8 m x 12 m (2, 4, 2 turns)]	I = 349 mH + 23 mH per 100 feet of loop lead-in cable I = 349 mH + 23 mH per 30 m of loop lead-in cable
6 ft x 50 ft (2, 4, 2 turns) [1.8 rn x 15 m (2, 4, 2, turns)]	I = 429 mH + 23 mH per 100 feet of loop lead-in cable I = 429 mH + 23 mH per 30 m of loop lead-in cable
6 ft x 60 ft (2, **4, 2** turns) [1.8 m x 18 m (2, **4, 2,** turns)]	I = 509 mH + 23 mH per 100 feet of loop lead-in cable I = 509 mH + 23 mH per 30 m of loop lead-in cable
6 ft x 70 ft (2, 4, 2 turns) [1.8 m x 21 m (2, 4, 2, turns)]	I = 589 mH + 23 mH per 100 feet of loop lead-in cable I = 589 mH + 23 mH per 30 rn of loop lead-in cable

3. Leakage Resistance to Ground

   The resistance to ground shall be 5 Mohm or more.

4. Loop Resistance

   The resistance reading on an ohmmeter is approximately within ten percent (10%) of the calculated value:

- Acceptable Resistance@ (de@ 68 °F [20°C]):ohms(μ)
- No. 18 AWG wire: R = 29.4μ/mile (or) R = 5.5 x 10^{-3}μ/ft. Approximately 5.5 ohms per 1,000 feet of No. 18 AWG wire)[R = 18.3μ/km (or) R=18.3 x 10^{3}μ/m]
- No. 14 AWG wire: R = 13.32μ/mile (or) R = 2.523 x 10^{-3}μ/ft. Approximately 2.52 ohms per 1,000 feet of No. 14 AWG wire)[R = 8.3μ/km (or) R=8.3 x 10^{-3}μ/m]
- No. 12 AWG wire: R = 5.2μ/mile (or) R = 9.85 x 10^{4} μ/ft. Approximately 0.98 ohms per 1,000 feet of No. 12 AWG wire [R = 3.24μ/km (or) R = 3.24 x 10^{-3}μ/m]

5. Loop Q

   Q at 50 kHz is greater than 5.

   Report to the Engineer an out-of-range reading on any of the above tests. If a test is found unacceptable, remove the loop, install new wire, and repeat the test procedure.

   Include in the test results:

   - Type and model number of the equipment used (must be ohmmeter having a high resistance scale of R x 10 KW or greater)
   - The last calibration date of the equipment and the scale used

   Check the loop using an impedance tester to determine the natural operating frequency and impedance. Ensure that the completed units detect all motor vehicles. If the loop detection system does not meet the above test requirements, payment will not be made for work on the signal installation until corrections are completed.

Table 647-10 Loop Installation Data Sheet	
Conditions	
Project Number:	
Date:	
Contractor:	
Weather:	
Temperature:	
Pavement Condition - Wet ( ) or Dry ( )	
ft "	
City or County:	Phase:
Intersection Name or Number:	Function:
Route Number(s) or Name (s):	Lane Location:
Installation or Plan Sheet Number:	No. of Turns:
Size and Type of Loop:	Downstream/Upstream: Down ( ) Up ( )
Distance from Stop Bar:	Distance E.O.P/Curt> to Lead-in:
Distance Lead-in Cable:	
Material	
Loop Wire Color/Insulation Type/Gauge:	
Loop Lead-In Wire Color/Insulation Type/Gauge:	
Splice Point:	
Conduit Length from Curt>/E.O.P. to Splice Point:	
Conduit Length from Splice Point to Cabinet:	
Sealant Type and Part Number.	
Sealant Manufacturer and Lot No.:	
Interconnect Wire Type and Length:	
Loop Te	
1. Induced Voltage _ 2. Inductance _ microhenries 3. Leakage Resistance to Ground_ megohoms 4. Loop Resistance_ ohms 5. Loop Q (Quality) -- Q	
Comments	
Inspector's Name, and Title	

B. Field Tests

In addition to performing tests during installation and before turning on the equipment, perform the following tests on traffic signal circuits in the presence of the Engineer:

- Test each circuit for continuity

Test each circuit for grounds. If a test fails, repair the circuit immediately. New signals shall operate in the flash mode for three (3) days prior to beginning stop-and-go operation unless otherwise directed by the Traffic Engineer.

For Ramp Metering:

The Contractor shall submit to and obtain approval from the Engineer for Ramp Metering testing procedures for each specific Ramp Meter location. The testing procedure shall demonstrate that all components: hardware, cable, and connections furnished and installed by the Contractor operates correctly and that all functions are in conformance with the specifications.

At a minimum, the Contractor shall demonstrate to the Engineer:

- The IVDS and loop detectors at each location are functioning properly with expected accuracy as specified. IVDS burn-in period shall only be in conjunction with the Ramp Meter signal burn-in period of 30 days.
- The Ramp Meter signals function properly at all stages, including non-metering, startup, metering, and shutdown.
- In multi-lane configurations, the Ramp Meter can operate a simultaneous release of vehicles from aU lanes and as well as an alternating or staggered release of vehicles from the two (or three) lanes.•
- Queue detectors are functioning as specified, including both queue detection and queue override.
- The Ramp Meter functions properly for both local traffic responsive and time of day operations.
- The advance warning sign can be clearly seen and can be activated and deactivated properly.
- The Ramp Meter can communicate properly with the hub/TMC.
- The traffic enforcement heads are operating as per the Plans and can be seen by enforcement personnel.

The Contractor shall coordinate closely with Engineer for conducting Ramp Meter field operational tests. Note: Pretest should be performed prior to calling the Engineer for formal field tests inspection. Pretest shall be defined as conducting all field tests in accordance with the Ramp Metering field testing procedures submitted and approved. Results of pretests shall be recorded and submitted to the Engineer. The Engineer may require the Contractor to address particular items noted in the pretest before beginning the actual field tests.

Operational test shall not begin until the field tests are accepted by the engineer-that will be performed during the Engineer's inspection. Begin operational tests after the Engineer is satisfied that all work has been completed. After the Ramp Meter has been placed in operation, the Contractor, in coordination with the system integrator, shall demonstrate that all equipment furnished and installed by the Contractor operates with all software and firmware as specified.

After successful completion of the test procedure, each Ramp Meter assembly shall go through a bum-in period for 30 consecutive days of normal Ramp Metering operations. During the burn-in period, the Contractor shall ensure that all Contractor-supplied equipment operates without failures of any type. If any equipment component malfunctions or fails to provide the specified functionality during the 30-day burn-in period, the Contractor shall replace or repair the defective equipment within 48 hours of notification by the Engineer.

After the malfunctioning component(s) have been repaired or replaced to the satisfaction of the Engineer, the Contractor shall begin a new 30-day burn-in period. The new 30-day bum-in period shall apply only to equipment components supplied by the Contractor. In the event of a failure or malfunctioning of equipment furnished by others which prevents the 30-day bum-in test from continuing, the Engineer will suspend the bum-in test and resume when the other equipment failures are corrected.

C. Operational Tests and Equipment Activation

After the equipment is installed and the field tests are completed successfully the Contractor shall request an initial equipment inspection. The Engineer shall notify in writing the District Signal Engineer a minimum of 14 working days prior to the inspection. The District Signal Engineer shall provide an in depth inspection and provide a written punch list of items for the Contractor to correct. Within fourteen days of the notification the Contractor shall correct the items noted.

Prior to activating new equipment and before removal of any existing intersection control or equipment, test and ensure any communications equipment is functional.

In the event that programming of the controller application is not a pay item for the contract the Engineer will notify the District Signal Engineer a minimum of 14 working days prior to activating the equipment.

Prior to activating equipment all Inductance loop, video detection equipment and detection zones shall be functional and operational.

When defects are resolved, the District Signal Engineer will begin the Contractor's operational test period to demonstrate that every part of the system functions as specified. The operational test shall be concurrent for the entire project.

1. The operational test for the traffic signal and Ramp Metering projects shall be at least thirty (30) days of continuous, satisfactory operation.
2. If a component or system fails or shows unsatisfactory performance, the condition must be corrected and the test repeated until thirty (30) days of continuous satisfactory operation is obtained.
3. The District Traffic Engineer will send the Engineer and Construction Office a letter showing the start, termination, suspension, or successful completion of the operational test period.
4. The Contractor shall obtain written acceptance of the signal installation from the District Traffic Operations Engineer before Final Acceptance.

   Costs incurred during operational tests, including power consumption, shall be at the Contractor's expense and included in the price bid for Contract Items.

647.3.07 Contractor Warranty and Maintenance

A. Traffic Signal Equipment Maintenance

See Section 150.

If a signal that is the responsibility of the contractor is not functioning properly:

1. Non-Emergency

   Commence work on this signal within three (3) days of the written notice from the Engineer. Failure to respond shall result in a per calendar day charged against monies due or that may become due until the maintenance work is started. See Section 108.

   The Contractor shall be responsible for all materials, equipment and expertise necessary to correct signal malfunction or repair.

   The Department or local municipality will not be held responsible or liable for any alleged damage to the signal or as a result of the signal malfunction due to problems that may occur after the Department or local municipality forces make repairs.

   Upon Notice to Proceed, The Contractor shall check and make any needed adjustments to time clocks on a monthly basis. No additional payment shall be made for this requirement.

2. Emergency

If the Engineer determines that the signal malfunction or failure is an operational hazard, the Contractor is to take corrective action within three (3) hours of the first attempt of notification. Response shall be considered only when qualified personnel and equipment are provided.

Failure to respond within three (3) hours will result in a non-refundable deduction of money of$1,000.00 with an additional charge of$500.00 per hour after the first three (3) hours until qualified personnel and equipment arrives on site and begins corrective action.

In addition, the cost of labor and material will be charged by the Department if the Department takes corrective action using its own forces or local municipality forces.

Total charges will not exceed $5,000.00 (per emergency call) in addition to the material cost and labor incurred to make repairs by the Department or local municipality forces responding to the malfunction.

The Department will not be held responsible or liable for any alleged damage to the signal or as a result of the signal malfunction due to problems that may occur after Department or local municipality forces make emergency repairs.

The Contractor shall be responsible for all materials and equipment necessary to correct signal malfunction or repair.

Final Acceptance will not be given until payment for such work is received.

B. *Warranties*

Provide manufacturer's warranties or guarantees on electrical, electronic, or mechanical equipment furnished, except state-supplied equipment.

Ensure that warranties and/or guarantees are consistent with those provided as customary trade and industry standard practices; or as otherwise specified in the Plans, Standard Specifications, or Special Provisions.

Upon Final Acceptance, transfer the manufacturer and Contractor warranties or guarantees to the Engineer. Ensure that warranties are continuous and state that they are subject to transfer.

Acceptance or approval of the Work does not waiver warranties or guarantees where required by the Specifications. Final Acceptance will not be granted until all warranties and guarantees are received.

C. *Guarantees*

Repair and/or replace all equipment and material supplied under these Contract Documents which has been determined by the Engineer to not meet Specifications.

The Engineer reserves the sole right to determine suitability or unsuitability of the supplied equipment and material. The Contractor shall bear the total cost of delivery and transportation related to the repair and replacement of equipment and material throughout the duration of the Contract unless otherwise approved by the Engineer.

Transfer to the Engineer any warranties and guarantees remaining on all items after Final Acceptance. Perform transfer at 12:01 AM of the day following Final Acceptance.

647.4 Measurement

647.4.01 General

Traffic signal items complete, in place, and accepted of the kind, size, and type specified are measured as follows:

A. Traffic Signal Installation

Signal installation will be paid for by lump sum, including furnishing labor, materials, tools, equipment, and incidentals required to complete the work unless otherwise specified in this Subsection.

B. Communications Wire, Fiber Optic Cable

The number of feet (meters) of communications cable, wire or fiber optic cable is the actual number of linear feet (meters) of the size installed and accepted. Communications cable shall be paid for under Section 935.

B. Strain Poles, Traffic Signs

Highway signs are measured and paid for under Section 636. Strain poles are measured and paid for under Section 639.

C. Type 4, 4S, 5, 5S, 6 and 7 Pull Boxes

The number of pull boxes will be the actual number of pull boxes installed and accepted.

D. Loop Detector - Maintenance Milling and Resurfacing Projects

The number of loop detectors will be the actual number of loop detectors installed as specified in the Plans or as directed by the Engineer and accepted. Loop detector lead-in cable will not be measured separately for payment but will be included in the price submitted for Loop Detectors.

647.4.02 Limits

General Provisions 101 through 150.

647.5 Payment

647.5.01 General

The lump price bid for Traffic Signal and/or Ramp Meter Installation covers all Items of work in this Specification including furnishing labor, materials, tools, equipment, and incidentals required to complete the work.

Costs for installation, operation, maintenance, and removal of the traffic signal equipment are included under this Item.

Include payment for removal; disposal of existing pavement, shoulder surface, base and sub-grade; and restoration to original condition in the Contract Price for the items to which they pertain. They will not be paid for separately.

Furnishing, installing, and removing sheeting, bracing, and supports will not be paid for separately, but is included in the Contract Prices for other items.

No additional payment will be made for testing and storing State-supplied or Contractor-furnished traffic signal equipment. No payment will be made for individual items unless a pay item is included in the Plans for the specific item.

Type 4, 4S, 5, 5S, 6, and 7 pull boxes will be paid for per each. Loop Detector will be paid for per each. Payment will be made under:

Item No. 647	Traffic signal installation no-	Per lump sum
Item No. 647	Pull Box PB4	Per each
Item No. 647	Pull Box PB4S	Per each
Item No. 647	Pull Box PBS	Per each
Item No. 647	Pull Box PB5S	Per each
Item No. 647	Pull Box PB6	Per each
Item No. 647	Pull Box PB7	Per each
Item No. 647	Loop Detector	Per each

Payment for various elements of traffic signals will be as shown on the Plans.

A. Partial Payment

Prior to commencement of the work, the Contractor shall initiate a partial payment process for the lump sum traffic signal items by submitting a written payment schedule of the installation items for consideration and approval by the

Engineer. The submittal should consider staged work. Invoices shall be provided upon the Engineer's request if necessary to substantiate the schedule of values. The Engineer's determination of any progress amount paid shall be final. In the event a submittal is not provided, the schedule below will be utilized.

Underground (loops, pull boxes (if not paid for separately}, and conduits)	20%
Overhead (span, heads, push buttons)	30%
Cabinet, contents, and base (cabinet must be fully wired to signal and be ready for operation including written final acceptance from the District Traffic Operations Engineer)	50%

B. Additional Items

Payment Items related to Section 647 are described in the following sections:

Strain Poles	Section 639
Highway Lighting	Section 680
Lighting Standards and Luminaries	Section 681
Electrical Wire, Cable, and Conduit*	Section 682
Grassing	Section 700
Timber Poles	Section 639 and Subsection 861.2.02
Sign Blanks	Section 912
Reflectorization Materials	Section 913
Traffic Signal Equipment Ramp Metering Equip.	Section 925
• Payment for conduit installation shall be as described in Section 682 unless conduit installation is performed as part of a traffic signal installation, in which case measurement and payment is a part of the complete traffic signal installation. Payment is Lump Sum, unless listed as a separate pay item.	

647.5.02 Adjustments

General Provisions 101 through 150.

Office of Traffic Operations

Section 687 - Traffic Signal Timing

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

PROJECT: *NI* A
DOUGLAS COUNTY
P.I. NO: 0012621

Section-687 Traffic Signal Timing

Add the following:

687.1 General Description

This work consists of developing and implementing, by a prequalified Contractor, a traffic signal operating plan designed to provide a safe and efficient operation of the Intersections included in this Special Provision. This work includes data collection, system timing plan development, implementation and adjustment, and conducting before and after studies. Traffic Responsive development and implementation may also be included as part of the work effort.

Contractor's attention is directed to the following information:

> For cost estimating purposes it is to be assumed that as a minimum, four sets of one-hour turning movement counts will be conducted at each intersection identified in Table 687-1 and that a minimum of six signal timing plans per control section will be developed for the intersections identified in Table 687-1. Additionally, the development of traffic responsive operation is to be included as part of this project.

687.1.01 Definitions

Use the following definitions for purposes of this section:

- A prequalified Contractor is defined as one who is qualified to perform work in Area Class Codes 3.06 and 3.09 in the Department's Consultant Prequalification regulations.
- A signal timing plan is defined as a unique combination of cycle length, splits and offsets for all intersections within a system or control section.
- A control section is defined as any portion of a traffic control system, which can be controlled by a single set of timing parameters and in which all intersections change timing patterns at the same time.
- Engineer is defmed as the District Traffic Engineer for the District in which the intersections are located.
- Approved or approval is defined as written approval by the District Traffic Engineer or his designated representative.
- Intersections in this Special Provision are defined as all the intersections listed in Table 687-l.
- A directional count is defined as a measurement of the total traffic volume traveling a roadway in a single direction.

687.1.02 Related References

A. Standard Specifications

Section 108 - Prosecution and Progress
Section 647 - Traffic Signal Installation

687.1.03 Submittals

Make the following eight (8) submittals to the Engineer for review and approval in the sequence and order listed. Approval of each submittal must be obtained before conducting any associated work.

1. Methodology Report
2. Inventory/Data Collection/Timing Plan Assessment Report
3. Turning movement count data
4. Preliminary timing plans
5. Traffic Responsive volume and occupancy signature (if Traffic Responsive is required)
6. Traffic Responsive test results (if Traffic Responsive is required)
7. Final Timing Plans Report
8. Before-after study

Submit all traffic signal timing data to the Engineer in a form utilizing the manufacturer's software. Assure that all work submitted is neat and legible.

687.2 Materials

687.2.01 Software

The Department will not provide resources to fulfill any Contractor obligations under this Special Provision. The Department will not furnish any software or equipment for the development and implementation of timing plans. The Department's own signal system software may only be used on-site. Obtain all necessary licensed software, equipment and materials to support this work effort. All software used for this project must be registered to the Contractor and must be 100 percent compatible with the software utilized by the Department. Supply proof of registration.

687.3 Construction Requirements

687.3.01 Field Review

Visit all intersections listed in Table 687-1 during the morning, afternoon and evening peak traffic periods in order to make qualitative assessments of intersection operation. Make note of queue length, delays, conflicts or any other operational characteristics that should be considered in evaluating and developing coordinated traffic signal timing plans. Identify the locations for directional counts during the site visit. Make note of the surrounding land use and traffic generators to gain insight on the daily traffic patterns of motorists in the area.

Upon completion of the field observations, contact the Engineer to determine if any special local conditions exist that could affect the timing plan development process.

687.3.02 Methodology Report

Develop a traffic signal Methodology Report containing the following data:

1. Field data collection methodology
2. Proposed locations for directional counts
3. Methodology for calculating pedestrian and vehicular clearance intervals
4. Signal analysis software to be used
5. Software registration numbers
6. Methodology for conducting before/after studies
7. Time Schedule for the signal timing development and implementation

Submit two (2) copies of the Methodology Report to the Engineer for review and approval. Obtain written approval of the Methodology Report prior to tJ1e collection of data or development of initial system timing plans. Define in the Methodology Report the proposed directional count locations as well as the intended methodology for collecting data and developing system timing as well as the goals for operating the system.

Include in tbe Methodology Report the steps needed to accomplish these goals and provide supporting data and documentation. Include all proposed data collection forms and summary/presentation formats as illustrated in the attached exhibits to be utilized in this project. Finally, submit for approval a time schedule for completing the tasks covered under this Special Provision.

Define all software programs proposed to be used for timing plan development, database preparation and the before and after studies. Do not use the Department resources to fulfill any of the Contractor's obligations under this Special Provision.

Use a Department approved computer signal timing analysis program to develop the signal timing plans. All software programs must be I00 percent compatible with the programs that the Department is currently using. Program version numbers may be different as long as the data can be saved into the version utilized by the Department. Obtain approval from the Department of all computer programs to be used for this project. Provide the Department with program registration numbers.

687.3.03 Data Collection

Prepare an inventory of the conditions at each intersection and collect all data required to effectively devise a signal timing plan for the Intersections. Make directional counts and obtain approval from the Engineer prior to scheduling the turning movement counts. Utilize data obtained from the directional counts to determine the peak lime periods in which to conduct the turning movement counts.

687.3.04 Intersection Inventory

Inventory the intersection configuration, signing and marking, marked and unmarked crosswalk distances, signal phasing and signal timing at all intersections as well as any other data required to complete the system timing plans. The minimum limits of this inventory include the vehicle detection locations. The purpose of the inventory is for the preparation of signal timing plans, signal system database and system maps.

687.3.05 Directional Counts

After the proposed directional counts locations have been approved, conduct the directional counts. Unless otherwise specified in Table 687-1, determine the location of directional and turning movement counts required for the development of the signal timing plans.

In general, directional counts should be taken along major arterials and may be taken on major side streets if needed. Take directional counts for seven (7) consecutive days, twenty-four (24) hours per day. Use an automatic traffic counter that produces a written record of the count and time of day.

Summarize the directional count data on a volume summary form. From the count data, develop a tabular and graphic presentation of directional traffic volumes showing 15-minute interval volumes and hourly interval volumes over the seven consecutive day period.

Use the directional counts to determine the peak periods and the time periods for conducting the turning movement counts. From this information, identify the number of timing plans required to satisfy the identified peak periods.

687.3.06 Inventory/Data Collection/Timing Plan Assessment Report

Develop an Inventory/Data Collection/Timing Plan Assessment Report consisting of the following data:

I. Inventory forms
   2. Directional count data in graphical and tabular format
   3. Proposed time periods for turning movement counts
   4. Proposed number of timing plans

Submit 2 (two) copies of the Inventory/Data Collection/riming Plan Assessment Report, consisting of the completed inventory automatic traffic counter printout, directional volume summaries along with the proposed peak periods, proposed turning movement count data collection activities, the proposed number of timing plans, recommendations for traffic responsive operation and any revisions to the project schedule to the Engineer for review and approval. Do not schedule turning movement count data collection until written approval is received from the Engineer.

687.3.07 Turning Movement Counts

Upon approval by the Engineer of the Inventory/Data Collection/riming Plan Assessment Report, collect and summarize peak hour turning movement counts in fifteen (15) minute increments for one-hour intervals. Differentiate in the turning movement counts between trucks and passenger vehicles, and include pedestrian counts. Summarize the count data on turning movement count forms.

Submit a copy of the turning movement counts in the format defined in the exhibits to the Engineer for review and approval. Receive written approval prior to the development of the initial signal timing plans.

687.3.08 Initial Timing Plan Development

After receiving written approval of the Methodology Report, Inventory/Data Collection/Timing Plan Assessment Report and the turning movement counts from the Engineer, develop initial system timing plans based on the goals of the Methodology Report. Develop the number of signal timing plans that were determined from the Inventory/Data Collection/Timing Plan Assessment Report approved by the Engineer. Include in each timing plan controller, master (if present) and system settings necessary to allow coordinated operation of the Intersections.

687.3.08.01 Timing Plan Development Requirements

Determine values for all controller parameters (local and coordination) and prepare the system database for the Intersections listed in Table 687-1. Include the entire database for the local and master controllers, as well as the microcomputer-resident system database including local, master and system wide graphics.

Submit a report consisting of the recommended time-of-day, day-of-week time periods for each plan and the proposed signal timing plans and databases for each plan to the Engineer for review and approval.

Develop and submit for approval by the Engineer procedures and a schedule for implementing and fine-tuning the timing plans as well as the development and testing of traffic responsive operation.

Submit the signal timing development computer program input and output files for the proposed signal timing plans. Explain in the initial timing plan report the analysis and conclusions regarding the development of the signal timing plans.

687.3.09 Timing Plan Implementation

Upon receipt of written approval of the Initial Timing Plan Report by the Engineer, implement the new signal and system timing/ graphics data for the entire system. Notify the Engineer five (5) working days in advance of the implementation of the system timing plans. Do not schedule implementation on peak traffic days or peak travel times without prior approval from the Engineer.

Enter only approved data into the equipment at each location. If an intersection is ready for turn-on before the initial timing plans are developed, the existing timings (if suitable) or other approved temporary timings may be installed until the initial timing plans are developed. Enter the new timing data at each controller, through the master or from the workstation. If entering the timing data from the workstation, have a person experienced with controller operation on-site in the field during the implementation process. Obtain approval of the method of data entry from the Engineer prior to the entry of any data. Develop and implement all settings required for the system database.

687.3.10 Fine-Tuning

Review the timing plans and adjust this data as required by actual field conditions or as directed by the Engineer. Conduct this evaluation in three (3) stages:

1. Conduct initial field verification within twenty-four (24) hours of operating plan implementation. Review the operation of the equipment in the field to verify that the correct cycle lengths, splits and offsets are being implemented by the system and that no major operating problems occur.

2. In the second stage, include a detailed on-street review of the operation of all timing plans. This review will determine where adjustments are required subject to excessive queues or vehicle delays. Upon determining these locations, make the necessary adjustments.

3. The third stage of the fine-tuning consists of an on-street review of the timing plans by the Contractor, the Department and the Local Agency, if applicable. Request in writing to proceed with this stage and submit documentation of the activities in completing stages one and two before beginning the third stage. It is not the intent of stage three for the Department and the Local Agency to accomplish stages one and two for the Contractor. Stage three is reserved for the Department and Local Agency to review and approve, reject or request changes to the final timings as installed by the Contractor. As directed by the Department, the third stage could involve rejection of the timing plans, at which point the Contractor must repeat stages one and two and then request a follow-up stage three review with the Department As directed by the Department, the third stage could also require the Contractor to re-run the timing plan development program at lower or higher restricted ranges or

at specific cycle lengths (as needed to achieve the desired progression and minimize delay). If so directed, implement the necessary adjustments and repeat the detailed on-street review. Notify the Department at least five working days in advance of all on-street reviews. The Department reserves the right to require that adjustments be made due to conditions observed in the field.

Make any adjustments to the timings requested by the Department until the Final Timing Plan Report is submitted for review. Anticipate implementing all plans into the system and fine tuning all plans during the time-of-day/day-of-week, (and season of year, if applicable) that the plans are scheduled to be in effect. Present to the Department for approval any contract scheduling conflicts that may interfere with the proper scheduling of the timing plan implementation along with proposed resolutions.

Complete the fine tuning prior to the beginning of the operational test period as specified in Section 647.3.06.C of the Traffic Signal Installation Supplemental Specification.

687.3.11 Traffic Responsive Plan Development

For each intersection approach for which traffic responsive thresholds are to be developed, collect 15-minute volume and occupancy levels for a minimum of one week. Utilizing the system sensor data collected and field observations, graphically evaluate volume and occupancy levels for running the system in the traffic responsive mode for each control section where timing plans have been developed and where system detectors exist. Based on the traffic responsive algorithm utilized by the Department's traffic signal system software, develop a set of volume and occupancy signatures for selection of the most appropriate timing plan from the plans developed as defined above.

Document the procedures and methods used for establishment of volume and occupancy thresholds and submit a set of volume and occupancy signatures to the Engineer for approval along with proposed time periods for operating in a traffic responsive mode by control section. Develop a procedure to be approved by the Engineer that tests the validity of the volume and occupancy data being received by the designated system detectors.

Test the traffic responsive operation for each control section utilizing the volume and occupancy signatures developed. First develop a procedure whereby traffic responsive operation is placed in a background mode of operation. Demonstrate with this operational mode that volume and occupancy detector information is being collected and utilized in conjunction with an algorithm to select an appropriate timing plan for implementation. Selection of any timing plan in lieu of the most appropriate will not be accepted. Following the background mode test, program traffic responsive operation into the time-of-day/day-of-week scheduler and observed in the field. Conduct field verification and on-street reviews within twenty-four (24) hours of traffic responsive field plan implementation. Notify the Engineer at least three (3) working days in advance of traffic responsive field plan implementation. The Department reserves the right to direct the Contractor to make adjustments based on conditions viewed in the field.

Develop procedures for testing and submit them to the Engineer for approval. Include the documentation of the traffic responsive simulation test results, which will provide the means for determining success or failure.

687.3.12 Final Timing Plans

Include in the final timing plans parameters for each intersection and control section, which timing plans are available for manual and traffic responsive selection, and the values of the traffic flow parameters used in the traffic responsive selection program. Develop time-of-Day/day-of-week schedule information, system database and graphics. Implement the system database into the District's resident microcomputer system, which contains the traffic signal system software.

After all necessary adjustments are made to the timing and operating data and system graphics, furnish two (2) signed copies in a notebook of the final local and system timing plans to the Engineer. Provide hard copies of the local and system timings on the signal system software manufacturer's forms. Use the back-up routine provided in the Department's signal system software to make a back-up of the system database. Supply this back-up to the Engineer on a 3.5" diskette or a CD-ROM.

687.3.13 Effectiveness Study

After the fine tuning period, prepare and submit a cost/benefit analysis in a report format for review and approval by the Engineer. This analysis must include at a minimum:

- Emissions (NOx, CO, VOC)
- Total travel time (Before and After)

- Stops/Delays
- Fuel consumption
- Level of service
- Measure of efficiency

687.3.14 TRAINING

687.3.14.01 Overview

Provide instructors and all material for training Department and Local Agency personnel in the development and implementation of timing plans specifically related to this project. Submit instructors' resumes, training course outlines and samples of all training aids and manuals to the Engineer for approval at least 45 days prior to the proposed scheduled start of the training session. Obtain written approval of this material prior to the final scheduling of the training session or the final production of training materials. Do not schedule the training session until after the fine tuning has been completed.

Develop and supply all necessary manuals, displays, class notes, visual aids, and/or other instructional materials as required to provide the training programs described herein. Bind the manuals individually in loose-leaf binders and provide up to 12 copies. Check with the Engineer to determine the final number of required manuals.

Unless otherwise specified, conduct the training session at the District office. Provide up to 16 hours of training over two days. The dates and times of the training will be approved by the Engineer. Attendance will range from three to twelve persons. The Engineer will determine the personnel who will attend each training session.

687.3.14.02 Content

Provide a course to instruct the procuring and maintaining agency in the procedures used in the development and implementation of timing plans for this project.

Items to be covered are:

- Relationship of signal timing program used to other programs available (Synchro, Passer, Transyt)
- Data required for input into the signal timing program. What the signal timing program does with the data. What are the most critical data items.
- Limitations of the program.
- Timing plan methodology for this project
- Explanation of timing plan development process as related to the signal timing program. Terminology employed, data required, reports and graphics available for evaluation definition of MOE's, interpretation of results.
- Explanation of timing plan development process as related to this project. Provide process and reasons for the evaluation and selection of cycle length, splits and offsets. Explain why it is an iterative process.
- Conversion of the timing plan output from the programs to the input utilized by the system and controller database.
- Installation of the timing plans for manual mode use and time-of-day use.
- What is fine tuning? What to look for when doing fine tuning. How to transfer the conclusions from fine tuning into database modifications.
- Development of parameters to be used in the database to implement traffic responsive operation based on the data collected from the field.
- What type of data to collect in the field for traffic responsive operation.
- How to fine tune traffic responsive operation.
- How to conduct an effectiveness study.

687.4 Measurement

687.4.01 Construction Contracts

Traffic signal timing as specified complete and accepted is measured for payment per Lump Sum.

687.4.02 Consultant Services Contracts

Work performed under this specification will be measured based upon hours expended and expenses incurred subject to the labor and expenses defined in the contract and/or task order.

Section 687 -Traffic Signal Timing

687.5 Payment

687.5.01 Construction Contracts

Traffic signal timing complete and accepted is measured for payment per Lump Sum. Price and payment is full compensation for ail materials, labor, tools, equipment, supplies, testing and incidentals to complete the item ofwork

Payment will be made under:

Item No. 687	Traffic Signal Timing	per Lump Sum

687.5.02 Consultant Services Contracts

For Traffic Signal Timing that is a part of a consultant services contract, work performed under this specification will be paid for on a cost plus, services rendered basis up to the maximum amount specified in the contract and/or task order.

TABLE 687-1

INTERSECTIONS AND COUNTS

INTERSECTIONS

SR 6/Thornton Road at CR 635/Maxham Road
SR 6/ Thornton Road at Tree Terrace Parkway

Collect Turning Movement Counts at all locations during the days and hours listed below or at the locations and time periods determined by the Contractor utilizing directional counts and approved by the Engineer.

Sunday - Saturday 24 hours

Section 687 - Traffic Signal Timing

Exhibit A
Data Collection Format Example

EXHIBIT A.1 - SCOPE OF WORK

Collect and process data at Traffic Signal Systems throughout the State. EXHIBIT A.I. I lists the Traffic Signal Systems and intersections included in this agreement. Include in the collected data:

- Inventory of intersection configuration, signing and marking, marked and unmarked crosswalk distances. The minimum limits of this inventory are the vehicle detector zones (presence and passage). Prepare system and intersection drawings containing all required (see Section for Required Intersection Configuration Data) configuration data. Examples of the system and intersection configuration data drawings are included in EXHIBITS A.2, A.3 and A.3.1.

- Directional and Turning Movement Counts -A directional count is defined as a measurement of the total traffic volume traveling a roadway in a single direction. Directional counts are taken along major arterials and may be taken on major side streets if needed. Directional counts should be taken for 7 consecutive days. Use an automatic traffic counter, which produces a written record of the count and time of day. Collect directional counts in fifteen (I5) minute intervals, for a twenty-four 24) hour period for seven (7) consecutive days. Summarize the directional count data on a volume summary form and on a chart with volume and time references and axes. An example of the required directional count data format is included in EXHIBIT A.4.

  Based on the volumes obtained from the directional counts, collect and summarize a minimum of AM, Mid Day and PM peak hour turning movement counts in fifteen (15) minute increments for one hour intervals. Differentiate in the turning movement counts between trucks and passenger vehicles, and include pedestrian counts. Summarize the count data on turning movement count forms. An example of the required tum movement count data format is included in EXHIBIT A.5.

Submit all data in the specified printed format on S½"x 11" paper and in the specified electronic format on 3.5" diskettes or CD-ROM.

1. Required Intersection Configuration Data
   Prepare a drawing of the intersection, utilizing the computer aided drawing program MicroStation, on two 8½" x 11" graphic diagram sheets. Depict the geometric configuration of the system and each intersection. Include the following data:

   System Diagram (See Exhibit A.2)

   - General layout of the system (not to scale)
   - Distances between signals
   - North arrow orientation (preferably to top of page)

   Intersection Diagram Sheet I (See Exhibit A.3)

   - Lane configurations
   - Signal head location and configuration
   - Signing (including posted speed limit signs)
   - Pavement Markings
   - Location of controller cabinet
   - Location and configuration of vehicle detection zones
   - North arrow orientation (preferably to top of page)

Intersection Diagram Sheet 2 (See Exhibit A.3.1)

- Lane widths
- Left turn measures
- Turn bay storage lengths
- Pedestrian crossing distances
- Pulse detector measures
- Approach grades

Prepare drawings that are legible and easily read. Make every effort to reduce or eliminate unnecessary clutter on the drawings.

2. Electronic Data Format

Provide all traffic data in an electronic format such as MicroStation (DGN) or Adobe Acrobat (pdf).

Section 687 - Traffic Signal Timing

Data Collection Format Example

EXHIBIT A.1 - SYSTEM & INTERSECTION NAMES

SYSTEM# 1 District 7, **S.R. 5 (Bill Arp Road)**

Douglas County, Douglasville

S.R. 5@1-20 WB	S.R. 5@ 1-20 EB	S.R. 5 @Tonya Lane
S.R. 5 @ Douglas Blvd	S.R. 5 @ Arbor Station Pkwy	S.R. 5 @Wenona Street
S.R. 5@ Stewart Mill Rd.		Total 7 Intersections

SYSTEM # 2District 3, S.R. 109 (Central Business District)

Troup County, LaGrange

S.R. 109@ Main Street	S.R. 14@ Main Street	Haralson Street @ Ridley Ave
S.R. 109@ Bull Street	S.R. 14@ Bull Street	Haralson Street @ Church St.
S.R. 109@ S. Lewis Street	S.R. 14@ N. Lewis Street	Haralson St @ N. Lewis Street
S.R. 109@ S.R. 219	S.R. 14@ S.R. 219	Haralson Street @ S.R. 219
S.R. 109@ Morgan Street	S.R. 14 @ Morgan Street	Broom St. @ Main St.
Broom St. @ Bull St.	Main St. @ Byron Hurst St.	Total 17Intersections

SYSTEM # 3 District 2, Milledgeville (Central Business District)

Baldwin County, **Milledgeville**

S.R. 22 @Columbia Street	S.R. 49 @ Columbia Street	Wilkinson St. @ Greene St.
S.R. 22@ Clarke Street	S.R. 49@ Clarke Street	Wilkinson St. @ Franklin St.
S.R. 22 @Wilkinson Street	S.R. 49@Wilkinson Street	Wilkinson St. @ McIntosh St.
S.R. 22 @Wayne Street	S.R. 49 @Wayne Street	Wayne Street @ Green St.
S.R. 22@ Jefferson Street	S.R. 49 @ Jefferson Street	Wayne Street @ Franklin St.
S.R. 22 @ Elbert Street	Clarke Street @ Green Street	Wayne Street @ McIntosh St.
		Total 18 Intersections

SYSTEM # 4 District 6, S.R. 1Bypass

Polk County, Cedartown

S.R. 1 @ Jule Peek Street	S.R. 1 @ Girard Street	S.R. 1 @ Queen Street
S.R. 1 @S.R. 6	S.R. 1 @ Philpot Street	S.R. 1 @ West Avenue
S.R. I @ Canal Street		Total 7 Intersections

Data Collection Format Example

EXHIBIT A.1 - (CONT'D)

SYSTEM # 5 District 6\S.R. 2 Fort Oglethorpe

Catoosa County, **Fort Oglethorpe**

S.R. 1 @ McFar1and Gap
S.R. 1 @ Forrest Road
S.R. 1 @ S.R. 2
S.R. 2 @ Van Cleave Street
S.R. 1 @ Harker Road
S.R. 1 @ Gilbert Road
S.R. 1 @ S.R. 146
S.R. 1 @ Oak Street
S.R. 1 @ Lake View Drive
S.R. 2 @ Cross Street

Total 10 Intersections

SYSTEM # 6 District 2, S.R. 104\S.R. 232

Columbia County, Augusta

S.R. 104@ Davis Road
S.R. 104@ Columbia Blvd
Flowing Wells Rd @ Columbia Blvd
S.R. 104@ B. Jones Pkwy
S.R. 104@ Flowing Wells Rd
S.R. 232 @ Rose Lane
Old Evans @ Martinez Blvd

Total 7 Intersections

SYSTEM# 7Distrfct 7, S.R. 6 (Thornton Road)

Douglas County, **Douglasville**

S.R. 6@ 1-20 EB Ramp
S.R. 6@ Skyview Dr.
S.R. 6 @Westfor1< Court
S.R. 6@1-20 WB Ramp
S.R. 6@ Maxham Rd
S.R. 6@ Bankhead Hwy
S.R. 6@ Hospital Rd.
S.R. 6 @ Westfor1< Blvd_

Total 8 Intersections

The following table lists locations for collecting 24-hourn-Day count **data** for each system:

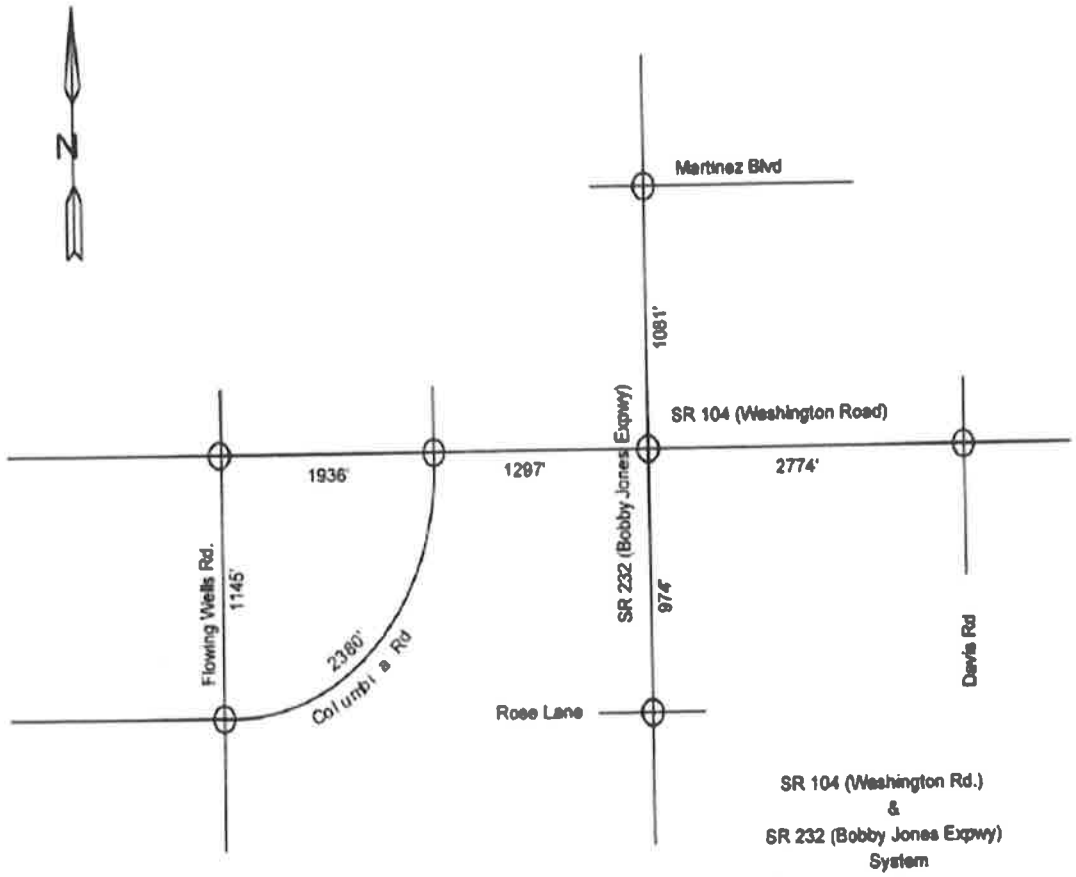
System	District and System Name	Intersection Name
1	District 7, S.R. 5 (Bill Arp Road)	S.R. 5 @Arbor Station Pkwy
2	District 3, S.R. 109 (Central Business District)	S.R. 109 @ Morgan Street
3	District 2, Milledgeville (Central Business District)	S.R. 49 @ Columbia Street
4	District 6, S.R. 1Bypass	S.R. 1 @ S.R. 6
5	District 6\S.R. 2 Fort Oglethorpe	S.R. 1 @ S.R. 2
6	District 2, S.R. 104\S.R. 232	S.R. 104 @ B. Jones Pkwy
7	District 7, S.R. 6(Thornton Road)	S.R. 6 @Skyview Dr.

Data Collection Format Example

Section 687 – Traffic Signal Timing

Data Collection Format Example

EXHIBIT A.2 – SYSTEM DIAGRAM

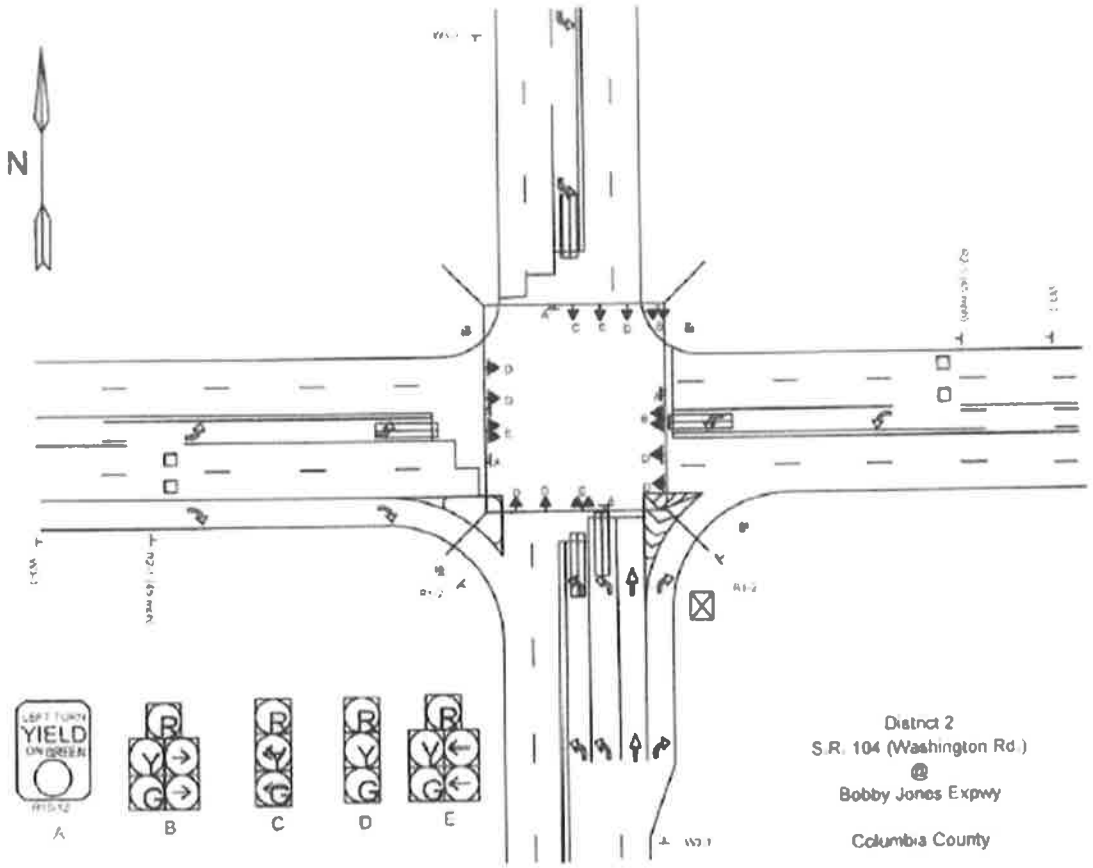


Section 687 – Traffic Signal Timing

Data Collection Format Example

EXHIBIT A.3 – INTERSECTION DIAGRAM

SHEET 1

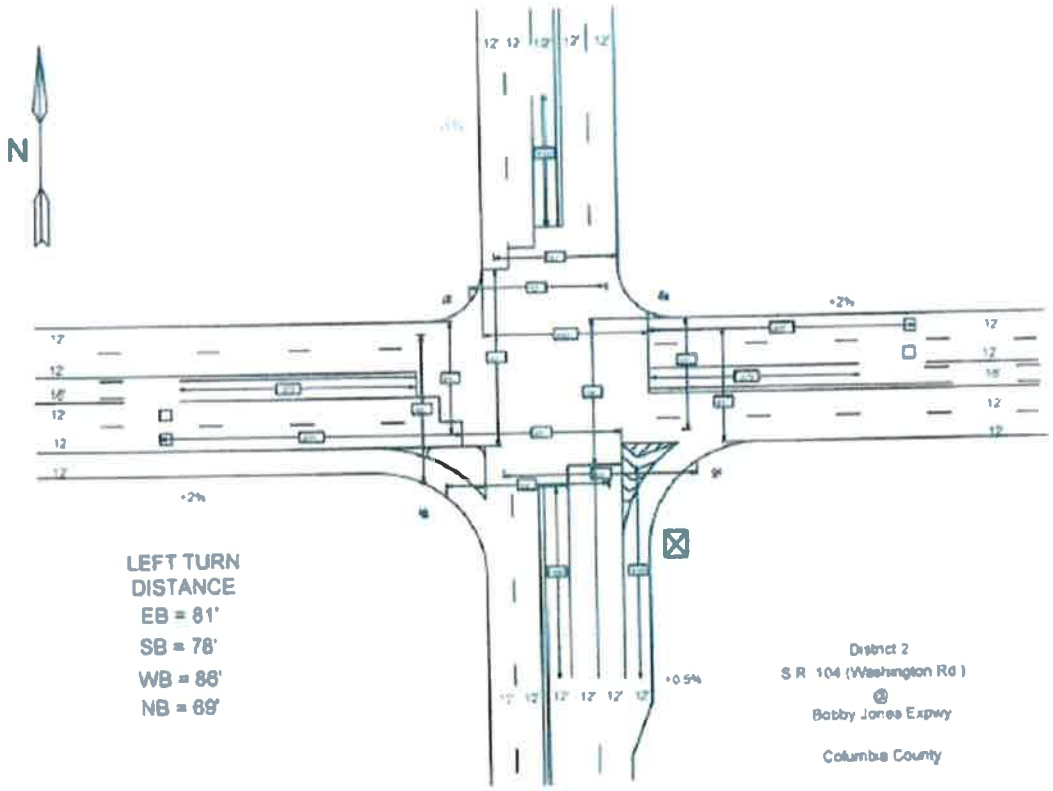


Section 687 – Traffic Signal Timing

Data Collection Format Example

EXHIBIT A.3.1 – INTERSECTION DIAGRAM

SHEET 2

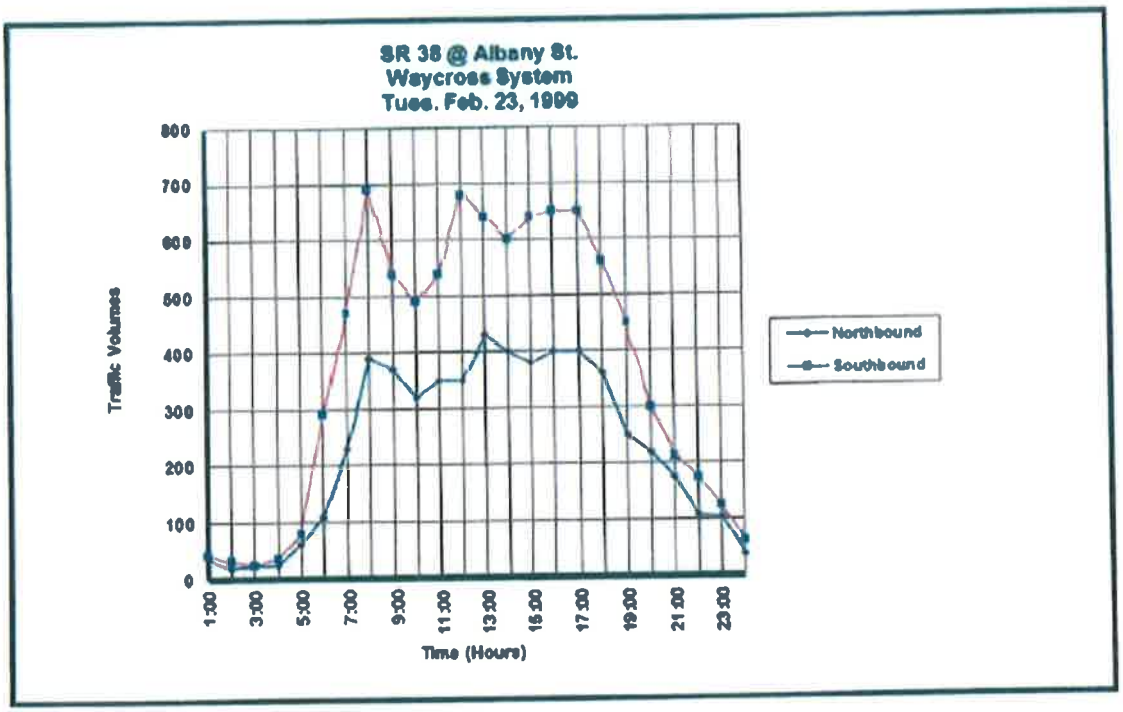


Data Collection Format Example

Section 687 – Traffic Signal Timing

Data Collection Format Example

EXHIBIT A.4 – 24-HOUR CHART



Section 687 – Traffic Signal Timing

Data Collection Format Example

EXHIBIT A.5 – Turn Movement Count Data CHART

Start Date : 11/20/2002
Page No : 1

Groups Printed: 1 - Cars, Buses, & Truck

	US 441 Northbound					US 441 Southbound					Old 441 North Eastbound					Westbound					
Start Time	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Left	Thr u	Rig ht	Ped s	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	1	122	0	0	123	0	111	35	0	146	9	0	1	0	10	0	0	0	0	0	279
07:15 AM	1	123	0	0	124	0	126	44	0	170	23	0	3	0	26	0	0	0	0	0	320
07:30 AM	2	136	0	0	138	0	142	48	0	190	25	0	4	0	29	0	0	0	0	0	357
07:45 AM	2	139	0	0	137	0	162	38	0	200	27	0	3	0	30	0	0	0	0	0	367
Total	6	520	0	0	522	0	541	165	1	706	84	0	11	0	95	0	0	0	0	0	1323
08:00 AM	1	112	0	0	113	0	137	31	0	168	26	0	2	0	28	0	0	0	0	0	309
08:15 AM	1	104	0	0	105	0	139	29	0	168	28	0	2	0	30	0	0	0	0	0	303
08:30 AM	0	113	0	0	113	0	118	35	0	153	22	0	5	0	27	0	0	0	0	0	293
08:45 AM	1	106	0	0	107	0	106	37	0	143	19	0	3	0	22	0	0	0	0	0	272
Total	3	435	0	0	438	0	518	134	0	652	93	0	12	0	105	0	0	0	0	0	1195
*** BREAK ***																					
11:00 AM	2	142	0	0	144	0	137	19	0	156	11	0	2	0	13	0	0	0	0	0	313
11:15 AM	3	125	0	0	128	0	153	33	0	186	18	0	3	0	21	0	0	0	0	0	335
11:30 AM	0	138	0	0	138	0	156	28	0	184	21	0	3	0	24	0	0	0	0	0	346
11:45 AM	0	127	0	0	127	0	165	24	0	189	16	0	5	0	21	0	0	0	0	0	337
Total	5	532	0	0	537	0	611	104	0	715	66	0	13	0	79	0	0	0	0	0	1331
12:00 PM	1	126	0	0	127	0	159	31	0	190	12	0	2	0	14	0	0	0	0	0	331
12:15 PM	0	125	0	0	125	0	145	15	0	160	19	0	0	0	19	0	0	0	0	0	304
12:30 PM	1	141	0	0	142	0	136	17	0	153	22	0	2	0	24	0	0	0	0	0	319
12:45 PM	3	151	0	0	154	0	148	21	0	169	15	0	4	0	19	0	0	0	0	0	342
Total	5	543	0	0	548	0	588	84	0	672	68	0	8	0	76	0	0	0	0	0	1296
*** BREAK ***																					
04:00 PM	0	167	0	0	167	0	184	33	0	217	23	0	1	0	24	0	0	0	0	0	408
04:15 PM	2	178	0	0	180	0	179	30	0	209	15	0	2	0	17	0	0	0	0	0	406
04:30 PM	1	196	0	0	197	0	187	39	0	226	15	0	2	0	17	0	0	0	0	0	440
04:45 PM	1	201	0	0	202	0	195	42	0	237	13	0	1	0	14	0	0	0	0	0	453
Total	4	742	0	0	746	0	745	144	0	889	66	0	6	0	72	0	0	0	0	0	1707
05:00 PM	3	213	0	0	216	0	200	38	0	238	16	0	1	0	17	0	0	0	0	0	471
05:15 PM	1	200	0	0	201	0	183	20	0	203	12	0	3	0	15	0	0	0	0	0	419
05:30 PM	0	206	0	0	206	0	173	18	0	191	11	0	1	0	12	0	0	0	0	0	409
05:45 PM	1	183	0	0	184	0	148	17	0	165	10	0	2	0	12	0	0	0	0	0	361
Total	5	802	0	0	807	0	704	93	0	797	49	0	7	0	56	0	0	0	0	0	1660
Grand Total	28	3570	0	0	3598	0	3707	724	0	4431	425	0	57	0	482	0	0	0	0	0	8514
Approch %	0.8	99.2	0.0	0.0		0.0	83.7	16.3	0.0		88.2	0.0	11.8	0.0		0.0	0.0	0.0	0.0		
Total %	0.3	41.9	0.0	0.0	42.3	0.0	43.5	8.5	0.0	52.0	5.0	0.0	0.7	0.0	5.7	0.0	0.0	0.0	0.0	0.0	