INVITATION TO BID

Construction of Ridgeview Middle School Sidewalk

PROJECT NO.
T-6000 Phase II

BID NUMBER
11-280

Pre-Bid Conference
Tuesday, September 28, 2010
10:00 a.m.
City of Sandy Springs
7840 Roswell Road Suite 500
Sandy Springs, Georgia 30350
Flying Pig Conference Room

Bid Due Date
Thursday, October 7, 2010
2:00 p.m.
Questions must be directed in writing to:
City of Sandy Springs, Buyer, Jasmine Bryant,
via e-mail to:
Jasmine.bryant@sandyspringsga.org

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE SPECIAL PROVISION MODIFYING SECTION 108 OF THE DOCUMENT (PROSECUTION AND PROGRESS) CONCERNING STATE LAW O.C.G.A. 43-14-1 ET. SEQ. RELATIVE TO CONTRACTOR LICENSING REQUIREMENTS.

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DEFINITIONS

SSPWD: Sandy Springs Public Works Department

GDOT: Georgia Department of Transportation

ENGINEER: The Sandy Springs Director of Public Works or a duly authorized representative.

ADA: Americans with Disabilities Act

EA: Each

GAL: Gallon

LF: Lineal Feet

LS: Lump Sum

SY: Square Yard

TN: Ton

MUTCD: *Manual on Uniform Traffic Control Devices*

OSHA: Occupational Safety and Health Administration

FHWA: Federal Highway Administration

AASHTO: American Association of State Highway and Transportation Officials

CONTRACT DOCUMENTS: Contract Agreement, General Conditions, Special Provisions, Technical Specifications, Drawings and Plans, Bidding Documents

CITY OF SANDY SPRINGS

Invitation to Bid # 11-280
Construction of Ridgeview Middle School Sidewalk
PROJECT NO. T-6000-Phase II

The City of Sandy Springs is accepting sealed bids from qualified firms, **meaning a qualified Contractor,** for the construction of Ridgeview Middle School Sidewalk for the Public Works Department. All work will be done in accordance with Georgia Department of Transportation's (GDOT) Standard Drawings, Standard Specifications, and Pay Items Index as standards and specifications for the construction and completion of the work required. **CDs and hard copies of the plans are available for purchase at LDI, 8601 Dunwoody Place, Suite 142, Sandy Springs, GA 770-992-1801.**

All bidders must comply with all general and special requirements of the bid information and instructions enclosed herein. A Pre-Bid Conference will be held on **Tuesday, September 28, 2010 at 10:00 AM** at the City of Sandy Springs City Hall Flying Pig Conference Room. **No questions will be accepted after the pre-bid conference.**

Sealed bids will be received no later than **2:00 P.M. on Thursday, October 07, 2010** in the City of Sandy Springs Purchasing Office, 7840 Roswell Road, Bldg.-500, Sandy Springs, Georgia 30350 at which time bids will be opened and publicly read aloud. Bids received after the above time or in any other location other than the Purchasing Office **will not** be accepted.

Bids shall be presented in a sealed opaque envelope with the bid number and name (**#11-280, Construction of Ridgeview Middle School Sidewalk**) clearly marked on the outside of the envelope. The name of the company or firm submitting a bid should also be clearly marked on the outside of the envelope. Four (4) ORIGINAL COPIES MUST BE SUBMITTED. Bids will not be accepted verbally or by fax or email. Bid packages are available at the Sandy Springs City Hall, Purchasing Office at the above address and also may be downloaded from the DOAS website (*www.doas.georgia.gov*) All questions should be forwarded in writing to Jasmine Bryant at jasmine.bryant@sandyspringsga.org. Please reference **Bid # 11-280 Construction of Ridgeview Middle School Sidewalk,** when requesting information.

The City reserves the right in its sole discretion to determine the method to be considered regarding the administrative evaluation of submitted bids in order to determine the most qualified, responsible, and responsive bidder. The City of Sandy Springs reserves the right to reject any or all bids and to waive technicalities and informalities, and to make award in the best interest of the City of Sandy Springs.

The selected contractor must be able to start work within ten (10) calendar days after the "Notice to Proceed" is issued. The time of completion for the project is Thirty (30) available calendar days from the date of the "Notice to Proceed." Section 108.08 of the State of Georgia Department of Transportation *Standard Specifications Construction of Transportation Systems* (current edition) shall be applied.

BID FORM

TO: BUYER
CITY OF SANDY SPRINGS
SANDY SPRINGS, GEORGIA 30350

Ladies and Gentlemen:

In compliance with your Invitation To Bid, the undersigned, hereinafter termed the Bidder, proposes to enter into a Contract with the City of Sandy Springs, Georgia, to provide the necessary machinery, tools, apparatus, other means of construction, and all materials and labor specified in the Contract Documents or as necessary to complete the Work in the manner therein specified within the time specified, as therein set forth, for:

Construction of Ridgeview Middle School Sidewalk
T-6000 – Phase II

The Bidder has carefully examined and fully understands the Contract, Specifications, and other documents hereto attached, has made a personal examination of the Site of the proposed Work, has satisfied himself as to the actual conditions and requirements of the Work, and hereby proposes and agrees that if his bid is accepted, he will contract with the City of Sandy Springs in full conformance with the Contract Documents. The Contractor must fully understand the complexity of this procurement before being awarded the contract for this project. No exceptions.

Unless otherwise directed, all work performed shall be in accordance with the Georgia Department of Transportation *Standard Specifications, Construction of Transportation Systems* (current edition). All materials used in the process of completion of the work included in the Contract will be furnished from Georgia Department of Transportation certified suppliers only.

It is the intent of this Bid to include all items of construction and all Work called for in the Specifications, or otherwise a part of the Contract Documents.

In accordance with the foregoing, the undersigned proposes to furnish and construct the items listed in the attached Bid schedule for the unit prices stated.

The Bidder agrees that the cost of any work performed, materials furnished, services provided or expenses incurred, which are not specifically delineated in the Contract Documents but which are incidental to the scope, intent, and completion of the Contract, shall be deemed to have been included in the prices bid for the various items scheduled.

The Bidder further proposes and agrees hereby to promptly commence the Work with adequate forces and equipment within ten (10) calendar days from receipt of Notice to Proceed and to complete all Work within Thirty (30) available calendar days from the Notice to Proceed.

Not in this Contract: The Bidder will be required to sign a "Notice of Intent" (NOI) as the "operator" prior to beginning construction. The Bidder shall be responsible for installing and maintaining the "Best Management Practices" (BMP's) throughout the term of the project. Upon completion and prior to final payment the Bidder will be required to sign a "Notice of Termination (NOT) upon final approval by COSS.

Attached hereto is an executed Bid Bond or certified check on the (Bank)_____
_____Of (City, State) _____
_____in the amount of _____ Dollars ($ (Five Percent of Amount Bid).

If this bid shall be accepted by the City of Sandy Springs and the undersigned shall fail to execute a satisfactory contract in the form of said proposed Contract, and give satisfactory Performance and Payment Bonds, or furnish satisfactory proof of carriage of the insurance required within ten days from the date of Notice of Award of the Contract, then the City of Sandy Springs may, at its option, determine that the undersigned abandoned the Contract and there upon this bid shall be null and void, and the sum stipulated in the attached Bid Bond or certified check shall be forfeited to the City of Sandy Springs as liquidated damages.
Bidder acknowledges receipt of the following addenda:

Addendum No.	Date Received
_____	_____
_____	_____
_____	_____
_____	_____

Bidder further declares that the full name and resident address of Bidder's Principal is as follows:
Signed, sealed, and dated this _____ day of _____

Bidder _____ (Seal)
Company Name

Bidder Mailing Address:

_____

_____

:_____

_____

_____

By:
Title:

By:
Title:

BIDDING INSTRUCTIONS

FAILURE TO RETURN THE FOLLOWING BID DOCUMENTS COULD RESULT IN THE BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION:

1. City Bid Schedule and City Bid Bond Form,
2. Applicable Compliance Specifications Sheets, and
3. Applicable Addenda Acknowledgement, Page 6.

INSURANCE REQUIREMENTS

Within 10 days of Notice of Award, and at all times that this Contract is in force, the Contractor shall obtain, maintain and furnish the City Certificates of Insurance from licensed companies doing business in the State of Georgia with an A.M. Best Rating A-6 or higher and acceptable to the City covering:

1. Statutory Workers' Compensation Insurance
   (a) Employers Liability:

Bodily Injury by Accident - $100,000 each accident
Bodily Injury by Disease - $500,000 policy limit
Bodily Injury by Disease - $100,000 each employee

2. Comprehensive General Liability Insurance
   (a) $1,000,000 limit of liability per occurrence for bodily injury and property damage
   Owner's and Contractor's Protective
   (b) Blanket Contractual Liability
   (c)I Blanket "X", "C", and "U"
   (d) Products/Completed Operations Insurance
   (e) Broad Form Property Damage
   (f) Personal Injury Coverage

3. Automobile Liability
   (a) $1,000,000 limit of liability
   (b) Comprehensive form covering all owned, non-owned and hired vehicles

4. Umbrella Liability Insurance
   (a) $1,000,000 limit of liability
   (b) Coverage at least as broad as primary coverage as outlined under Items 1, 2 and 3 above

5. The City of Sandy Springs, Georgia, and its subcontractors and affiliated companies, their officers, directors, employees shall be named on the Certificates of Insurance as additional insured and endorsed onto the policies for Comprehensive General Liability, Automobile Liability and Umbrella Liability insurance maintained pursuant to this Contract in connection with liability of the City of Sandy Springs and their affiliated companies and their officers, directors and employees arising out of Contractor's operations. Copies of the endorsements shall be furnished to the City prior to execution of the contract. Such insurance is primary insurance and shall contain a Severability of Interest clause as respects each insured. Such policies shall be non-cancelable except on thirty (30) days written notice to the City. Any separate insurance maintained in force by the additional insured named above shall not contribute to the insurance extended by Contractor's insurer(s) under this additional insured provision.

Certificate Holder should read: The City of Sandy Springs, 7840 Roswell Road, Building-500, Sandy Springs, Georgia 30350.

BONDING REQUIREMENTS

Each bid must be accompanied with a BID BOND (bond only: certified checks or other forms are not acceptable) in an amount equal to five percent (5%) of the base bid, payable to the City of Sandy Springs. Said bid bond guarantees the bidder will enter into a contract to construct the project strictly within the terms and conditions stated in this bid and in the bidding and contract documents, should the construction contract be awarded.

The Successful Bidder shall be required to furnish a bond for the faithful performance on the contract and a bond to secure payment of all claims for materials furnished and/or labor performed in performance of the project, both in amounts equal to one hundred percent (100%) of the contract price.

The Successful Bidder shall also be required to furnish a Maintenance Bond, in the amount of one-third (1/3) of the contract price, guaranteeing the repair or replacement caused by defective workmanship or materials for a period of one (1) year from the completion of construction.

Bonds shall be issued by a corporate surety appearing on the Treasury Department's most current list (Circular 570 as amended) and be authorized to do business in the State of Georgia.

Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners shall execute Bond.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT _____

_____

(Name of Contractor)_____

(Address of Contractor) at _____

(Corporation, Partnership and or Individual) hereinafter called Principal, and _____

_____
(Name of Surety)

_____
(Address of Surety

A corporation of the State of _____, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

City of Sandy Springs Georgia
(Name of Obligee)
7840 Roswell Rd., Bldg.-500, Sandy Springs, Georgia 30350
(Address of Obligee)

herein after referred to as Obligee, in the penal sum of_____
Dollars ($ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to the City of Sandy Springs, Georgia, a proposal for furnishing materials, labor and equipment for:

Construction of Ridgeview Middle School Sidewalk

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 bid is accepted, the Principal shall within ten days after receipt of notification of the acceptance execute a Contract in accordance with the Bid and upon the terms, conditions, and prices set forth in the form and manner required by the City of Sandy Springs, Georgia, and execute a sufficient and satisfactory
Performance Bond and Payment Bond payable to the City of Sandy Springs, Georgia, each in an amount of 100% of the total Contract Price, in form and with security satisfactory to said the City of Sandy Springs, 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 the City of Sandy Springs, 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.
PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed

pursuant, to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. SS 13-10-1, et. Seg. And SS 36-86-101, et. Seg. And is intended to be and shall be constructed as a bond in compliance with the requirements thereof.

Signed, sealed, and dated this _____ day of _____A.D., 20____

ATTEST:

_____ _____

(Principal Secretary) (Principal)

(SEAL) BY: _____

_____ _____

(Witness to Principal) (Address)

_____

(Address)

_____

(Surety)

ATTEST

BY: _____

(Attorney-in-Fact) and Resident Agent

_____

(Attorney-in-Fact)

(Seal) _____

(Address)

_____

(Witness as to Surety)

_____

(Address)

_____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: THAT

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____
(Corporation, Partnership or Individual)

_____

Hereinafter called Principal, and

_____
(Name of Surety)

_____
(Address of Surety)

A Corporation of the State of _____ and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

The City of Sandy Springs. Georgia
(Name of Obligee)

7840 Roswell Rd., Bldg.-500, Sandy Springs, Ga. 30350
(Address of Obligee)

hereinafter referred to as Obligee; are held firmly bound unto said Obligee and all persons doing work or furnishing skill, tools, machinery, supplies, or material under or for the purpose of the Contract hereinafter referred to, in the penal sum of:
_____Dollars ($ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Obligee, dated for:

NOW THEREFORE, the conditions of this obligation are such that if the above bound Principal shall well, truly, fully and faithfully perform said contract according to its terms, covenants, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the oblige, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreement of any and all duly authorized modifications of said contract that may hereafter be made, then his obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to

the work to be performed thereunder.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including but not limited to, O.C.G.A. SS 13-10-1 et. Eq. and SS 36-86-101, et. Seg., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

Signed, sealed, and dated this _____ day of _____A.D., 20____

ATTEST:

_____ _____
(Principal Secretary) (Principal)

(SEAL)

BY: _____

_____
(Witness to Principal)

_____
(Address)

_____

(Surety)

ATTEST BY: _____
Attorney-in-Fact) and Resident Agent

_____
(Attorney-in-Fact)

(Seal) _____
(Address)

_____
(Witness as to Surety)

_____
(Address)

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: THAT _____
(Name of Contractor)

_____
(Address of Contractor)

a _____
(Corporation, Partnership or Individual)

_____
Hereinafter called Principal, and

_____
(Name of Surety)

_____
(Address of Surety)

a Corporation of the State of _____ and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

The City of Sandy Springs Georgia
(Name of Obligee)

7840 Roswell Rd., Bldg.-500, Sandy Springs, Georgia 30350
(Address of Obligee)

hereinafter referred to as Obligee; for the use and protection of all subcontractors and all persons supplying labor, services, skill, tools, machinery, materials and/or equipment in the prosecution of the work provided for in the contract herein after referred to in the full and just sum of _____Dollars ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, the Principal and Surety bind themselves, their, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract. hereto attached, with the Obligee, dated _____ for _____.

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall well, truly, and faithfully perform said Contract in accordance to its terms, covenants, and conditions, and shall promptly pay all persons furnishing labor, materials, services, skill, tools, machinery and/or equipment for use in the performance of said Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect.

All persons who have furnished labor, materials, services, skill, tools, machinery and/or equipment for use in the performance of said Contract shall have a direct right of action on this Bond, provided payment has not been made in full within ninety (90) days after the last day on which labor was performed, materials, services, skill, tools, machinery, and equipment furnished or the subcontract completed.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive

notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed there under.

PROVIDED, HOWEVER, that no suit or action shall be commenced hereunder by any person furnishing labor, materials, services, skill, tools, machinery, and/or equipment having a direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Principal:

Unless such person shall have given notice to the Principal within One Hundred and Twenty (120) days after such person did, or performed the last of the work or labor, or furnished the last of the materials, services, skill, tools, machinery and/or equipment for which claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials, services, skill, tools, machinery and/or equipment were furnished, or for whom the work or labor was done or performed. Such a notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Principal, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State in which the aforesaid project is located, save that such service need not be made by a public officer, and a copy of such notice shall be delivered to the Obligee, to the person and at the address provided for in the Contract, within five (5) days of the mailing of the notice to the Principal.

PROVIDED, FURTHER, that any suit under this bond must be instituted before the expiration of one (1) year after the acceptance of the public works covered by the Contract by the proper authorities.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. SS 13-10-1, et. Eq. and SS 36-86-101, et. Seg., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

Signed, sealed, and dated this _____ day of _____A.D., 20____

ATTEST:

_____ _____

(Principal Secretary) (Principal)

(SEAL) BY: _____

_____ _____

(Witness to Principal) (Address)

_____
(Address)

_____
(Surety)

ATTEST BY: _____
(Attorney-in-Fact) and Resident Agent

_____
(Attorney-in-Fact)

(Seal)
(Address) _____

_____
(Witness as to Surety)

_____
(Address)

_____

MAINTENANCE BOND

CITY OF SANDY SPRINGS, GEORGIA
PROJECT NO: **T-6000-Phase II** FULTON COUNTY, GEORGIA
BOND NO: _____

KNOW ALL MEN BY THESE PRESENTS
That we,_____ as Principal, and
_____ as Surety, are held and firmly bound unto the CITY OF SANDY SPRINGS, GEORGIA, as Obligee in the sum of 1/3 of the contract bid for the payment of which said Principal and Surety bind themselves, their heirs, administrators, executors, successors and assigns jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into an agreement with the City of Sandy Springs for **Construction of Ridgeview Middle School Sidewalk:**
and said work has now been completed and the Obligee desires a maintenance bond guarantee said streets and improvements for a period of one (1) year beginning _____ and ending _____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall fully indemnify and save harmless the City of Sandy Springs from any and all loss, costs, expenses or damages, for any repairs or replacements required because of defective workmanship or materials in said construction, then this obligation shall be null and void; otherwise to be and remain in full force and effect as to any such claim arising within one (1) year from the completion of said construction as set forth in said agreement.

Signed, sealed and dated this_____ day of _____, 20 _____

Witness:

_____
(Principal)

_____
(Name of Surety. Company)

_____
(Attorney-in-fact)

QUALIFICATIONS SIGNATURE AND CERTIFICATION
(Bidder to sign and return)

I certify that this offer is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a proposal for the same materials, supplies, equipment, or services and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of State and Federal Law and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of the proposal and certify that I am authorized to sign this proposal for the proposer. I further certify that the provisions of the Official Code of Georgia Annotated, Sections 45-10-20 et. Seq. have not been violated and will not be violated in any respect.

Authorized Signature_____Date_____

Print/Type Name_____

Print/Type Company Name Here_____

CORPORATE CERTIFICATE

I, _____, certify that I am the Secretary of the Corporation named as Contractor in the foregoing bid; that _____ who signed said bid in behalf of the Contractor, was then (title)_____ of said Corporation; that said bid was duly signed for and in behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said Corporation is organized under the laws of the State of _____.

This _____ day of _____, 20_____

_____(Seal)
(Signature)

LIST OF SUBCONTRACTORS

I do _____, do not _____, propose to subcontract some of the work on this project. I propose to Subcontract work to the following subcontractors:

Company Name:_____

Appendix A

CONTRACT AGREEMENT

For

Project T-6000- Phase II
Construction of Ridgeview Middle School Sidewalk
Bid #11-280

("Project")

Between

CITY OF SANDY SPRINGS, GEORGIA

("City")

and

_____

("Contractor")

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EXHIBITS

CONTRACT AGREEMENT

This Agreement is made by and between the City of Sandy Springs, a political subdivision of the State of Georgia (hereinafter referred to as the City) and _____, (hereinafter referred to as the Contractor) under seal for construction of _____ _____ (hereinafter referred to as the Project);

WHEREAS, the Contractor desires to enter into this Agreement for construction of the Project and has represented to the City that it is qualified **(meaning a Prequalified Prime Contractor listed by the Georgia Department of Transportation, Office of Contract Administration)** and experienced to provide such services necessary for construction of the Project (the City requires that the Contractor and to comply with all federal, state and local legal requirements imposed on the Project as the result of federal funding and the City has relied on such representation;

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, it is agreed by and between the Contractor and the City as follows:

ARTICLE I

THE CONTRACT AND THE CONTRACT DOCUMENTS

1.1 The Contract

1.1.1 The Contract between the City and the Contractor, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it**.**

1.2 The Contract Documents

1.2.1 The Contract Documents consist of this Agreement, General Conditions, Special Provisions, the Technical Specifications, the Drawings and Plans, Bidding Documents, all Change Orders and Field Orders issued hereafter, the base bid made by the Contractor in response to the City's request for proposal no. _____ (the "Bid"), and any other amendments hereto executed by the parties hereafter, together with the following (if any):

_____
_____
_____

Documents not enumerated in this Paragraph 1.2 are not Contract Documents and do not form a part of this Contract**.**

1.3 Entire Agreement

1.3.1 The Contract Documents constitute the entire and exclusive agreement between the City and the Contractor with reference to the Project.

1.4 Subletting, Assignment, or Transfer

1.4.1 It is understood by the parties to this Agreement that the Work of the Contractor is considered

personal by the City. The Contractor agrees not to assign, sublet, or transfer any or all of its interest in this Agreement without prior written approval of the City.

1.4.2 The City reserves the right to review all subcontracts prepared in connection with the Agreement, and the Contractor agrees that it shall submit to the City proposed subcontract documents together with Subcontractor cost estimates for the City's review and written concurrence in advance of their execution.

1.4.3 All subcontracts in the amount of $10,000.00 or more shall include the provisions set forth in this Agreement.

1.5 No Privity with Others

1.5.1 Nothing contained in this Contract shall create, or be interpreted to create, privity or any other contractual agreement between the City and any person or entity other than the Contractor.

1.6 Intent and Interpretation

1.6.1 The intent of this Contract is to require complete, correct and timely execution of the Work. Any Work that may be required, implied or inferred by the Contract Documents, or any one or more of them, as necessary to produce the intended result shall be provided by the Contractor for the Contract Price, as hereinafter defined.

1.6.2 This Contract is intended to be an integral whole and shall be interpreted as internally consistent. What is required by any one Contract Document shall be considered as required by the Contract.

1.6.3 When a word, term or phrase is used in this Contract, it shall be interpreted or construed, first, as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

1.6.4 The words include, includes, or including, as used in this Contract, shall be deemed to be followed by the phrase, without limitation.

1.6.5 The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of this Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of this Contract.

1.6.6 Words or terms used as nouns in this Contract shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.6.7 The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the shop drawings and the product data and shall give written notice to the City of any inconsistency, ambiguity, error or omission which the Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance or the express or implied approval by the City of the Contract Documents, shop drawings or product data shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractors compliance with this Contract. HOWEVER, THE CITY MAKES NO REPRESENTATION OR WARRANTY OF ANY NATURE WHATSOEVER TO THE CONTRACTOR CONCERNING THE DOCUMENTS FOR THE PROJECT, INCLUDING THE DRAWINGS AND SPECIFICATIONS FOR

THE PROJECT. By the execution hereof, the Contractor acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not rely upon any representation or warranties by the City concerning such documents as no such representation or warranties have been or are hereby made.

1.6.8 Neither the organization of any of the Contract Documents into divisions, sections, paragraphs, articles, (or other categories), nor the organization or arrangement of the design, shall control the Contractor in dividing the Work or in establishing the extent or scope of the Work to be performed by Subcontractors.

1.7 Ownership of Contract Documents

1.7.1 The Contract Documents, and each of them, shall remain the property of the City. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided, however, that in no event shall Contractor use, or permit to be used, any or all of such Contract Documents on other projects without the City's prior written authorization.

1.8 Hierarchy of Contract Documents

1.8.1 In the event of any conflict, discrepancy, or inconsistency among any of the Contract Documents, the following hierarchy shall control: (a) as between figures given on drawings and the scaled measurements, the figures shall govern; (b) as between large scale drawings and small scale drawings, the large scale shall govern; (c) as between drawings and specifications, the requirements of the specifications shall govern; (d) as between the Contract Agreement and General and the specifications, the requirements of the Contract Agreement shall govern. As set forth hereinabove, any and all conflicts, discrepancies, or inconsistencies shall be immediately reported to the City in writing by the Contractor.

ARTICLE II

THE WORK

2.1 Contractor Responsibility

2.1.1 The Contractor shall perform all of the Work required, implied or reasonably inferable from, this Contract.

2.2 "Work" Defined

2.2.1 The term "Work" shall mean whatever is done by or required of the Contractor to perform and complete its duties under this Contract, including the following: construction of the whole or a designated part of the Project; furnishing of any required surety bonds and insurance; and the provision or furnishing of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, permits and licenses required of the Contractor, fuel, heat, light, cooling and all other utilities as required by this Contract. The Work to be performed by the Contractor is generally described in A, SCOPE OF SERVICES, attached hereto and incorporated herein.

2.3 Review of Work

2.3.1 Authorized representatives of the City, GDOT, and affected federal agencies may at all reasonable times review and inspect the activities and data collected under the terms of the Contract and any amendments thereto, including but not limited to, all reports, drawings, studies, specifications, estimates, maps, and computations, prepared by or for the City.

2.4 Workday and Restrictions, Suspension and Interruption

2.4.1 Normal workday for the Work shall be from 8:00 A.M. to 5:00 P.M. and the normal work week shall be Monday through Friday. The City will consider extended workdays or work weeks upon written request on a case-by-case basis. The City may restrict work hours in certain locations or at certain times of the day. No work will be allowed on national holidays (i.e., Memorial Day, July 4th, Labor Day, etc.). The City may order the Contractor in writing to suspend, delay or interrupt all or any part of the Work for such period of time as it may determine appropriate for the convenience of the City. The time for completion of the Work shall be extended by the number of days the Work is suspended. The City shall not be responsible for any claims, damages or costs stemming from any delay of the Project. Contactor shall schedule work to limit disruption to school traffic in the morning and afternoon.

ARTICLE III

CONTRACT TIME

3.1 Time and Liquidated Damages

3.1.1 The Contractor shall not proceed to furnish such services and the City shall not become obligated to pay for same until a written authorization to proceed ("Notice to Proceed") has been sent to the Contractor from the City. The Contractor shall commence the Work no later than ten (10) days after the effective date of the Notice to Proceed and shall achieve Substantial Completion of the Work, as hereinafter defined, no later than **Thirty (30) available calendar days** in accordance with the Contract Documents. The number of available days from the date on which the Work is permitted to proceed, through the date set forth for Substantial Completion, shall constitute the Contract Time. The Work shall be carried on expeditiously, it being understood, however, that this Agreement may be extended or continued in force by the parties hereto in writing as provided herein.

3.1.2 The Contractor shall pay the City the sum of $500.00 per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Substantial Completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the City, estimated at or before the time of executing this Contract. When the City reasonably believes that Substantial Completion will be inexcusably delayed, the City shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the City to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the City has withheld payment, the City shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

3.2 Substantial Completion

3.2.1 Substantial Completion shall mean that stage in the progression of the Work when the Work is sufficiently complete in accordance with this Contract that the City can enjoy beneficial use and occupancy of the Work and can utilize the Work for its intended purpose. Partial use or occupancy of the Project shall not result in the Project being deemed substantially complete, and such partial use or occupancy shall not be evidence of Substantial Completion**.**

3.3 Time is of the Essence

3.3.1 All limitations of time set forth in the Contract Documents are of the essence of this Contract.

ARTICLE IV

CONTRACT PRICE

4.1 The Contract Price

4.1.1 The total contract amount for the Project (the "Contract Price") shall be as set forth in the bid schedule ("Bid Schedule") attached hereto as EXHIBIT B, BID SCHEDULE and incorporated herein. Payment to the Contractor pursuant to the Bid Schedule is full payment for the complete scope of services. The Contract Price shall not be modified except by Change Order as provided in this Contract.

ARTICLE V

PAYMENT OF THE CONTRACT PRICE

5.1 Bid Schedule

5.1.1 The Contractor shall invoice and be paid pursuant to the Bid Schedule contained in the Contract Documents.

5.2 Payment Procedure

5.2.1 The City shall pay the Contract Price to the Contractor as provided below.

5.2.2 Based upon the Contractors invoices for payment submitted to the City, the City shall make progress payments to the Contractor on account of the Contract Price.

5.2.3 On or before the **5th** day of each month after commencement of the Work, the Contractor shall submit an invoice for Work satisfactorily completed as evaluated by an inspector representing the City pursuant to the Bid Schedule. The invoice shall be in such form and manner, and with such supporting data and content, as the City may require. Therein, the Contractor may request payment for ninety percent (90%) of that portion of the Contract Price properly allocable to Contract requirements properly provided, labor, materials and equipment properly incorporated into the Work plus ninety percent (90%) of that portion of the Contract Price properly allocable to materials or equipment properly stored on-site (or elsewhere if approved in advance in writing by the City) for subsequent incorporation into the Work, less the total amount of previous payments received from the City. Payment for stored materials and equipment shall be conditioned upon the Contractors proof satisfactory to the City, that the City has title to such materials and equipment and shall include proof of required insurance. Such invoice shall be signed by the Contractor and shall constitute the

Contractors representation that the Work has progressed to the level for which payment is requested in accordance with the Schedule of Work, that the Work has been properly installed or performed in full accordance with this Contract, and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the City will review the invoice and may also review the Work at the Project Site or elsewhere to determine whether the quantity and quality of the Work is as represented in the invoice and is as required by this Contract. The City shall make partial payments on account of the Contract Price to the Contractor within thirty (30) days following receipt of each invoice. The amount of each partial payment shall be the amount approved for payment less such amounts, if any, otherwise owing by the Contractor to the City or which the City shall have the right to withhold as authorized by this Contract. The City shall not be precluded from the exercise of any of its rights as set forth in Paragraph 5.3 hereinbelow; PROVIDED, HOWEVER, that when fifty (50) percent of the Contract value, including Change Orders and other additions to the Contract value, provided for by the Contract Documents is due, and the manner of completion of the Contract Work and its progress are reasonably satisfactory to the City, the City shall withhold no more retainage. At the discretion of the City, and with the approval of the Contractor, the retainage of any Subcontractor may be released separately as the Subcontractor completes its Work. If, however, after discontinuing the retention, the City determines that the Work is unsatisfactory or has fallen behind schedule, retention may be resumed at the previous level. If retention is resumed by the City, the Contractor and Subcontractors shall be entitled to resume withholding retainage accordingly. The rights of the City set forth herein to retainage are in addition to all of the other rights and remedies of the City set forth in this Agreement.

5.2.4 The Contractor warrants that upon submittal of an invoice, all Work for which payments have been received from the City shall be free and clear of liens, claims, security interest or other encumbrances in favor of the Contractor or any other person or entity whatsoever.

5.2.5 The Contractor shall promptly pay each Subcontractor out of the amount paid to the Contractor on account of such Subcontractors Work, the amount to which such Subcontractor is entitled. In the event the City becomes informed that the Contractor has not paid a Subcontractor as herein provided, the City shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such Subcontractor as joint payees. Such joint check procedure, if employed by the City, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the City to repeat the procedure in the future.

5.2.6 No progress payment, nor any use or occupancy of the Project by the City, shall be interpreted to constitute an acceptance of any Work not in strict accordance with this Contract.

5.3 Withheld Payment

5.3.1 The City may decline to make payment, may withhold funds, and, if necessary, may demand the return of some or all of the amounts previously paid to the Contractor, to protect the City from loss because of:

(a) defective Work not remedied by the Contractor or, in the opinion of the City, unlikely to be remedied by the Contractor;

(b) claims of third parties against the City or the City's property;

(c) failure by the Contractor to pay Subcontractors or others in a prompt and proper fashion;

(d) evidence that the balance of the Work cannot be completed in accordance with the Contract for the unpaid balance of the Contract Price;

(e) evidence that the Work will not be completed in the time required for substantial or final completion;

(f) persistent failure to carry out the Work in accordance with the Contract;

(g) damage to the City or a third party to whom the City is, or may be, liable.

In the event that the City makes written demand upon the Contractor for amounts previously paid by the City as contemplated in this Subparagraph 5.3.1, the Contractor shall promptly comply with such demand**.**

5.4 Substantial Completion

5.4.1 When the Contractor believes that the Work is substantially complete, the Contractor shall so notify the City. The City shall make a preliminary final inspection of the Project and shall submit to the Contractor a list of items to be completed or corrected (the "Punch List"). The Contractor shall complete all items on the Punch List within fifteen (15) available days from the date of issuance of the Punch List by the City. If the Contractor is already in liquidated damages, as herein provided, prior to beginning the Punch List, then liquidated damages will be postponed for the fifteen (15) available days. Once the fifteen (15) available days expires, then liquidated damages will continue to accrue. In any case, once the fifteen (15) available days expires after the Punch List is submitted to the Contractor, then liquidated damages will be assessed.

5.5 Completion and Final Payment

5.5.1 When all of the Work is finally complete and the Contractor is ready for a final inspection, the Contractor shall notify the City thereof in writing. Thereupon, the City will make final inspection of the Work and, if the Work is complete in full accordance with this Contract and this Contract has been fully performed, the Contractor is entitled to the remainder of the unpaid Contract Price as hereinafter provided in Subparagraph 5.5.3. Guarantees required by the Contract shall commence on the date of final completion of the Work.

5.5.1.1 If the Contractor fails to achieve final completion within the time fixed therefore by the City, the Contractor shall pay the City the sum of $500.00 per day for each and every calendar day of unexcused delay in achieving final completion beyond the date set forth herein for final completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the City, estimated at or before the time of executing this Contract. When the City reasonably believes that final completion will be delayed without excuse, the City shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the City to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving final completion, or any part thereof, for which the City has withheld payment, the City shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

5.5.2 The Contractor shall not be entitled to final payment unless and until it submits to the City all documents required by the Contract, including, but not limited to, its affidavit that all payrolls, invoices for materials and equipment, and other liabilities connected with the Work for which the City, or the City's property might be responsible, have been fully paid or otherwise satisfied; releases and

waivers of lien from all Subcontractors of the Contractor and of any and all other parties required by the City; consent of Surety, if any, to final payment. If any third party fails or refuses to provide a release of claim or waiver of lien as required by the City, the Contractor shall furnish a bond satisfactory to the City to discharge any such lien or indemnify the City from liability.

5.5.3 Upon a determination by an inspector representing the City that the Work is complete in full accordance with this Contract, the City shall pay the Contractor an amount sufficient to increase total payments to the Contractor to one hundred percent (100%) of the Contract Price less two hundred percent (200%) of the reasonable cost as determined by the City for completing all incomplete Work, correcting and bringing into conformance all defective and nonconforming Work, and handling all unsettled claims.

The City shall make final payment of all sums due the Contractor within thirty (30) days of final completion of the Project as determined by an inspector representing the City.

5.5.4 Acceptance of final payment shall constitute a waiver of all claims against the City by the Contractor except for those claims previously made in writing against the City by the Contractor, pending at the time of final payment, and identified in writing by the Contractor as unsettled at the time of its request for final payment.

ARTICLE VI

THE CITY

6.1 City Responsibility

6.1.1 Excluding permits and fees normally the responsibility of the Contractor, the City shall obtain all approvals, easements, and the like required for construction and shall pay for necessary assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

6.2 Right to Stop Work

6.2.1 If the Contractor persistently fails or refuses to perform the Work in accordance with this Contract, the City may order the Contractor to stop the Work, or any described portion thereof, until the cause for stoppage has been corrected no longer exists, or the City orders that Work be resumed. In such event, the Contractor shall immediately obey such order.

6.3 City's Right to Carry Out Work

6.3.1 If the City determines to order the Contractor to stop the Work under the provisions of Paragraph 6.2, the City shall provide notice to the Contractor and the Contractor's surety under the performance bond that they have seven (7) days to provide adequate assurance to the City that the cause of such stoppage will be eliminated or corrected and provide the City with a plan to remedy the cause of such Work stoppage. If the Contractor and the surety fail within seven (7) days of such Work stoppage to provide such assurance, then the City may, without prejudice to any other rights or remedies the City may have against the Contractor, proceed to carry out the remedies necessary to eliminate or correct the cause of such Work stoppage. Upon proceeding to perform or cause to be performed any corrective actions, the City shall provide notice to the Contractor and the surety of action being taken by the City. In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the cost of correcting the subject deficiencies. If the unpaid portion of the Contract Price is insufficient to cover the amount due the City, the Contractor and the

surety shall be responsible for paying the difference to the City.

ARTICLE VII

THE CONTRACTOR

7.1 Duties with Respect to Documents

7.1.1 The Contractor is again reminded of its continuing duty set forth in Subparagraph 1.6.7. The Contractor shall perform no part of the Work at any time without adequate Contract Documents or, as appropriate, approved shop drawings, product data or samples for such portion of the Work. If the Contractor performs any of the Work knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the City, the Contractor shall bear responsibility for such performance and shall bear the cost of correction.

7.2 Manner of Performance

7.2.1 The Contractor shall perform the Work strictly in accordance with this Contract.

7.3 Supervision

7.3.1 The Contractor shall supervise and direct the Work using the Contractor's best skill, effort and attention. The Contractor shall be responsible to the City for any and all acts or omissions of the Contractor, its employees and others engaged in the Work on behalf of the Contractor.

7.4 Compliance

7.4.1 The Contractor's performance of the Work shall comply with all federal and state legal requirements imposed on GDOT including specifically, but not limited to, the provisions governing GDOT's authority to contract, Sections 32-2-60 through 32-2-77 of the Official Code of Georgia Annotated; GDOT's Rules and Regulations Governing the Prequalification of Prospective Bidders, Chapter 672-5; and GDOT's Standard Specifications, Construction of Transportation Systems (current edition), and Special Provisions modifying them, except as noted in the General Conditions to the Contract including in the Contract Documents. The Contractor shall require all subcontracts for construction of the Project to incorporate the requirements of this Subparagraph.

7.4.2 The Contractor shall comply with the provisions of Federal Form-1273, attached hereto as EXHIBIT C, REQUIRED CONTRACT PROVISIONS – FEDERAL AID CONSTRUCTION CONTRACTS, and incorporated herein. The Contractor further agrees to require compliance with and physical incorporation of the provisions of Federal Form-1273 into all subcontracts for construction of the Project.

7.4.3 The Contractor shall comply with and shall require its Subcontractors to comply with the regulations for compliance with Title VI of the Civil Rights Act of 1964, as amended and 23 CFR 200, as stated in EXHIBIT D, NOTICE TO CONTRACTORS - COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, attached hereto and incorporated herein.

7.4.4 The Contractor shall comply with the provisions of Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) (43 CFR 14895) and shall physically include the provisions of Executive Order 11246 in each subcontract in excess of $10,000. A copy of Executive Order 11246 (43 CFR 14895) is attached to this Agreement as EXHIBIT E,

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246) (43 CFR 14895), and incorporated herein.

7.4.5 The Contractor shall certify that the provisions of Section 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, in the form attached hereto as EXHIBIT F, CERTIFICATION OF SPONSOR - DRUG-FREE WORKPLACE, and incorporated herein.

7.4.6 The Contractor shall subcontract a minimum of **_N/A__** percent (**_N/A_**%) of the total amount of Project funds to Disadvantaged Business Enterprise ("DBE"), as defined and provided for under the Federal Rules and Regulations 49 CFR 23 and 26, and as outlined in EXHIBIT G, DBE REQUIREMENTS, attached hereto and incorporated herein.

7.4.7 The Contractor shall comply with and shall require its Subcontractors to comply with all applicable requirements of the American with Disabilities Act of 1990 ("ADA"), 42 U.S.C. 12101, et seq. and 49 U.S.C. 322; Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. 791, and regulations and amendments thereto.

7.4.8 The Contractor shall provide to the City in the form attached hereto as EXHIBIT H, CONTRACTOR CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS, a certification regarding debarment, suspension, ineligibility and voluntary exclusion in compliance with Executive Order 12549 and 49 CFR 29, according to instructions attached to the certification form. As a part of the Exhibit H certification, the Contractor agrees to include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transaction," as provided by GDOT without modification, in all lower tier covered transactions and in all solicitations for lower tier transactions, and shall cause the lower tier participant or Subcontractor to submit the certification attached hereto as EXHIBIT I, LOWER TIER CONTRACTOR CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS, according to the instructions attached to the certification form.

7.4.9 The Contractor shall comply with and shall require its Subcontractors to comply with all applicable requirements of the Davis-Bacon Act of 1931, 40 U.S.C. 276(a), as prescribed by 23 U.S.C. 113 for federal aid highway projects, except roadways classified as local roads or rural minor collectors. **Note: Davis-Bacon Wage Rates not required for this contract.**

7.4.10 The Contractor shall comply with and shall require its Subcontractors to comply with Section 25-9-1, et seq. of the Georgia Code Annotated, "Georgia Utility Facility Protection Act", CALL BEFORE YOU DIG 1-800-282-7411.

7.4.11 The Contractor shall comply with and shall cause its Subcontractors to comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330), as supplemented by Department of Labor Regulations (29 CFR Part 5).

7.4.12 The Contractor shall comply with and shall cause its Subcontractors to comply with the Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented in Department of Labor Regulations (29 CFR, Part 3).

7.4.13 The Contractor shall execute a certification and shall cause all Subcontractors to execute a certification in the form of EXHIBIT J, CERTIFICATION OF CONTRACTOR – GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT, attached hereto and incorporated herein. Pursuant to the certification, Contractor agrees to comply with all applicable requirements of the Georgia Security

and Immigration Compliance Act of 2006 as codified in O.C.G.A. Sections 13-10-90 and 13-10-91 and regulated in Chapter 300-10-1 of the Rules and Regulations of the State of Georgia, "Public Employers, Their Contractors and Subcontractors Required to Verify New Employee Work Eligibility Through a Federal Work Authorization Program," accessed at *http://www.dol.state.ga.us*.

7.4.14 The Contractor acknowledges and agrees that the failure to complete appropriate certifications or the submission of a false certification as required herein shall result in the termination of this Agreement as provided in Article XII herein.

7.5 Warranty

7.5.1 The Contractor warrants to the City that all labor furnished to progress the Work under this Contract will be competent to perform the tasks undertaken, that the product of such labor will yield only first-class results, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Contract, and that the Work will be of good quality, free from faults and defects and in strict conformance with this Contract. All Work not conforming to these requirements may be considered defective. Unless otherwise specified in this Contract, acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the City's rights under any warranty or guarantee. The Contractor shall remedy all defects in the Work and pay for damage to the Work and/or to other City property resulting from defective Work, which shall appear within a minimum period of one (1) year from the date of acceptance of the Work under this Contract, unless a longer period is specified. The one (1) year warranty period shall begin after any repairs are performed, if needed.

7.6 Permits, Inspections, Fees and Licenses

Except as otherwise provided herein, the Contractor shall obtain and pay for all permits, inspections, fees and licenses necessary and ordinary for the Work. The Contractor shall comply with all lawful requirements applicable to the Work and shall give and maintain any and all notices required by applicable law, ordinance, or regulation pertaining to the Work.

7.7 Supervision

7.7.1 The Contractor shall employ and maintain at the Project Site only competent supervisory personnel. Absent written instruction from the Contractor to the contrary, the superintendent shall be deemed the Contractor's authorized representative at the Project Site and shall be authorized to receive and accept any and all communications from the City. The Contractor will ensure that an OSHA qualified excavation "competent person" is on site at all times when excavation work is being conducted.

7.8 Schedule

7.8.1 The Contractor shall submit to the City on a weekly basis a Schedule of Work to be performed for the next two (2) weeks. The Schedule of Work must be delivered to the City each Thursday no later than 12:00 noon. The Contractor's Schedule of Work shall be prepared in such form, with such detail, and support Contract ARTICLE VII 01-25-10.docxd by such data as the City may require. The City reserves the right to prohibit Work on any section of the Project not included in the weekly Schedule of Work. The Schedule of Work must accurately represent the intended Work and cannot be vague or broad, such as listing all Work in the Contract. The violation of this provision by the Contractor shall constitute a material breach of this Contract. THE PARTIES SPECIFICALLY AGREE THAT ANY FLOAT CONTAINED IN THE SCHEDULES SHALL BELONG TO THE PROJECT AND IN NO EVENT SHALL THE CONTRACTOR MAKE CLAIM FOR ANY

ALLEGED DELAY, ACCELERATION, OR EARLY COMPLETION SO LONG AS THE PROJECT IS COMPLETED WITHIN THE CONTRACT TIME. Strict compliance with the requirements of this Paragraph is a condition precedent for payment to the Contractor, and failure by the Contractor to strictly comply with said requirements shall constitute a material breach of this Contract.

7.9 Contract to be Maintained at Project Site

The Contractor shall continuously maintain at the Project Site, for the benefit of the City, one record copy of this Contract marked to record on a current basis changes, selections and modifications made during construction. Additionally, the Contractor shall maintain at the Project Site for the City the approved shop drawings, product data, samples and other similar required submittals. Upon final completion of the Work, all of these record documents shall be delivered to the City.

7.10 Shop Drawings, Product Data and Samples

7.10.1 Shop drawings, product data, samples and other submittals from the Contractor do not constitute Contract Documents. Their purpose is merely to demonstrate the manner in which the Contractor intends to implement the Work in conformance with information received from the Contract Documents. The Contractor is required to keep a copy of all stamped and approved plans on site, to include a stamped copy of the GSWCC approved plans.

7.10.2 The Contractor shall not perform any portion of the Work requiring submittal and review of shop drawings, product data or samples unless and until such submittal shall have been approved by the City. Approval by the City, however, shall not be evidence that Work installed pursuant thereto conforms with the requirements of this Contract.

7.11 Cleaning the Project Site and the Project

7.11.1 The Contractor shall keep the Project Site reasonably clean during performance of the Work. Upon final completion of the Work, the Contractor shall clean the Project Site and the Project and remove all waste, together with all of the Contractor's property from the Project Site. The Contractor is requested to submit a copy of their Safety Program and on-going training schedule that will be provided to their personnel in accordance with OSHA/CRF 1926.

7.12 Access to Work

7.12.1 Access to the Work shall be given to the City, GDOT and any affected federal agency requiring access to the Work at all times from commencement of the Work through final completion. The Contractor shall take whatever steps necessary to provide access when requested.

7.13 Indemnity

7.13.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the City and GDOT, their officers, employees, representatives, and agents from and against liability, claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from performance of the Work, provided that such liability, claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such liability, claim, damage, loss or expense is caused in part by a party indemnified hereunder.

7.13.2 In claims against any person or entity indemnified under this Paragraph 7.13 by an employee of the Contractor, a Subcontractor, any one directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 7.13 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

7.13.3 The Contractor shall ensure that the provisions of this Paragraph 7.13 are included in all contracts and subcontracts for the performance of Work under this Agreement.

7.14 Means, Methods, Techniques, Sequences, Procedures and Safety

7.14.1 The Contractor is fully responsible for, and shall have control over, all construction means, methods, techniques, sequences, procedures and safety, and shall coordinate all portions of the Work required by the Contract Documents.

7.15 Separate Contracts

7.15.1 The City reserves the right to perform work on the premises with its own forces or by the use of other contractors. In such event, the Contractor shall fully cooperate with the City and such other contractors and shall coordinate, schedule and manage its work so as not to hinder, delay or otherwise interfere with the separate work of the City or other contractors.

7.16 Maintenance of Contract Cost Records

7.16.1 The Contractor shall maintain all books, documents, papers, accounting records, and other evidence pertaining to costs incurred on the Project and used in support of its Bid and shall make such material available at all reasonable times during the period of the Contract, and for three (3) years from the date of final payment under the Contract, for inspection by GDOT and any reviewing agencies, and copies thereof shall be furnished upon request. The Contractor agrees that the provisions of this Subparagraph shall be included in any agreement it may make with any Subcontractor, assignee, or transferee.

ARTICLE VIII

CONTRACT ADMINISTRATION

8.1 Claims by the Contractor

8.1.1 All Contractor claims shall be initiated by written notice and claim to the City. Such written notice and claim must be furnished within seven (7) days after occurrence of the event, or the first appearance of the condition, giving rise to the claim.

8.1.2 Pending final resolution of any claim of the Contractor, the Contractor shall diligently proceed with performance of this Contract and the City shall continue to make payments to the Contractor in accordance with this Contract. The resolution of any claim under this Paragraph 8.1 shall be reflected by a Change Order executed by the City and the Contractor.

8.1.3 **Claims for Concealed and Unknown Conditions** -- Should concealed and unknown conditions encountered in the performance of the Work (a) below the surface of the ground or (b) in

an existing structure be at variance with the conditions indicated by this Contract, or should unknown conditions of an unusual nature differing materially from those ordinarily encountered in the area and generally recognized as inherent in Work of the character provided for in this Contract, be encountered, the Contract Price shall be equitably adjusted by Change Order upon the written notice and claim by either party made within seven (7) days after the first observance of the condition. As a condition precedent to the City having any liability to the Contractor for concealed or unknown conditions, the Contractor must give the City written notice of, and an opportunity to observe, the condition prior to disturbing it. The failure by the Contractor to make the written notice and claim as provided in this Subparagraph shall constitute a waiver by the Contractor of any claim arising out of or relating to such concealed or unknown condition.

8.1.4 **Claims for Additional Costs** -- If the Contractor wishes to make a claim for an increase in the Contract Price, as a condition precedent to any liability of the City therefor, the Contractor shall give the City written notice of such claim within seven (7) days after the occurrence of the event, or the first appearance of the condition, giving rise to such claim. Such notice shall be given by the Contractor before proceeding to execute any additional or changed Work. The failure by the Contractor to give such notice prior to executing the Work shall constitute a waiver of any claim for additional compensation.

8.1.4.1 In connection with any claim by the Contractor against the City for completion in excess of the Contract Price, any liability of the City shall be strictly limited to direct costs incurred by the Contractor and shall in no event include indirect costs or consequential damages of the Contractor. The City shall not be liable to the Contractor for claims of third parties, including Subcontractors, unless and until liability of the Contractor has been established therefor in a court of competent jurisdiction.

8.1.5 **Claims for Additional Time** -- If the Contractor is delayed in progressing any task which at the time of the delay is then critical or which during the delay becomes critical, as the sole result of any act or neglect to act by the City or someone acting in the City's behalf, or by changes ordered in the Work, unusual delay in transportation, unusually adverse weather conditions not reasonably anticipatable, fire or any causes beyond the Contractor's control, then the date for achieving Substantial Completion of the Work shall be extended upon the written notice and claim of the Contractor to the City, for such reasonable time as the City may determine. Any notice and claim for an extension of time by the Contractor shall be made not more than seven (7) days after the occurrence of the event or the first appearance of the condition giving rise to the claim and shall set forth in detail the Contractor's basis for requiring additional time in which to complete the Project. In the event the delay to the Contractor is a continuing one, only one notice and claim for additional time shall be necessary. If the Contractor fails to make such claim as required in this Subparagraph, any claim for an extension of time shall be waived.

8.1.6 Extension of Contract Time for Unusually Adverse Weather Conditions not Reasonably Anticipated

8.1.6.1 Pursuant to the provisions of Subparagraph 8.1.5 of the Contract Agreement, the Contract Time may be extended upon written notice and claim of the Contractor to the City as set forth in such Subparagraph and as further set forth herein. It is, however, expressly agreed that the time for completion as stated in the Contract Documents includes due allowance for calendar days on which work cannot be performed out-of-doors.

Furthermore, in addition to the notice requirements set forth in the aforesaid Subparagraph 8.1.5, the Contractor agrees that it shall provide written notice to the City on the day of any adverse weather not anticipated and for which a request for a time extension has been, or will be, made. Said notice

shall state with particularity a description of the adverse weather as well as a description of the nature and extent of any delay caused by such weather. Receipt of this notice by the City is a condition precedent to the submission of any claim for an extension of time as provided by Subparagraph 8.1.5. Furthermore, as required by Subparagraph 8.1.5, the Contractor shall submit a written claim for extension of time within seven (7) days after the occurrence of the adverse weather and such claim shall be supported by such documentation including, but not limited to, official weather reports, as the City may require. To the extent that any of the terms and conditions set forth in this paragraph are in conflict with any of the terms and conditions of Subparagraph 8.1.5 as identified herein, the terms and conditions of this paragraph shall govern and control.

ARTICLE IX

SUBCONTRACTORS

9.1 Definition

9.1.1 A Subcontractor is an entity which has a direct contract with the Contractor to perform a portion of the Work.

9.2 Award of Subcontracts

9.2.1 Upon execution of the Contract, the Contractor shall furnish the City, in writing, the names of persons or entities proposed by the Contractor to act as a Subcontractor on the Project. The City shall promptly reply to the Contractor, in writing, stating any objections the City may have to such proposed Subcontractor. The Contractor shall not enter into a Subcontract with a proposed Subcontractor with reference to whom the City has made timely objection. The Contractor shall not be required to subcontract with any party to whom the Contractor has objection.

9.2.2 All subcontracts shall afford the Contractor rights against the Subcontractor which correspond to those rights afforded to the City against the Contractor herein, including those rights afforded to the City by Subparagraph 12.2.1 below.

9.2.3 All subcontracts shall comply with the requirements of Paragraph 7.4 above.

ARTICLE X

CHANGES IN THE WORK

10.1 Changes Permitted

10.1.1 Changes in the Work within the general scope of this Contract, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Contract, by Change Order or by Field Order.

10.1.2 Changes in the Work shall be performed under applicable provisions of this Contract and the Contractor shall proceed promptly with such changes.

10.2 Change Order Defined

10.2.1 Change Order shall mean a written order to the Contractor executed by the City, issued after execution of this Contract, authorizing and directing a change in the Work or an adjustment in

the Contract Price or the Contract Time, or any combination thereof. The Contract Price and the Contract Time may be changed only by Change Order.

10.3 Changes in the Contract Price

10.3.1 Any change in the Contract Price resulting from a Change Order shall be determined as follows by mutual agreement between the City and the Contractor as evidenced by (1) the change in the Contract Price being set forth in the Change Order, (2) such change in the Contract Price, together with any conditions or requirements related thereto, being initialed by both parties and (3) the Contractor's execution of the Change Order.

10.3.2 If unit prices are provided in the Contract, and if the quantities contemplated are so changed in a proposed Change Order that application of such unit prices to the quantities of Work proposed will cause substantial inequity to the City or to the Contractor, the applicable unit prices shall be equitably adjusted.

10.4 Effect of Executed Change Order

10.4.1 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the City for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order.

10.5 Notice to Surety; Consent

10.5.1 The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval are required by the Contractor's surety or by law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the City that the surety has been notified of and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

ARTICLE XI

UNCOVERING AND CORRECTING WORK

11.1 Uncovering Work

11.1.1 If any of the Work is covered contrary to the City's request or to any provisions of this Contract, it shall, if required by the City, be uncovered for the City's inspection and shall be properly replaced at the Contractor's expense without change in the Contract Time.

11.1.2 If any of the Work is covered in a manner not inconsistent with Subparagraph 11.1.1 above, it shall, if required by the City, be uncovered for the City's inspection. If such Work strictly conforms with the provisions of this Contract, costs of uncovering and proper replacement shall by Change Order be charged to the City. If such Work does not strictly conform with the provisions of this Contract, the Contractor shall pay the costs of uncovering and proper replacement.

11.2 Correcting Work

11.2.1 The Contractor shall immediately proceed to correct Work rejected by the City as defective or failing to conform to this Contract. The Contractor shall pay all costs and expenses associated with correcting such rejected Work, including any additional testing and inspections, and reimbursement to the City for services and expenses made necessary thereby, if any.

11.2.2 If within one (1) year after Substantial Completion of the Work any of the Work is found to be defective or not in accordance with this Contract, the Contractor shall correct it promptly upon receipt of written notice from the City. This obligation shall survive final payment by the City and termination of this Contract. With respect to Work first performed and completed after Substantial Completion, this one (1) year obligation to specifically correct defective and nonconforming Work shall be extended by the period of time which elapses between Substantial Completion and final completion of the subject Work.

11.2.3 Nothing contained in this Paragraph 11.2 shall establish any period of limitation with respect to other obligations which the Contractor has under this Contract. Establishment of the one (1) year time period in Subparagraph 11.2.2 relates only to the duty of the Contractor to specifically correct the Work.

11.3 City May Accept Defective or Nonconforming Work

11.3.1 If the City chooses to accept defective or nonconforming Work, the City may do so. In such event, the Contract Price shall be reduced by the greater of (a) the reasonable cost of removing and correcting the defective or nonconforming Work, and (b) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the City for its acceptance of defective or nonconforming Work, the Contractor shall, upon written demand from the City, pay the City such remaining compensation for accepting defective or nonconforming Work.

ARTICLE XII

CONTRACT TERMINATION

12.1 Termination by the Contractor

12.1.1 If the Work is stopped for a period of ninety (90) days by an order of any court or other public authority, or as a result of an act of the government, through no fault of the Contractor or any person or entity working directly or indirectly for the Contractor, the Contractor may, upon ten (10) days' written notice to the City, terminate performance under this Contract and recover from the City payment for the actual reasonable expenditures of the Contractor (as limited in Subparagraph 10.3.2 above) for all Work executed and for materials, equipment, tools, construction equipment and machinery actually purchased or rented solely for the Work, less any salvage value of any such items.

12.1.2 If the City shall persistently or repeatedly fail to perform any material obligation to the Contractor for a period of fifteen (15) days after receiving written notice from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance under this Contract by written notice to the City. In such event, the Contractor shall be entitled to recover from the City as though the City had terminated the Contractor's performance under this Contract for convenience pursuant to Subparagraph 12.2.1 hereunder.

12.2 Termination by the City

12.2.1 For Convenience

12.2.1.1 The City may for any reason whatsoever terminate performance under this Contract by the Contractor for convenience. The City shall give written notice of such termination to the Contractor specifying when termination becomes effective.

12.2.1.2 The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Contractor to assign the Contractor's right, title and interest under terminated orders or subcontracts to the City or its designee.

12.2.1.3 The Contractor shall transfer title and deliver to the City such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

12.2.1.4

(a) The Contractor shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Contractor an amount derived in accordance with sub-paragraph (c) below.

(b) The City and the Contractor may agree to the compensation, if any, due to the Contractor hereunder.

(c) Absent agreement to the amount due to the Contractor, the City shall pay the Contractor the following amounts:

(i) Contract prices for labor, materials, equipment and other services accepted under this Contract;

(ii) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

(iii) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Subparagraph 12.2.1.2 of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 12.2.1 shall not exceed

the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

12.2.2 **For Cause**

12.2.2.1 If the Contractor persistently or repeatedly refuses or fails to prosecute the Work in a timely manner, supply enough properly skilled workers, supervisory personnel or proper equipment or materials, or if it fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a material provision of this Contract, then the City may by written notice to the Contractor and the surety, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the Project Site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may proceed to carry out the remedies necessary to finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

12.2.2.2 If the unpaid balance of the Contract Price exceeds the cost of finishing the Work, including compensation for additional services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the City. This obligation for payment shall survive the termination of the Contract.

12.2.2.3 In the event the employment of the Contractor is terminated by the City for cause pursuant to Subparagraph 12.2.2 and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a termination for convenience under Subparagraph 12.2.1 and the provisions of Subparagraph 12.2.1 shall apply.

ARTICLE XIII

INSURANCE

13.1 Insurance Requirements

13.1.1 Prior to beginning Work on the Project, and at all times that this Agreement is in force, the Contractor shall obtain, maintain and furnish certificates from licensed insurance companies doing business in the State of Georgia with an A.M. Best Rating A-6 or higher and acceptable to the City for the minimum amounts or levels of insurance described in EXHIBIT K, INSURANCE REQUIREMENTS attached hereto and incorporated herein.

13.1.2 All insurance shall contain a provision that the coverage afforded will not be cancelled, materially changed, or renewal refused until at least thirty (30) days' prior written notice has been given to the City. All such insurance shall remain in effect until final payment is made and the Project is accepted by the City. If the Contractor receives notice of non-renewal or material adverse change of any of the required coverage, the Contractor shall promptly advise the City in writing. Failure of the Contractor to promptly notify the City on non-renewal or material adverse change of any of the required coverage terminates the Agreement as of the date that the Contractor should have given notification to the City.

13.1.3 If the City has any objections to the coverage afforded by or provisions of the insurance required to be purchased and maintained by the Contractor, the City will notify the Contractor thereof within twenty (20) days of the date of delivery of such certificates to the City.

13.1.4 The Contractor shall provide to the City such additional information in respect of insurance

provided by it as the City may reasonably request. The right of the City to review and comment on certificates of insurance is not intended to relieve the Contractor of his responsibility to provide insurance coverage as specified nor to relieve the Contractor of his liability for any claims which might arise.

13.1.5 The Contractor agrees to require its Subcontractors to obtain insurance complying with the requirements the requirements of the Contract Documents.

ARTICLE XIV

DISPUTES

14.1 Mediation

14.1.1 No civil action with respect to any dispute, claim or controversy arising out of or relating to this Contract may be commenced without first giving fourteen (14) calendar days written notice to Sandy Springs of the claim and the intent to initiate a civil action. Within the notice period and prior to the commencement of a civil action, either Sandy Springs or the Contractor may elect to submit the matter for mediation. Either Sandy Springs or the Contractor may exercise the right to submit the matter for mediation by providing the other party with a written demand for mediation setting forth the subject of the dispute. The parties will cooperate with one another in selecting a mediator and in scheduling the mediation proceedings. Venue for the mediation will be in Sandy Springs, Georgia or such other convenient location as the parties and the mediator may agree; provided, however, that any or all mediation proceedings may be conducted by teleconference with the consent of the mediator. The parties agree to mediate any dispute in good faith during the mediation period.

14.1.2 The recommendations of the mediator or understandings of the parties resulting from the mediation are non-binding until such time, if any, as they are agreed to in writing, signed by the parties. Any signed mediation agreement shall be binding upon the parties and may be entered in any court of competent jurisdiction and the award judicially enforced. All offers, promises, conduct and statements, whether oral or written, made in the course of the mediation by any of the parties, their agents, employees, experts and attorneys, and by the mediator or employees of any mediation service, are inadmissible for any purpose (including but not limited to impeachment) in any litigation or other proceeding involving the parties, provided that evidence that is otherwise admissible or discoverable shall not be rendered inadmissible or non-discoverable as a result of its use in the mediation. Inadmissibility notwithstanding, all written documents shall nevertheless be subject to the Georgia Open Records Act, O.C.G.A. Section 50-18-70 et seq.

14.1.3 No party may commence a civil action with respect to the matters submitted to mediation until after the completion of the initial mediation session, forty-five (45) calendar days after the date of filing the written request for mediation with the mediator or mediation service, or sixty (60) calendar days after the delivery of the written demand for mediation, whichever occurs first. Mediation may continue after the commencement of a civil action, if the parties so desire.

14.1.4 Each of the parties to the mediation shall bear its own costs, including attorneys' fees and expenses incurred directly or indirectly in connection with the mediation. Each party to the mediation shall share equally in the fees and expenses of the mediator. If any party shall fail to fully cooperate in the selection of a mediator in a timely fashion or fails to mediate in good faith, such party shall forfeit their right, if any, to recover attorney fees and costs in any litigation commenced in connection with this Contract. The statute of limitations, if any, on any causes of action which might arise in

connection with the enforcement or breach of this Contract shall be suspended and tolled, during the mediation period.

14.1.5 Work on the Project shall not be interrupted or delayed during any mediation proceeding except on written agreement by both parties.

ARTICLE XV

INDEPENDENT CONTRACTOR

15.1 Relationship between Contractor and City

15.1.1 The Contractor shall perform the services under this Agreement as an independent contractor and nothing contained herein shall be construed to be inconsistent with such relationship or status. Nothing in this Agreement shall be interpreted or construed to constitute the Contractor or any of its agents or employees to be the agent, employee or representative of the City. Inasmuch as the City and the Contractor are contractors independent of one another, neither has the authority to bind the other to any third person or otherwise to act in any way as the representative of the other, unless otherwise expressly agreed to in writing signed by both parties hereto. The Contractor agrees not to represent itself as the City's agent for any purpose to any party or to allow any employee or agent of the Contractor to do so, without specific prior written authorization from the City, and then only for the limited purpose stated in such authorization.

15.1.2 The Contractor shall assume full liability for any contracts or agreements that the Contractor enters into on behalf of the City without the express knowledge and prior written authorization of the City.

ARTICLE XVI

COVENANT AGAINST CONTINGENT FEES

16.1 Warranty by Contractor

16.1.1 Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for any fee, commission, percentage, brokerage or contingent fee, gift or other consideration, excepting bona fide employees maintained by Contractor for the purpose of securing business and that Contractor has not received any non-City fee related to this Agreement without the prior written consent of the City.

16.1.2 For breach or violation of this warranty, the City shall have the right to annul this Agreement without liability or at its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of any such fee, commission, percentage, brokerage or contingent fee, gift or other consideration.

ARTICLE XVII

MISCELLANEOUS

17.1 Governing Law

17.1.1 The Contract shall be administered and interpreted under the laws of the State of Georgia. Jurisdiction of litigation arising from this Agreement shall be in Georgia. If any part of this Agreement

is found to e in conflict with applicable laws, such part shall be inoperative, null and void insofar as it is in conflict with said laws, but the remainder of this Agreement shall be in full force and effect.

Whenever reference is made in the Agreement to standards or codes in accordance with which work is to be performed, the edition or revision of the standards or codes current on the effective date of this Agreement shall apply, unless otherwise expressly stated.

17.2 Successors and Assigns

17.2.1 The City and Contractor bind themselves, their successors, assigns and legal representatives to the other party hereto and to successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in this Contract. The Contractor shall not assign this Contract without written consent of the City.

17.3 Surety Bonds

17.3.1 The Contractor shall furnish separate performance and payment bonds to the City. Each bond shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds furnished by the Contractor shall be in form suitable to the City and shall be executed by a surety, or sureties, reasonably suitable to the City. Bonds shall be issued by a corporate surety appearing on the Treasury Department's most current list (Circular 570, as amended) and be authorized to do business in the State of Georgia. The date of the bond must not be prior to the date of the Agreement. If the Contractor is a partnership, all partners shall execute the bond.

It is mutually agreed by the parties hereto that if at any time after execution of this Agreement and the surety bonds for its faithful performance, the City shall deem the surety or sureties upon such bonds to be unsatisfactory, or if for any reason such bonds cease to be adequate to cover the performance of the Work, the Contractor shall, at its expense, within five (5) days after receipt of notice from the City to do so, furnish an additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the City. In such event, no further payment to the Contractor shall be deemed due under this Agreement until such new or additional security for the faithful performance of the Work shall be furnished in manner and form satisfactory to the City.

IN WITNESS WHEREOF, the parties hereto, acting through their duly authorized agents, have signed and sealed this Agreement.

CITY OF SANDY SPRINGS, GEORGIA

By:_____
John McDonough, City Manager

_____
Date of Execution

By:_____
Approve as to form, Assistant City Attorney

ATTEST:

By:_____
City Clerk

(SEAL)

_____
CONTRACTOR

_____
Date of Execution

By:_____
Name: _____
(typed or printed name)

_____
Title

ATTEST:

By:_____
Secretary for Corporation

(SEAL)

_____
Witness

Executed in quadruplicate originals of four (4).

EXHIBIT A
TO CONTRACT AGREEMENT

SCOPE OF SERVICES

The Contractor shall provide the necessary machinery, tools, apparatus, other means of construction, and all materials and labor specified in the Contract Documents or as necessary to complete the City of Sandy Springs Project T-6000, Ridgeview Middle School Sidewalk Project, Phase 2 as per the attached plans.

Unless otherwise directed, all work performed shall be in accordance with the Georgia Department of Transportation *Standard Specifications, Construction of Transportation Systems* (current edition). All materials used in the process of completion of the work included in the Contract will be furnished from Georgia Department of Transportation certified suppliers only.

There is no City furnished equipment to be installed by the Contractor.

EXHIBIT B
TO CONTRACT AGREEMENT
BASE BID SCHEDULE

ITEM No.	***ITEM DESCRIPTION***	***UNIT***	***QTY***		***UNIT PRICE***		***TOTAL PRICE***
150-1000	TRAFFIC CONTROL	LS	LS	$		$	
	(Unit Price in Words)						
210-0100	GRADING COMPLETE	LS	LS	$		$	
	(Unit Price in Words)						
441-0016	DRIVEWAY CONCRETE, 6 IN TK	SY	102	$		$	
	(Unit Price in Words)						
441-0017	REMOVE CONCRETE PAVEMENT	SY	83	$		$	
	(Unit Price in Words)						
441-0019	SAW CUT REMOVE EXIST SIDEWALK	LF	25	$		$	
	(Unit Price in Words)						
441-0104	CONCRETE SIDEWALK, 4 IN TK	SY	225	$		$	
	(Unit Price in Words)						
441-5009	SPECIAL DESIGN, CONCRETE ROLLED CURB	LF	36	$		$	
	(Unit Price in Words)						
441-5010	REMOVE CONCRETE CURB & GUTTER	LF	230	$		$	
	(Unit Price in Words)						

441-6012	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	EA	230	$		$	
	(Unit Price in Words)						
444-1000	SAWED JOINTS IN EXIST PAVEMENTS - PCC	LF	390	$		$	
	(Unit Price in Words)						
500-3107	CLASS A CONCRETE, RETAINING WALL	CY	30	$		$	
	(Unit Price in Words)						
511-1000	BAR REINF STEEL	LB	1500	$		$	
	(Unit Price in Words)						
515-2020	GALV STEEL PIPE HANDRAIL, 2 IN, ROUND, DESC: COLOR BLACK	LF	90	$		$	
	(Unit Price in Words)						
530-0105	WATERPROOFING	SY	30	$		$	
	(Unit Price in Words)						
608-3000	BRICK FACING	SF	540	$		$	
	(Unit Price in Words)						
643-8200	BARRIER FENCE (ORANGE), 4 FT	LF	420	$		$	
	(Unit Price in Words)						
670-9730	RELOCATE EXIST WATER METER, INCL BOX	EA	1	$		$	
	(Unit Price in Words)						

700-9300	SOD, FESCUE	SY	125	$		$	
	(Unit Price in Words)						
900-0042	2' DETECTABLE WARNINGS	EA	2	$		$	
	(Unit Price in Words)						
	TEMPORARY EROSION CONTROL						
163-0232	TEMPORARY GRASSING	AC	0.66	$		$	
	(Unit Price in Words)						
163-0235	TEMPORARY MULCH	TN	9.04	$		$	
	(Unit Price in Words)						
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TYPE C	LF	960	$		$	
	(Unit Price in Words)						
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	960	$		$	
	(Unit Price in Words)						
	PERMANENT EROSION CONTROL						
700-6910	PERMANENT GRASSING	AC	0.06	$		$	
	(Unit Price in Words)						
700-7000	AGRICUTURAL LIME	TN	0.06	$		$	
	(Unit Price in Words)						
700-8000	FERTILIZER MIXED GRADE	TN	0.05	$		$	
	(Unit Price in Words)						

700-8100	FERTILIZER NITROGEN CONTENT	LB	3.0	$		$	
	(Unit Price in Words)						
	Total Bid			*$*			
	Total Bid in Words			*$*			

=							

BID PRICE CERTIFICATION

In compliance with the attached Specification, the undersigned offers and agrees that if this Bid is accepted, by the City Council within one hundred and twenty (120) days of the date of Bid opening, that he will furnish any or all of the Items upon which Prices are quoted, at the Price set opposite each Item, delivered to the designated point(s) within the time specified in the Bid Schedule.

COMPANY_____

ADDRESS_____

AUTHORIZED

SIGNATURE_____

PRINT / TYPE NAME

_____

EXHIBIT C
TO CONTRACT AGREEMENT

REQUIRED CONTRACT PROVISIONS
FEDERAL AID CONSTRUCTION CONTRACTS

Not Applicable for this Contract

EXHIBIT D
TO CONTRACT AGREEMENT

NOTICE TO CONTRACTORS
COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

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

1. Compliance with Regulations: The Contractor will comply with the Regulations of the Department of Transportation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (Title 49, Code of Federal Regulations, Part 21, hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of the Contract.

2. Nondiscrimination: The Contractor, with regard to the work performed by it afterward and prior to completion of the contract work, will not discriminate on the ground of race, color, sex, or national origin in the selection and retention of subcontracts including procurements of materials and leases of equipment. The Contractor will not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when contract covers a program set forth in Appendix B of the Regulations. In addition, the Contractor will not participate either directly or indirectly in discrimination prohibited by 23 CFR 710.405 (b).

3. Solicitations for subcontracts, including procurements of materials and equipment: In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or 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, national origin or sex.

4. Information and Reports: The Contractor will provide all information and reports required by the Regulations, or orders and instructions issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Department of

Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Department of Transportation, or the Federal Highway Administration 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, the Department of Transportation shall impose such Contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

(a) withholding of payments to the Contractors under the Contract until the Contractor complies, and/or

(b) Cancellation, termination or suspension of the Contract, in whole or in part.

6. Incorporation of Provisions: The Contractor will include the provisions of paragraph (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, orders or instruction issued pursuant thereto. The Contractor will take such action with respect to any subcontract or procurement as the Department of Transportation 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 result of such direction, the Contractor may request the State to enter into such litigation to protect the interests of the State, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

EXHIBIT E
TO CONTRACT AGREEMENT

STANDARD FEDERAL EQUAL OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS
(EXECUTIVE ORDER 11246) (43 CFR 14895)

EXHIBIT F
TO CONTRACT AGREEMENT

CERTIFICATION OF SPONSOR
DRUG-FREE WORKPLACE

I hereby certify that I am a principle and duly authorized representative of _____, ("Contractor"), whose address is _____, _____, _____ _____, and I further certify that:

(1) The provisions of Section 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; and

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

(3) Each Subcontractor hired by Contractor shall be required to ensure that the subcontractor's employees are provided a drug-free workplace. Contractor shall secure from that subcontractor the following written certification: "As part of the subcontracting agreement with Contractor, _____ certifies to Contractor that a drug-free workplace will be provided for the Subcontractor's employees during the performance of this Agreement pursuant to paragraph (7) of subsection (b) of the Official Code of Georgia Annotated, Section 50-24-3"; and

(4) The undersigned will not engage in unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Agreement.

CONTRACTOR:

Date: _____ Signature: _____
Title: _____

EXHIBIT G
TO CONTRACT AGREEMENT

DBE REQUIREMENTS

Not Applicable to this project.

EXHIBIT H
TO CONTRACT AGREEMENT

CONTRACTOR
CERTIFICATION REGARDING DEBARMENT, SUSPENSION,
AND OTHER RESPONSIBILITY MATTERS
AND INSTRUCTIONS

I hereby certify that I am the _____ and duly authorized representative of the firm of _____ _____ , whose address is _____ _____ , and I certify that I have read and understand the attached instructions and that to the best of my knowledge and belief the firm and its representatives:

(a.) Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by the Georgia Department of Transportation and by any Federal department or agency;

(b.) I acknowledge that this certification is provided pursuant to Executive Order 12549 and 49 CFR Part 29 and that this firm agrees to abide by the rules and conditions set forth therein for any misrepresentation that would render this certification erroneous, including termination of this Agreement and other remedies available to the Georgia Department of Transportation and Federal Government.

(c.) I further acknowledge that this certificate is to be furnished to the Georgia Department of Transportation, in connection with the Prime Contractor Agreement involving participation of Federal-Aid Highway Funds, and is subject to applicable State and Federal laws, both criminal and civil.

Date _____
(Seal)

EXHIBIT I
TO CONTRACT AGREEMENT

LOWER TIER
CERTIFICATION REGARDING DEBARMENT, SUSPENSION,
AND OTHER RESPONSIBILITY MATTERS
AND INSTRUCTIONS

I hereby certify that I am the _____ and duly authorized representative of the firm of _____ _____ , whose address is _____ _____, and I certify that I have read and understand the attached instructions and that to the best of my knowledge and belief the firm and its representatives:

(d.) Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by the Georgia Department of Transportation and by any Federal department or agency;

(e.) I acknowledge that this certification is provided pursuant to Executive Order 12549 and 49 CFR Part 29 and that this firm agrees to abide by the rules and conditions set forth therein for any misrepresentation that would render this certification erroneous, including termination of this Agreement and other remedies available to the Georgia Department of Transportation and Federal Government.

(f.) I further acknowledge that this certificate is to be furnished to the Georgia Department of Transportation, in connection with the Prime Contractor Agreement involving participation of Federal-Aid Highway Funds, and is subject to applicable State and Federal laws, both criminal and civil.

Date _____
(Seal)

INSTRUCTIONS

Instructions for Certification

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion --- Lower-Tier Covered Transactions

This certification applies to subcontractors, material suppliers, vendors and other lower tier participants.

1. By signing and submitting this proposal, the prospective lower-tier participant is providing the certification set out in page 29.

2. The certification on page 29, 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.

3. The prospective lower tier participant shall provide immediate written notice to the person to whom the proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous due to changed circumstances.

4. The terms "covered transaction", "debarred", "suspended", "ineligible", "lower tier covered transaction", "participant", "person", "primary covered transaction", "principal", "proposal", and "voluntarily excluded", as used in these instructions and the certification, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal/contract that should the proposed covered transaction be entered into, it shall not knowingly enter into a lower tier covered transaction with a person/firm 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.

6. The prospective lower tier participant further agrees by submitting this proposal/contract that it will include the 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.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its

principals. Each participant may, but is not required to, check the Non-procurement List

8. 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 a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph five of these instructions, if the 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 pursue available remedies, including suspension and/or debarment.

EXHIBIT J
TO CONTRACT AGREEMENT

CERTIFICATION OF CONTRACTOR
GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT

I hereby certify that I am a principle and duly authorized representative of _____, ("Contractor"), whose address is _____, _____, _____ _____.

Contractor hereby agrees to comply with all applicable provisions and requirements of the Georgia Security and Immigration Compliance Act of 2006 (the "Act"), as codified in O.C.G.A. Sections 13-10-90 and 13-10-91 and regulated in Chapter 300-10-1 of the Rules and Regulations of the State of Georgia, "Public Employers, Their Contractors and Subcontractors Required to Verify New Employee Work Eligibility Through a Federal Work Authorization Program," accessed at *http://www.dol.state.ga.us*, as further set forth below.

Contractor agrees to verify the work eligibility of all of newly hired employees through the U.S. Department of Homeland Security's *Employment Eligibility Verification (EEV) / Basic Pilot Program*, accessed through the Internet at *https://www.vis-dhs.com/EmployerRegistration*, in accordance with the provisions and timeline found in O.C.G.A. 13-10-91 and Rule 300-10-1-.02 of the Rules and Regulations of the State of Georgia. As of July 1, 2007, the verification requirement applies to contractors and subcontractors with five-hundred (500) or more employees.

Contractor understands that the contractor and subcontractor requirements of the Act apply to contracts for, or in connection with, the physical performance of services within the State of Georgia.

Contractor understands that the following contract compliance dates set forth in the Act apply to the Contract Agreement, pursuant to O.C.G.A. 13-10-91:

On or after July 1, 2007, to public employers, contractors, or subcontractors of 500 or more employees;

On or after July 1, 2008, to public employers, contractors, or subcontractors of 100 or more employees; and

On or after July 1, 2009, to all other public employers, their contractors, and subcontractors.

To document the date on which the Act is applicable to Contractor, and to document Contractor's compliance with the Act, the undersigned agrees to initial one of the three (3) lines below indicating the employee number category applicable to Contractor, and to submit the indicated affidavit with the Contract Agreement if the Contractor has 500 or more employees.

Contractor has:

____ 500 or more employees [Contractor must register with the *Employment/Eligibility Verification/Basic Pilot Program* and begin work eligibility verification on July 1, 2007];

____ 100-499 employees [Contractor must register with the *Employment Eligibility Verification/Basic Pilot Program* and begin work eligibility verification by July 1, 2008]; or

____ 99 or fewer employees [Contractor must begin work eligibility verification by July 1, 2009].

Contractor further agrees to require O.C.G.A. Sections 13-10-90 and 13-10-91 compliance in all written agreements with any subcontractor employed by Contractor to provide services connected with the Contract Agreement, as required pursuant to O.C.G.A. 13-10-91.

Contractor agrees to obtain from any subcontractor that is employed by Contractor to provide services connected with the Contract Agreement, the subcontractor's indication of the employee number category applicable to the subcontractor.

Contractor agrees to secure from any subcontractor engaged to perform services under this Contract an executed "Subcontractor Affidavit," as required pursuant to O.C.G.A. 13-10-91 and Rule 300-10-1-.08 of the Rules and Regulations of the State of Georgia, which rule can be accessed at *http://www.dol.state.ga.us*.

Contractor agrees to maintain all records of the subcontractor's compliance with O.C.G.A. Sections 13-10-90 and 13-10-91 and Chapter 300-10-1 of the Rules and Regulations of the State of Georgia.

CONTRACTOR:

Date: _____ Signature: _____

Title: _____

EXHIBIT K

TO CONTRACT AGREEMENT

INSURANCE REQUIREMENTS

Within 10 days of Notice of Award, and at all times that this Contract is in force, the Contractor shall obtain, maintain and furnish the City Certificates of Insurance from licensed companies doing business in the State of Georgia with an A.M. Best Rating A-6 or higher and acceptable to the City covering:

1. Statutory Workers' Compensation Insurance
   (a) Employers Liability:

Bodily Injury by Accident - $100,000 each accident
Bodily Injury by Disease - $500,000 policy limit
Bodily Injury by Disease - $100,000 each employee

2. Comprehensive General Liability Insurance
   (a) $1,000,000 limit of liability per occurrence for bodily injury and property damage Owner's and Contractor's Protective
   (b) Blanket Contractual Liability
   (c)I Blanket "X", "C", and "U"
   (d) Products/Completed Operations Insurance
   (e) Broad Form Property Damage
   (f) Personal Injury Coverage
3. Automobile Liability
   (a) $1,000,000 limit of liability
   (b) Comprehensive form covering all owned, non-owned and hired vehicles
4. Umbrella Liability Insurance
   (a) $1,000,000 limit of liability
   (b) Coverage at least as broad as primary coverage as outlined under Items 1, 2, and 3 above

5. The City of Sandy Springs, Georgia, and its subcontractors and affiliated companies, their officers, directors, employees shall be named on the Certificates of Insurance as additional insured and endorsed onto the policies for Comprehensive General Liability, Automobile Liability and Umbrella Liability insurance maintained pursuant to this Contract in connection with liability of the City of Sandy Springs and their affiliated companies and their officers, directors and employees arising out of Contractor's operations. Copies of the endorsements shall be furnished to the City prior to execution of the contract. Such insurance is primary insurance and shall contain a Severability of Interest clause as respects each insured. Such policies shall be non-cancelable except on thirty (30) days written notice to the City. Any separate insurance maintained in force by the additional insured named above shall not contribute to the insurance extended by Contractor's insurer(s) under this additional insured provision.

Certificate Holder should read: The City of Sandy Springs, 7840 Roswell Road, Building-500, Sandy Springs, Georgia 30350.

EXHIBIT L
TO CONTRACT AGREEMENT

SPECIAL PROVISIONS

First Use Date: January 1, 2007

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
SPECIAL PROVISION
Utility Conflicts

Utility companies having known facilities that conflict with the construction of this project will be directed by the Department to adjust or relocate their facilities and will be notified of the contract award.

Conform to all the requirements of the Specifications as they relate to cooperation with utility owners and the protection of utility installations that exist on the project. Refer to the requirements of Section 107, Legal Regulations and Responsibility to the Public, with particular attention to Subsection 107.21.

Coordinate The Work with any work to be performed by others in any right of way clearance and arrange a schedule of operations that will allow for completion of the Project within the specified contract time. Where stage construction is required, notify the utility owner when each stage of work is completed and the site is available for utility work to proceed.

Information concerning utility facilities known to exist within the project limits, including the list of owners, is shown on the plans.

Under Georgia Code Section 32-6-171, utilities are required to remove or relocate their facilities. The Department is required to give the utility at least 60 days written notice directing the removal and relocation, and the utility is required to begin removal within a reasonable time thereafter.

Utility Owners that are under agreement with the Department, as listed on the Office of Utilities website at http://www.dot.state.ga.us/dot/operations/utilities/index.shtml, are liable to the Contractor for his cost for delays to construction that are due to the utilities' failure to clear conflicts within the time submitted by the Utility Owner in the Utility Adjustment Schedule as approved by the Department. Any modifications to the approved Utility Adjustment Schedule shall require review and approval by the Department, the Utility Owner, and the Contractor. Utility facilities originally permitted within State Rights of Way are similarly liable to the Department and Contractor for extraordinary costs or damages. The Contractor may bill the utility company directly for any costs or delays as described in the agreement between the Department and the utility company. Such bill shall be sufficiently detailed to allow the utility company to verify that the charges are accurate and properly attributable to delays in relocation of their facilities. Upon request, copies of all agreements with utility companies having facilities on this project will be made available for examination by the Contractor at the

First Use Date: January 1, 2007

Department's District Office. Utility Adjustment Schedules, when submitted to the Department by the utilities, will be made available to the Contractor upon request at the Department's District Office unless furnished by Contracts Administration at the Plans Sales window or may be included with the Utility Special Provision in the Contract Proposal on select projects.

In accordance with Subsection 105.06 of the Specifications, the Department is not liable

for payment of any claims due to utility delays, inconvenience or damage sustained by the Contractor due to interference of any utilities or appurtenances, or the operation of moving them. In accordance with Subsection 107.21.G delays by utilities will continue to be considered by the Department in charging Contract Time. For purposes of applying provisions of this paragraph, railroads and the Metropolitan Atlanta Rapid Transit Authority (MARTA) are considered utilities.

Rev. July 1, 2003
April 15, 2004
October 11, 2005
October 25, 2005
February 10, 2006
April 20, 2006
May 8, 2007
Revised September 18, 2007

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
SPECIAL PROVISION
Section 150—Traffic Control

Add the following:

150.01 GENERAL

This section as supplemented by the Plans, Specifications, and Manual on Uniform Traffic Control Devices (MUTCD) shall be considered the Temporary Traffic Control (TTC) Plan. Activities shall consist of furnishing, installing, maintaining, and removing necessary traffic signs, barricades, lights, signals, cones, pavement markings and other traffic control devices and shall include flagging and other means for guidance and protection of vehicular and pedestrian traffic through the Work Zone. This Work shall include both maintaining existing devices and installing additional devices as necessary in construction work zones.

When any provisions of this Specification or the Plans do not meet the minimum requirements of the MUTCD, the MUTCD shall control. The 2003 Edition of the MUTCD shall be in effect for the duration of the project.

The Worksite Traffic Control Supervisor (WTCS) shall have a copy of Part VI of the MUTCD on the job site. Copies of the current MUTCD may be obtained from the FHWA web page at *http://mutcd.fhwa.dot.gov*.

A. WORKER SAFETY APPAREL

All workers exposed to the risks of moving roadway traffic or construction equipment shall wear high-visibility safety apparel meeting the requirements of International Safety Equipment Association (ISEA) American National Standard for High-Visibility Safety Apparel, or equivalent revisions, and labeled as ANSI-2004 Class 2 or 3 risk exposure.

B. WORKSITE TRAFFIC CONTROL SUPERVISOR

ALL HIGHWAYS (ADDITIONAL REQUIREMENTS BELOW FOR INTERSTATES): The Contractor shall designate a qualified individual as the Worksite Traffic Control Supervisor (WTCS) who shall be responsible for selecting, installing and maintaining all traffic control devices in accordance with the Plans, Specifications, Special Provisions and the MUTCD. A written resume documenting the experience and credentials of the WTCS shall be submitted and accepted by the Engineer prior to beginning any work that involves traffic control. The WTCS shall be available on a twenty-four (24) hour basis to perform his duties. If the work requires traffic control activities to be performed during the daylight and nighttime hours it may be necessary for the Contractor to designate an alternate WTCS. An alternate WTCS must meet the same requirements and qualifications as the primary WTCS and be accepted by the Engineer prior to beginning any traffic control duties. The Worksite Traffic Control Supervisor's traffic control responsibilities shall have priority over all other assigned duties.

As the representative of the Contractor, the WTCS shall have full authority to act on behalf

of the Contractor in administering the TTC Plan. The WTCS shall have appropriate training in safe traffic control practices in accordance with Part VI of the MUTCD. In addition to the WTCS all other individuals making decisions regarding traffic control shall meet the training requirements of the Part VI of the MUTCD.
The WTCS shall supervise the initial installation of traffic control devices. The Engineer prior to the beginning of construction will review the initial installation. Modifications to traffic control devices as required by sequence of operations or staged construction shall be reviewed by the WTCS.
The WTCS shall be available on a full-time basis to maintain traffic control devices with access to all personnel, materials, and equipment necessary to respond effectively to an emergency situation within forty-five (45) minutes of notification of the emergency.
The WTCS shall regularly perform inspections to ensure that traffic control is maintained. Unless modified by the special conditions or by the Engineer, routine deficiencies shall be corrected within a twenty-four (24) hour period. Failure to comply with these provisions shall be grounds for dismissal from the duties of WTCS and/or removal of the WTCS from the project. Failure of the WTCS to execute his duties shall be considered as nonperformance under Subsection 150.08.
The Engineer will periodically review the work for compliance with the requirements of the TTC plan.
On projects where traffic control duties will not require full time supervision, the Engineer may allow the Contractor's Project Superintendent to serve as the WTCS as long as satisfactory results are obtained.

CERTIFIED WORKSITE TRAFFIC CONTROL SUPERVISOR
ADDITIONAL REQUIREMENTS FOR INTERSTATE AND LIMITED ACCESS HIGHWAYS: In addition to the requirements above, the WTCS shall have a minimum of one year experience directly related to work site traffic control in a supervisory or responsible capacity. The WTCS shall be currently certified by the American Traffic Safety Services Association (ATSSA) Work Site Traffic Supervisor Certification program or the National Safety Council Certification program.
Any work performed on the interstate or limited access highway right-of-way that requires traffic control shall be supervised by the Certified Worksite Traffic Control Supervisor. No work requiring traffic control shall be performed unless the certified WTCS is on the worksite. Failure to maintain a Certified Worksite Traffic Control Supervisor on the work will be considered as non-performance under Subsection 150.08.

The WTCS shall perform, as a minimum, weekly traffic control inspections on all interstate and limited access highways. The inspection shall be reported to the Engineer on a TC-1 report. The Engineer will furnish a blank copy of the TC-1 report to the Contractor prior to the beginning of any work on the interstate or limited access right-of-way.

C. TRAFFIC CONTROL DEVICES
All traffic control devices used during the construction of a project shall meet the Standards utilized in the MUTCD, and shall comply with the requirements of these Specifications, Project Plans, and Special Provisions. All devices shall be tested at NCHRP Test Level III. Reference is made to Subsections 104.05, 107.07, and 107.09.

D. REFLECTORIZATION REQUIREMENTS

All rigid fluorescent orange construction warning signs (black on fluorescent orange) shall meet the reflectorization and color requirements of ASTM Type VII, VIII, IX or X regardless of the mounting height.

Portable signs, which have flexible sign blanks, shall meet the reflectorization and color requirements of ASTM Type VI.

Warning signs (W3-1a) for stop conditions that have rumble strips located in the travelway shall be reflectorized with ASTM Type IX fluorescent yellow sheeting.

All other signs shall meet the requirements of ASTM Type III or IV, except for “Pass With Care” and “Do Not Pass” signs, which may be ASTM Type I unless otherwise specified.

CHANNELIZATION DEVICES: Channelization devices shall meet the requirements of ASTM Type III or IV high intensity sheeting.

E. IMPLEMENTATION REQUIREMENTS

No work shall be started on any project phase until the appropriate traffic control devices have been placed in accordance with the Project requirements. Changes to traffic flow shall not commence unless all labor, materials, and equipment necessary to make the changes are available on the Project.

When any shift or change is made to the location of traffic or to the flow patterns of traffic, the permanent safety features shall be installed and fully operational before making the change. If staging or site conditions prevent the installation of permanent features then the equivalent interim devices shall be utilized.

Any section of the work that is on new location shall have all permanent safety features installed and fully operational before the work is opened to traffic. Safety features shall include but are not limited to the following items:

1. Guardrail including anchors and delineation
2. Impact attenuators
3. Traffic signals
4. Warning devices
5. Pavement markings including words, symbols, stop bars, and crosswalks
6. Roadway signs including regulatory, warning, and guide

Outdoor lighting shall be considered as a safety feature for welcome centers, rest areas, and weigh station projects. For typical roadway type projects new street lighting is not considered a safety feature unless specifically noted in the plans or in the special conditions.

F. MAINTENANCE OF TRAFFIC CONTROL DEVICES

Traffic control devices shall be in acceptable condition when first erected on the project and shall be maintained in accordance with Subsection 104.05 throughout the construction period. All unacceptable traffic control devices shall be replaced within 24 hours. When not in use, all traffic control devices shall be removed, placed or covered so as not to be visible to traffic. All construction warning signs shall be removed within seven calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten days after completion of the Work, the Department shall have the right to remove such devices, claim possession thereof, and deduct the cost of such removal from any monies due, or which may become due, the Contractor.

G. TRAFFIC INTERRUPTION RESTRICTIONS

The Department reserves the right to restrict construction operations when, in the opinion of the Engineer, the continuance of the Work would seriously hinder traffic flow, be needlessly disruptive or unnecessarily inconvenience the traveling public. The Contractor shall suspend and/or reschedule any work when the Engineer deems that conditions are unfavorable for continuing the Work.

Advanced notification requirements to the Contractor to suspend work will be according to the events and the time restrictions outlined below:

Incident management No advanced notice required
Threatening/Inclement weather 24 hours
Holidays. sporting events, Three (3) calendar days
unfavorable conditions

If the work is suspended, the Contractor may submit a request for additional contract time as allowed under Section 108. The Department will review the request and may grant additional contract time as justified by the impact to the Contractor's schedule. Compensation for loss of productivity, rescheduling of crews, rental of equipment or delays to the Contractor's schedule will not be considered for payment. Additional contract time will be the only consideration granted to the Contractor.

H. SEQUENCE OF OPERATIONS

Any Sequence of Operations provided in this Contract in conjunction with any staging details which may be shown in the plans, is a suggested sequence for performing the Work. It is intended as a general staging plan for the orderly execution of the work while minimizing the impact on the mainline, cross-streets and side streets. The Contractor shall develop detailed staging and temporary traffic control plans for performing specific areas of the Work including but not limited to all traffic shifts, detours, bridge widenings, paces, or other activities that disrupt traffic flow. The Engineer may require detailed staging and TTC plans for lane closures. These plans shall be submitted for approval at least two weeks prior to the scheduled date of the activity. Activities that have not been approved at least seven (7) days prior to the scheduled date shall be rescheduled.

Where traffic is permitted through the work area under stage construction, the Contractor may choose to construct, at no additional expense to the Department, temporary on-site bypasses or detours in order to expedite the work. Plans for such temporary bypasses or detours shall be submitted to the Engineer for review and approval 30 calendar days prior to the proposed construction. Such bypasses or detours shall be removed promptly when, in the opinion of the Engineer, they are no longer necessary for the satisfactory progress of the Work. Bypasses and detours shall meet the minimum requirements of Section 150.02.B.4.

As an option to the Sequence of Operations in the Contract, the Contractor may submit an alternative Sequence of Operations for review and approval. The Department may consider the Contractor's alternate Sequence of Operations as a Value Engineering Proposal as defined by Section 104.08. A twenty calendar day lead time for the Department's review shall be given to this submission so that a decision on its acceptability can be made and presented at the Preconstruction Conference. Insufficient lead time or no submission by the Contractor shall be construed as acceptance of the Sequence of Operations outlined in the Contract and the willingness of the Contractor to execute this as-bid plan.

The Department will not pay, or in any way reimburse the Contractor for claims arising from the Contractor's inability to perform the Work in accordance with the Sequence of

Operations provided in the Contract or from an approved Contractor alternate.
The Contractor shall secure the Engineer's approval of the Contractor's proposed plan of operation, sequence of work and methods of providing for the safe passage of vehicular and pedestrian traffic before it is placed in operation. The proposed plan of operation shall supplement the approved traffic control plan. Any major changes to the approved TTC plan, proposed by the Contractor, shall be submitted to the Department for approval.
Some additional traffic control details will be required prior to any major shifts or changes in traffic. The traffic control details shall include, but not be limited to, the following:
1. A detailed drawing showing traffic locations and laneage for each step of the change.
2. The location, size, and message of all signs required by the MUTCD, Plan, Special Provisions, and other signs as required to fit conditions. Any portable changeable message signs used shall be included in the details.
3. The method to be used in, and the limits of, the obliteration of conflicting lines and markings.
4. Type, location, and extent of new lines and markings.
5. Horizontal and vertical alignment and super elevation rates for detours, including cross-section
and profile grades along each edge of existing pavement.
6. Drainage details for temporary and permanent alignments.
7. Location, length, and/or spacing of channelization and protective devices (temporary barrier, guardrail, barricades, etc.)
8. Starting time, duration and date of planned change.
9. For each traffic shift, a paving plan, erection plan, or work site plan, as appropriate, detailing workforce, materials, and equipment necessary to accomplish the proposed work. This will be the minimum resource allocation required in order to start the work.
A minimum of three copies of the above details shall be submitted to the Engineer for approval at least 14 days prior to the anticipated traffic shift. The Contractor shall have traffic control details for a traffic shift, which has been approved by the Engineer prior to commencement of the physical shift. All preparatory work relative to the traffic shift, which does not interfere with traffic, shall be accomplished prior to the designated starting time. The Engineer and the Contractor's representative will verify that all conditions have been met prior to the Contractor obtaining materials for the actual traffic shift.

I. COMPLIANCE DATES FOR PROVISIONS OF THE MUTCD:
Federal law requires that traffic control devices (temporary or permanent) installed on new highway or bikeway construction or reconstruction shall be compliant with the latest version of the MUTCD before the road is opened to the public for unrestricted travel. The latest version of the MUTCD is the 2003 Edition, which the Georgia Department of Transportation has adopted. However, the FHWA, in the introduction to the MUTCD has established alternate compliance dates for some of the new provisions of the 2003 MUTCD. Below is a list of those compliance dates. The Department may decide to require contractors to implement some or all of these provisions at an earlier date than the compliance dates noted below. However, notice will be given in advance of the letting date if these provisions are to be implemented prior to the compliance dates. The contractor may also decide to implement the new provisions in the 2003 MUTCD earlier than required by the compliance dates below.
The target dates established by the FHWA shall be as follows:

Section 6D.01 Pedestrian Considerations – all new provisions for pedestrian accessibility – 5 years from the effective date of the Final Rule for the 2003 MUTCD.
Section 6D.02 Accessibility Considerations – 5 years from the effective date of the Final Rule for the 2003 MUTCD.
Section 6D.03 Worker Safety Considerations – high-visibility apparel requirements – 3 years from the effective date of the Final Rule for the 2003 MUTCD.
Section 6E.02 High-Visibility Safety Apparel – high-visibility apparel requirements for flaggers – 3 years from the effective date of the Final Rule for the 2003 MUTCD.
The effective date of the Final Rule for the 2003 MUTCD is December 22, 2003.

150.02 TEMPORARY TRAFFIC CONTROL (TTC) ZONES:
A. DEVICES AND MATERIALS:
In addition to the other provisions contained herein, work zone traffic control shall be accomplished using the following means and materials:

1. Portable Advance Warning Signs
Portable advance warning signs shall be utilized as per the requirements of the temporary traffic control plans. All signs shall meet the requirements of the MUTCD and shall be NCHRP 350 crashworthy compliant.

2. Arrow Panels
Portable sequential or flashing arrow panels as shown in the Plans or Specifications for use on Interstate or multi-lane highway lane closure only, shall be a minimum size of 48” high by 96” wide with not less than 15 lamps used for the arrow. The arrow shall occupy virtually the entire size of the arrow panel and shall have a minimum legibility distance of one mile. The minimum legibility distance is that distance at which the arrow panel can be comprehended by an observer on a sunny day, or clear night. Arrow panels shall be equipped with automatic dimming features for use during hours of darkness. The arrow panels shall also meet the requirements for a Type C panel as shown in the MUTCD. The sequential or flashing arrow panels shall not be used for lane closure on two-lane, two-way highways when traffic is restricted to one-lane operations in which case, appropriate signing, flaggers and when required, pilot vehicles will be deemed sufficient.
The sequential or flashing arrow panels shall be placed on the shoulder at or near the point where the lane closing transition begins. The panels shall be mounted on a vehicle, trailer, or other suitable support. Vehicle mounted panels shall be provided with remote controls. Minimum mounting height shall be seven feet above the roadway to the bottom of the panel, except on vehicle mounted panels which should be as high as practical.
For emergency situations, arrow display panels that meet the MUTCD requirements for Type A or Type B panels may be used until Type C panels can be located and placed at the site. The use of Type A and Type B panels shall be held to the minimum length of time possible before having the Type C panel(s) in operation. The Engineer shall determine when conditions and circumstances are considered emergencies. The Contractor shall notify the Engineer, in writing, when any non-specification arrow display panel(s) is being used in the work.

3. Portable Changeable Message Signs
Portable changeable message signs meeting the requirements of Section 632 and the MUTCD. Any PCMS in use that is not protected by positive barrier protection shall be delineated by a minimum of three drums that meet the requirement of Section 150.05.A.1. The drum spacing shall not exceed a maximum of ten (10') feet as shown in Detail 150-PCMS. When the PCMS is within twenty (20') feet of the opposing traffic flow, the trailing end of the PCMS shall be delineated with a minimum of three drums spaced in the same manner as the approach side of the PCMS.
When not in use the PCMS shall be removed from the roadway unless protected by positive barrier protection. If the PCMS is protected by positive barrier protection the sign panel shall be turned away from traffic when not in use.

4. Channelization Devices
Channelization devices shall meet the standards of the MUTCD and Subsection 150.05.

5. Temporary Barrier
Temporary barrier shall meet the requirements of Sections 620.

6. Temporary Traffic Signals
Temporary traffic signals shall meet the requirements of Section 647 and the MUTCD.

7. Pavement Marking
Pavement marking incorporated into the work shall comply with Subsections 150.04.A and 150.04.B.

8. Portable Temporary Traffic Control Signals
The use off Portable Temporary Traffic Control Signals shall meet the following minimum requirements:
Only two-lane two-way roadways will be allowed to utilize Portable Temporary Traffic Control Signals.
All portable traffic control signals shall meet the physical display and operational requirements of conventional traffic signals described in the MUTCD.
Each signal face shall have at least three lenses. The lenses shall be red, yellow, or green in color and shall give a circular type of indication. All lenses shall be twelve (12") inches nominal in diameter.
A minimum of two signal faces shall face each direction of traffic. A minimum of one signal head shall be suspended over the roadway travel lane in a manner that will allow the bottom of the signal head housing to be not less than seventeen (17') feet above and not more than nineteen (19') feet above the pavement grade at the center of the travel lane. The second signal head may be located over the travel lane with the same height requirements or the second signal head may be located on the shoulder. When the signal head is located on the shoulder the bottom of the signal head housing shall be at least eight (8') feet but not more than (15') feet above the pavement grade at the center of highway.
Advance warning signage and appropriate pavement markings shall be installed as part of the temporary signal operation.
The signals shall be operated in a manner consistent with traffic requirements. The signals may be operated in timed-mode or in a vehicle-actuated mode. The signals

shall be interconnected in a manner to ensure that conflicting movements can not occur. To assure that the appropriate operating pattern including timing is displayed to the traveling public, regular inspections including the use of accurate timing devices shall be made by the Worksite Traffic Control Supervisor. If at any time any part of the system fails to operate within these requirements then the use of the signal shall be suspended and the appropriate flagging operation shall begin immediately.
The Worksite Traffic Control Supervisor (WTCS) shall continuously monitor the portable traffic control signal to insure compliance with the requirements for maintenance under the MUTCD. The signal shall be maintained in a manner consistent with the intention of the MUTCD, with emphasis on cleaning of the optical system. Timing changes shall be made only by the WTCS. The WTCS shall keep a written record of all timing changes.
The portable temporary signal shall have two power sources and shall be capable of running for seven calendar days continuously.
The Contractor shall have an alternate temporary traffic control plan in the event of failure of the signal.

9. RUMBLE STRIPS
Rumble strips incorporated into the work shall meet the requirements of Section 429 and the MUTCD. Existing rumble strips that are positioned in the traveled way to warn traffic of a stop condition shall be reinstalled based on the following requirements:
INTERMEDIATE SURFACES: Intermediate surfaces that will be in use for more than forty-five (45) calendar days shall have rumble strips reinstalled on the traveled way in the area of a stop condition. Non-refundable deductions in accordance with 150.08 will be assessed for any intermediate surface in place for greater than 45 days without rumble strips.
FINAL SURFACES: Rumble strips shall be installed on the final surface within fourteen (14) calendar days of the placement of the final surface in the area of the stop condition. Failure to install within fourteen (14) calendar days will result in assessment of non-refundable deductions in accordance with 150.08.
Prior to the removal of any rumble strips located in the travelway, stop ahead (W3-1a) warning signs shall be double indicated ahead of the stop condition. These warning signs shall be a minimum of 48 inches by 48 inches. The reflectorization of the warning signs shall be as required by Subsection 150.01.C. These warning signs shall remain in place until the rumble strips have been reinstalled on the traveled way. Any existing warning signs for the stop ahead condition shall be removed or covered while the 48” X 48” (W3-1a) signs are in place. When the rumble strips have been reinstalled these warning signs should be promptly removed and any existing signage placed back in service.

10. GUARDRAIL: When the removal and installation of guardrail is required as a part of the work the following time restrictions shall apply unless modified by the special conditions:
MULTI-LANE HIGHWAYS: From the time that the existing guardrail or temporary positive barrier protection is removed the Contractor has fourteen (14) calendar days to install the new guardrail and anchors. During the interim, the location without guardrail shall be protected with drums spaced at a maximum spacing of twenty (20’) feet. The maximum length of rail that can be removed at any time without being replaced when

positive barrier protection is a total of 2000 linear feet of existing rail or the total length of one run of existing rail, whichever is greater.
ALL OTHER HIGHWAYS: From the time that the existing guardrail is removed or from the time that temporary positive barrier protection is removed the Contractor has thirty (30) calendar days to install the new guardrail and anchors. During the interim, the location without guardrail shall be protected with drums spaced at a maximum spacing of twenty (20') feet. The maximum length of rail that can be removed at any time without being replaced with positive barrier protection is a total of 1000 linear feet of existing rail or the total length of one run of existing rail, whichever is greater.
Based on existing field conditions, the Engineer may review the work and require that the guardrail be installed earlier than the maximum time allowed above by giving written notification to the Contractor via the TC-1 traffic control report.
Failure to comply with the above time and quantity restrictions shall be considered as non-compliance under Section 150.08.

11. STOP SIGN REGULATED INTERSECTIONS: For intersections that utilize stop sign(s) to control the flow of traffic and to restrict the movement of vehicles, the stop sign(s) shall be maintained for the duration of the work or until such time that the stop condition is eliminated or until an interim or permanent traffic signal can be installed to provide proper traffic control. The traffic signal shall be installed and properly functioning before the removal of the existing stop sign(s) is permitted. If the existing intersection is enhanced traffic control features such as stop bars, double indicated stop signs, oversized signs, advanced warning stop ahead signs, rumble strips on the approaches or flashing beacons located overhead or on the shoulders then these features shall be maintained for the duration of the project or until the permanent traffic control plan has been implemented.
Whenever the staging of the work requires that the traveled-way be relocated or realigned the Contractor shall reinstall all enhanced traffic control features noted above on the newly constructed sections of the work. The cost of relocating the stop bars, stop signs, advanced warning signs, the rumble strips and the flashing beacons shall be included in the price bid for Lump-Sum-Traffic Control unless individual pay items are included in the contract for rumble strips and/or flashing beacons. When pay items are included in the contract for rumble strips or flashing beacons then these items will be paid per each.
When staging requires the relocation or realignment of an existing stop condition it may be necessary to consider the addition of enhanced traffic control features even though none existed at the original location. As a guide for enhanced traffic control features that may be considered, the Engineer or the WTCS may refer to the Department's guidelines for "Opening of New Roadways to Traffic" (Document #6635-2). Horizontal and vertical alignment changes at a new location may have decreased or restricted sight distance or the stop condition may occur sooner than in the previous alignment. If these conditions occur then the Engineer and/or the WTCS should consider additional measures to enhance the motorist's awareness of the changes even though the staging plans may not address enhanced features. Stop signs should be a minimum of 36 inches for interim situations. The use of 48 inch stop signs may be warranted under project specific conditions. Flags may be used on interim/permanent stop signs that are mounted at seven (7') feet in height for a short duration in order to direct additional attention to a new or relocated stop sign(s). Flags should not be used for durations

exceeding two weeks unless unusual or site specify conditions warrant a longer period of time. The use of Type “A” flashing red light(s) attached to the stop sign(s) may be appropriate during the same period that the flags are in use to increase attention.
The use of rumble strips and/or portable changeable message signs may be considered. The use of new rumble strips, where none previously existed, shall have the prior approval of District Traffic Operations before being included as part of the temporary traffic control plan. The message(s) displayed on any PCMS shall have the prior approval of the Engineer and the message(s) shall be included as part of the TTC plan for the interim staging.
The placement of any additional interim ground-mounted signs and posts or stop bars shall be considered as incidental to the price bid for Lump Sum-Traffic Control. The installation of rumble strips, flashing beacons or the use of Portable Changeable Message Signs (PCMS) shall be considered as Extra Work unless pay items are included in the contract.

B. WORK ZONE RESTRICTIONS:

1. Interstate
The Contractor shall not simultaneously perform work on both the inside shoulder and outside shoulder on either direction of traffic flow when the Work is within 12 feet of the travel-way, unless such areas are separated by at least one-half mile of distance.

2. Non-Interstate Divided Highways
The Contractor shall not simultaneously perform work on both the inside shoulder and outside shoulder on either direction of traffic flow when the Work is within 12 feet of the travel-way, unless such areas are separated by at least one-half mile distance in rural areas or at least 500 feet of distance in urban areas.

3. Non-Divided Highways
a. The Contractor shall not simultaneously perform work on opposite sides of the roadway when the work is within 12 feet of the travel-way, unless such areas are separated by at least one-half mile of distance in rural areas or at least 500 feet of distance in urban areas.
b. On two-lane projects where full width sections of the existing subgrade, base or surface is to be removed, and new base, subgrade, or surface is to be constructed, the Contractor shall maintain one-lane traffic through the construction area by removing and replacing the undesirable material for half the width of the existing roadway at a time. Replacement shall be made such that paving is completed to the level of the existing pavement in the adjacent lane by the end of the workday or before opening the entire roadway to traffic.

4. All Highways:
a. There shall be no reduction in the total number of available traffic lanes that existed prior to construction except as specifically allowed by the Contract and as approved by the Engineer.
b. Travelway Clearances: All portions of the work shall maintain the following minimum requirements:
Horizontal: The combined dimensions of the paved shoulder and the roadway

surface remaining outside the Work Zone shall be no less than sixteen (16) feet in width at any location.
Vertical: The overhead clearance shall not be reduced to less than fifteen (15) feet at any location.
The restrictions above apply to all shifts, lane closures, on-site detours and off site detours whether shown in the contract or proposed by the Contractor. It shall be the responsibility of the Contractor to verify that these minimum requirements have been met before proceeding with any phase of the Work.
Two-lane two-way roadways may have temporary horizontal restrictions of less than sixteen (16) feet provided a flagger operation for one-way traffic is utilized to restrict access to the work area by over-width loads. The minimum horizontal clearance shall be restored before the flagging operation is removed.
c. Highway Work Zone: All sections or segments of the roadway under construction or reconstruction shall be signed as a Highway Work Zone except non-state highway two-lane two-way resurfacing projects. Two conditions can be applied to a Highway Work Zone: Condition 1 is when no reduction in the existing speed limit is required. Condition 2 is when worksite conditions require a reduction of the speed limit through the designated Work Zone. Properly marking a Highway Work Zone shall include the following minimum requirements:
1. NO REDUCTION IN THE EXISTING POSTED SPEED LIMIT IN HIGHWAY WORK ZONE:
a) Signage (Detail 150-HWZ-2) shall be posted at the beginning point of the Highway Work Zone warning the traveling public that increased penalties for speeding violations are in effect. The HWZ-2 sign shall be placed a minimum of six hundred (600') feet in advance of the Highway Work Zone and shall not be placed more than one thousand (1000') feet in advance of the Work Zone. If no speed reduction is required, it is recommended that the HWZ-2 be placed at 750 feet from the work area between the ROAD WORK 500 FT. and the ROAD WORK 1000 FT. signs.
HWZ-2 signs shall be placed at intervals not to exceed one mile for the length of the project. HWZ-2 signs should be placed on the mainline after all major intersections except State Routes. State Routes shall be signed as per the requirements for intersecting roadways below.
b) The existing speed limit shall be posted at the beginning of the Work Zone. Existing Speed Limit signs (R2-1) shall be maintained.
c) INTERSECTING ROADWAYS: Intersecting state routes shall be signed in advance of each intersection with the Work Zone with a HWZ-2 sign to warn motorists that increased fines are in effect. All other intersecting roadways that enter into a designated Highway Work Zone may be signed in advance of each intersection with the Work Zone. When construction equipment and personnel are present in the intersection on the mainline of a multi-lane roadway, the intersecting side roads shall be signed in advance with HWZ-2 signs. As soon as the work operation clears the intersection the signage may be removed.
d) Signage (Detail 150-HWZ-3) shall be posted at the end of the Highway Work Zone indicating the end of the zone and indicating that increased penalties for speeding violations are no longer in effect.
e) When a designated Highway Work Zone is no longer necessary all signs

shall be removed immediately.
2. REDUCING THE SPEED LIMIT IN A HIGHWAY WORK ZONE:
Highway Work Zone signs shall be posted as required in Condition 1 above. For limited access (interstate) highways and controlled access multi-lane divided highways the posted speed limit shall be reduced as required below. Speed Limit signage (R2-1) for the reduced speed limit shall be erected at the beginning of the work zone. Additional signs shall be placed to ensure that the maximum spacing of the reduced speed limit signs shall be no greater than one (1) mile apart. Existing speed limit signs shall be covered or removed. On multi-lane divided highways the speed limit signs shall be double indicated when the reduced speed is in use.
When any one or more of the following conditions exist and the existing speed limit is 65 mph or 70 mph, the speed limit shall be reduced by 10 mph. If the existing speed limit is 60 mph, the speed limit should be reduced by 5 mph. If the existing speed limit is 55 mph or less, the Contractor can only reduce the speed limit with the prior approval of the Engineer. The reduction in the speed limit shall be no greater than 10 mph:
a) Lane closure(s) of any type and any duration.
b) The difference in elevation exceeds two inches adjacent to a travel lane as shown in Subsection 150.06, Detail 150-B, 150-C.
c) Any areas where equipment or workers are within ten feet of a travel lane.
d) Temporary portable concrete barriers located less than two (2') feet from the traveled way.
e) As directed by the Engineer for conditions distinctive to this project.
When the above conditions are not present, the speed limit shall be immediately returned to the existing posted speed limit. A speed reduction shall not be put in place for the entire length of the project unless conditions warranting the speed reduction are present for the entire project length. All existing speed limit signs within the temporary speed reduction zone shall be covered or removed while the temporary reduction in the speed limit is in effect. All signs shall be erected to comply with the minimum requirements of the MUTCD.
As a minimum, the following records shall be kept by the WTCS:
a) Identify the need for the reduction.
b) Record the time of the installation and removal of the temporary reduction.
c) Fully describe the location and limits of the reduced speed zone.
d) Document any accident that occurs during the time of the reduction.
A copy of the weekly records for reduced speed zones shall be submitted to the Engineer.
Reduced speed zones shall, as a minimum, be signed as per Detail 150-HWZ-1. Interim signs shall meet the requirements of 150.03 D. Additional signs may be necessary to adjust for actual field conditions.
When a pilot vehicle is used on a two-lane two-way roadway the speed limit should not be reduced. For special conditions specific to the work, on two-lane two-way roadways or multi-lane highways, the contractor may reduce the posted speed limit with the prior approval of the Engineer.

5. MILLED SURFACE RESTRICTIONS:
Unless modified by the special conditions, a milled surface on any asphaltic concrete surface shall not be allowed to remain open to traffic for a period of time that exceeds thirty (30) calendar days.

6. INSTALLATION/REMOVAL OF WORK AREA SIGNAGE:
No payment will be made for Traffic Control-Lump Sum until the Work has actually started on the project. The installation of traffic control signage does not qualify as the start of work. Advanced warning signs shall not be installed until the actual beginning of work activities. Any permanent mount height signs installed as the work is preparing to start shall be covered until all signs are installed unless all signs are installed within seven (7) calendar days after beginning installation.
All temporary traffic control devices shall be removed as soon as practical when these devices are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered.
All construction warning signs shall be removed within seven (7) calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten (10) calendar days after completion of the Work, the Department shall have the right to remove such devices, claim possession thereof, and deduct the cost of such removal from any monies due, or which may become due, the Contractor.
PUNCHLIST WORK: Portable signs shall be utilized to accomplish the completion of all punchlist items. The portable signs shall be removed daily. All permanent mount height signs shall be removed prior to the beginning of the punchlist work except "Low/Soft Shoulder" signs and any signs that have the prior written approval of the Engineer to remain in place while the punchlist work is in progress.
Failure to promptly remove the construction warning signs within the seven (7) calendar days after the completion of the Work or failure to remove or cover signs when work is suspended for short periods of time shall be considered as nonperformance under Section 150.08.

C. LANE CLOSURES:

1. Approval/Restrictions
All lane closures of any type or duration shall have the prior approval of the Engineer.
a. The length of a lane closure shall not exceed two (2) miles in length excluding the length of the tapers unless the prior approval of the Engineer has been obtained. The Engineer may extend the length of a lane closure based upon field conditions. However, the length of a work zone should be held to the minimum length required to accomplish the Work. Lane closures shall not be spaced closer than one mile. The advanced warning signs for the project should not overlap with the advanced warning signs for lane shifts, lane closures, etc.
b. Lane closures that require same direction traffic to be split around the Work Area will not be approved for roadways with posted speeds of 35 mph or greater, excluding turn lanes.
c. For Interstate, Limited Access and Multi-lane Divided Highways, a Portable Changeable Message Sign (PCMS) shall be placed one (1) mile in advance of a lane

closure with a message denoting the appropriate lane closure one mile ahead. The Portable Changeable Message Sign (PCMS) shall be placed on the outside shoulder in accordance with Detail 150-PCMS. This is in addition to the other traffic control devices required by Standard 9106.

2. Removal Of Lane Closures
To provide the greatest possible convenience to the public in accordance with Sub-Subsection 107.07, the Contractor shall remove all signs, lane closure markings, and devices immediately when lane closure work is completed or temporarily suspended for any length of time or as directed by the Engineer. All portable signs and portable sign mounting devices shall be removed from the roadway to an area which will not allow the sign to be visible and will not allow the sign or sign mounting device to be impacted by traffic.

3. Exit And Entrance Ramps
On multilane highways where traffic has been shifted to the inside lanes, the exit and entrance ramps shall have channelization devices placed on both sides of the ramp. The temporary ramp taper length shall be greater than, or equal to, the existing taper length. Interim EXIT gore signs shall be placed at the ramp divergence. The “EXIT OPEN” sign shown in Figure TA-42 of the MUTCD shall be utilized. Channelization device spacing shall be 10 feet for 200 feet in advance of the temporary gore, and 10 feet for the first 100 feet of the temporary gore.

4. Lane Drop/Lane Closure
The first seven (7) calendar days of any lane closure shall be signed and marked as per Standard 9106 or 9107. However, lane closures that exist for a duration longer than seven (7) calendar days may be signed and marked as per the details in Standard 9121, provided the prior approval of the Engineer is obtained. The approved lane drop shall utilize only the signs and markings shown for the termination end of the lane drop in Standard 9121. All warning signs in the lane drop sequence shall be used. Drums may be substituted for the Type I Crystal Delineators at the same spacing.

5. Termination Area
The transition to normal or full width highway at the end of a lane closure shall be a maximum of 150 feet.

D. TRAFFIC PACING METHOD:

1. Pacing Of Traffic
With prior approval from the Engineer, traffic may be paced allowing the Contractor up to ten (10) minutes maximum to work in or above all lanes of traffic for the following purposes:
a. Placing bridge members or other bridge work.
b. Placing overhead sign structures.
c. Other work items requiring interruption of traffic.
The Contractor shall provide a uniformed police officer with patrol vehicle and blue flashing light for each direction of pacing. The police officer, Engineer, and flaggers at ramps shall be provided with a radio which will provide continuous contact with the Contractor.

When ready to start the work activity, the police vehicle will act as a pilot vehicle slowing the traffic thereby providing a gap in traffic allowing the Contractor to perform the Work. Any on-ramps between the pace and the work area shall be blocked during pacing of traffic, with a flagger properly dressed and equipped with a Stop/Slow paddle. Each ramp should be opened after the police vehicle has passed.
Pilot vehicles shall travel at a safe pace speed, desirably not less than 20 mph interstate and 10 mph non-interstate. The Contractor shall provide a vehicle to proceed in front of the police vehicle and behind the other traffic in order to inform the Contractor's work force when all vehicles have cleared the area.
Traffic will not be permitted to stop during pacing except in extreme cases as approved by the Engineer.

2. Methods Of Signing For Traffic Pacing
At a point not less than 1,000 feet in advance of the beginning point of the pace, the Contractor shall erect and cover a W-special sign (72 inch x 72 inch) with a Type "B" flashing light, with the legend "TRAFFIC SLOWED AHEAD SHORT DELAY" (See Detail 150-A). A portable changeable message sign may be used in lieu of the W-special sign. On divided highways this sign shall be double indicated. A worker with a two-way radio shall be posted at the sign, and upon notice that the traffic is to be paced shall turn on the flashing light and reveal the sign. When traffic is not being paced, the flashing light shall be turned off and the sign covered or removed. W-special signs are reflectorized black on orange, Series "C" letter and border of the size specified.

E. CONSTRUCTION VEHICLE TRAFFIC
The Contractor's vehicles shall travel in the direction of normal roadway traffic and shall not reverse direction except at intersections, interchanges, or approved temporary crossings. The Contractor may submit a plan requesting that construction traffic be allowed to travel in the opposite direction of normal traffic when it would be desirable to modify traffic patterns to accommodate specific construction activities.
Prior approval of the Engineer shall be obtained before any construction traffic is allowed to travel in a reverse direction. If the Contractor's submittal is approved the construction traffic shall be separated from normal traffic by appropriate traffic control devices.

F. ENVIRONMENTAL IMPACTS TO THE TEMPORARY TRAFFIC CONTROL (TTC) PLAN
The Contractor shall ensure that dust, mud, and other debris from construction activities do not interfere with normal traffic operations or adjacent properties. All outfall ditches, special ditches, critical storm drain structures, erosion control structures, retention basins, etc. shall be constructed, where possible, prior to the beginning of grading operations so that the best possible drainage and erosion control will be in effect during the grading operations, thereby keeping the roadway areas as dry as possible.
Areas within the limits of the project which are determined by the Engineer to be disturbed or damaged due either directly or indirectly from the progress or the lack of progress of the work shall be cleaned up, redressed, and regrassed. All surplus materials shall be removed and disposed of as required. Surplus materials shall be disposed of in accordance with Subsection 201.02.E.3 of the Specifications.

G. EXISTING STREET LIGHTS
Existing street lighting shall remain lighted as long as practical and until removal is approved by the Engineer.

H. NIGHTWORK
Adequate temporary lighting shall be provided at all nighttime work sites where workers will be immediately adjacent to traffic.

I. CONSTRUCTION VEHICLES IN THE WORKZONE
The parking of Contractor's and/or workers personal vehicles within the work area or adjacent to traffic is prohibited. It shall be the responsibility of the Worksite Traffic Control Supervisor to ensure that any vehicle present at the worksite is necessary for the completion of the work.

J. ENCROACHMENTS ON THE TRAVELED-WAY
The Worksite Traffic Control Supervisor (WTCS) shall monitor the work to ensure that all the rocks, boulders, construction debris, stockpiled materials, equipment, tools and other potential hazards are kept clear of the travelway. These items shall be stored in a location, in so far as practical, where they will not be subject to a vehicle running off the road and striking them.

K. PEDESTRIAN ACCESS TO THE WORK
All existing pedestrian walkways shall be maintained. Whenever changes to the worksite necessitate changes to existing walkways, temporary walkways shall be provided and maintained, with appropriate signs as necessary, to allow safe passage of pedestrian traffic.

L. TRAFFIC SIGNALS
If the sequence of operations, staging, or the temporary traffic control plan requires the relocation or shifting of any components of an existing traffic signal system then any work on these traffic signals will be considered as part of Lump Sum- Traffic Control. The contractor becomes responsible for the maintenance of these traffic signals from the time that the system is modified until final acceptance. The maintenance of traffic signals that are not a part of the work and are not in conflict with any portion of the work shall not be the responsibility of the contractor.
When construction operations necessitate an existing traffic signal to be out of service, the Contractor shall furnish off-duty police officers to regulate and maintain traffic control at the site.

M. REMOVAL/REINSTALLATION OF MISCELLANEOUS ITEMS
In the prosecution of the Work, if it becomes necessary to remove any existing signs, markers, guardrail, etc. not covered by specific pay item, they shall be removed, stored and reinstalled, when directed by the Engineer, to line and grade, and in the same condition as when removed.

150.03 SIGNS:

A. SIGNING REQUIREMENTS OF THE TEMPORARY TRAFFIC CONTROL (TTC) PLAN

When existing regulatory, warning or guide signs are required for proper traffic control the Contractor shall maintain these signs in accordance with the temporary traffic control (TTC) plan. The Contractor shall review the status of all existing signs, interim signs added to the work, and permanent sign installations that are part of the work to eliminate any conflicting or non-applicable signage in the TTC Plan. The Contractor's review of all signs in the TTC Plan shall establish compliance with the requirements of the MUTCD and Section 150. Any conflicts shall be reported to the Engineer immediately and the WTCS shall take the necessary measures to eliminate the conflict.

The Contractor shall make every effort to eliminate the use of interim signs as soon as the Work allows for the installation of permanent signs.

All existing illuminated signs shall remain lighted and be maintained by the Contractor. Existing street name signs shall be maintained at street intersections.

B. CONFLICTING OR NON-APPLICABLE SIGNS

Any sign(s) or portions of a sign(s) that are not applicable to the TTC plan shall be covered so as not to be visible to traffic or shall be removed from the roadway when not in use. The WTCS shall review all traffic shifts and changes in the traffic patterns to ensure that all conflicting signs have been removed. The review shall confirm that the highest priority signs have been installed and that signs of lesser significance are not interfering with the visibility of the high priority signs. High priority signs include signs for road closures, shifts, detours, lane closures and curves. Any signs, such as speed zones and speed limits, passing zones, littering fines and litter pick up, that reference activities that are not applicable due to the presence of the Work shall be removed, stored and reinstalled when the Work is completed.

Failure to promptly eliminate conflicting or non-applicable signs shall be considered as nonperformance
under Section 150.08.

C. REMOVAL OF EXISTING SIGNS AND SUPPORTS

The Contractor shall not remove any existing signs and supports without prior approval from the Engineer. All existing signs and supports that are to be removed shall be stored and protected if this material will be required later in the work as part of the TTC plan. If the signs are not to be utilized in the work then the signs will become the property of the Contractor unless otherwise specified in the contract documents.

D. INTERIM GUIDE, WARNING AND REGULATORY SIGNS

Interim guide, warning, or regulatory signs required to direct traffic shall be furnished, installed, reused, and maintained by the Contractor in accordance with the MUTCD, the Plans, Special Provisions, Special Conditions, or as directed by the Engineer. These signs shall remain the property of the Contractor. The bottom of all interim signs shall be mounted at least seven (7') feet above the level of the pavement edge when the signs are used for long-term stationary operations as defined by Section 6G.02 of the MUTCD. Special Conditions under Subsection 150.11 may modify this requirement.

Portable signs may be used when the duration of the work is less than three (3) days or as allowed by the special conditions in Subsection 150.11. Portable signs shall be used for all punchlist work. All portable signs and sign mounting devices utilized in work shall be

NCHRP 350 compliant. Portable interim signs shall be mounted a minimum of one (1') foot above the level of the pavement edge for directional traffic of two (2) lanes or less and a minimum of seven (7') feet for directional traffic of three (3) or more lanes. Signs shall be mounted at the height recommended by the manufacturer's crashworthy testing requirements. Portable interim signs that are mounted at less than seven (7') feet in height may have two 18 inch x 18 inch fluorescent red-orange or orange-red warning flags mounted on each sign.
All regulatory sign blanks shall be rigid whether the sign is mounted as a portable sign, on a Type III barricade or as a permanent mount height sign.
Any permanent mount height interim sign that is designed to fold in half to cover a nonapplicable
message on the sign shall have reflectorized material on the folded over portion of the sign. The reflectorized material shall be orange in color with a minimum of ASTM Type I engineering grade sheeting with a minimum area of six inches by six inches (6" x 6") facing the direction of traffic at all times when the sign is folded.
Interim signs may be either English or metric dimensions.

E. EXISTING SPECIAL GUIDE SIGNS
Existing special guide signs on the Project shall be maintained until conditions require a change in location or legend content. When change is required, existing signs shall be modified and continued in use if the required modification can be made within existing sign borders using design requirements (legend, letter size, spacing, border, etc.) equal to that of the existing signs, or of Sub-Section 150.03.E.2. Differing legend designs shall not be mixed in the same sign.

1. Special Guide Signs
Special guide signs are those expressway or freeway guide signs that are designed with a message content (legend) that applies to a particular roadway location. When an existing special guide sign is in conflict with work to be performed, the Contractor shall remove the conflicting sign and reset it in a new, non-conflicting location which has been approved by the Engineer.

2. Interim Special Guide Signs
When it is not possible to utilize existing signs, either in place or relocated, the Contractor shall furnish, erect, maintain, modify, relocate, and remove new interim special guide signs in accordance with the Plans or as directed by the Engineer.
Interim special guide signs that may be required in addition to, or a replacement for, existing expressway and freeway (interstate) signs shall be designed and fabricated in compliance with the minimum requirements for guide signing contained in Part 2E "Guide Signs Expressway" and Part 2F "Guide Signs Freeways" of the MUTCD, except that the minimum size of all letters and numerals in the names and places, streets and highways on all signs shall be 16 inches Series "E" initial upper case and 12 inches lower-case. All interstate shields on these signs shall be 48 inches and 60 inches for two-numeral and three-numeral routes, respectively.
The road name of the exit or route shield shall be placed on the exit gore sign.

3. Interim Overhead Guide Sign Structures
Interim overhead special guide sign structures are not required to be lighted unless specifically required by the Plans. If lighting is required, the sign shall be lighted as soon as erected and shall remain lighted, during the hours of darkness, until the interim sign is no longer required. The Contractor shall notify the Power Company at least thirty (30) days prior to desired connection to the power source.

4. Permanent Special Guide Signs
The installation of new permanent special guide signs and the permanent modification or resetting of existing special guide signs, when included in the contract, shall be accomplished as soon as practical to minimize the use of interim special guide signs. If lighting is required by the Plans, all new permanent overhead special guide signs shall be lighted as soon as erected.

F. MATERIALS- INTERIM SIGNS:

1. Posts
Permanent mounting height of seven (7') feet- Posts for all interim signs shall meet the requirements of Section 911 except that green or silver paint may be used in lieu of galvanization for steel posts or structural shape posts. Within the limits of a single project, all metal posts shall be the same color. Wood posts are not required to be pressure treated.
Interim posts may be either metric or English in dimensions.
Posts for all interim signs shall be constructed to yield upon impact unless the posts are protected by guardrail, portable barrier, impact attenuator or other type of positive barrier protection. Unprotected posts shall meet the breakaway requirements of the "1994 AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaries and Traffic Signals". Unprotected interim posts shall be spliced as shown in Detail 150-F unless full length unspliced posts are used.
Unprotected post splices will not be permitted any higher than four inches above the ground line to lessen the possibility of affecting the undercarriage of a vehicle.
Installation of posts may require establishment of openings in existing pavements, islands, shoulders etc.

2. Sign Blanks And Panels- Permanent mounting height of seven (7') feet-
All sign blanks and panels shall conform to Section 912 of the Specifications except that blanks and panels may be ferrous based or other metal alloys. Type 1 and Type 2 sign blanks shall have a minimum thickness of 0.08 inches regardless of the sign type used. Alternative sign blank materials (composites, polycarbonates, fiberglass reinforced plastics, recycled plastics, etc.) shall have a letter of approval from the Office of Materials and Research for use as interim construction signs before these materials are allowed to be incorporated into the work unless these rigid sign blanks are currently approved as a crashworthy sign blank material under QPL 34. The backside of sign panels shall be painted orange to prevent rust if other metals are used in lieu of aluminum. Plywood blanks or panels will not be permitted. The use of flexible signs will not be permitted for permanent mount height signs.
Interim blanks and panels may be either metric or English in dimensions.

3. Portable Sign Mounting Devices, Portable Sign Blanks-
All portable sign mounting devices and sign blanks utilized in the work shall be NCHRP 350 Test Level III compliant. All portable sign mounting devices and sign blanks shall be from the Qualified Products List. Any sign or sign mounting device shall have an identifying decal, logo, or manufacturer's stamping that clearly identifies the device as NCHRP 350 compliant. The Contractor may be required to provide certification from the Manufacturer as proof of NCHRP 350 compliance. All portable signs shall be mounted according to height requirements of Subsection 150.03.D.

G. SIGN VISIBILITY AND OFFSETS
All existing, interim and new permanent signs shall be installed so as to be completely visible for an advance distance in compliance with the MUTCD. Any clearing required for maintaining the line of sight to existing, interim or permanent signs shall be done as part of the requirements of the TTC plan. The clearing shall include any advance warning signs, both interim and permanent, that are installed as a part of the work including advance warning signs that are installed outside the limits of the project. Any sign installed behind W-beam or T-beam guardrail with non-breakaway posts shall be installed with the leading edge of the sign a minimum of four feet and three inches (4'3") behind the face of the guardrail with five feet (5') of clearance being desirable. Limbs, brush, construction equipment and materials shall be kept clear of the driver's line of sight to all signs that are part of the TTC plan.

H. ADVANCE WARNING SIGNS:

1. All Type Of Highways
Advance warning signs shall be placed ahead of the work area in accordance with Part VI of the MUTCD and shall include a series of at least three advance road work (W20-1) signs placed at the termini of the project. The series shall have the legend ROAD WORK (1500 FEET, 1000 FEET, AND 500 FEET).
At grade intersecting roadways and on-ramps shall be signed with a minimum of one ROAD WORK AHEAD sign.
When work terminates at a "T" intersection, a minimum of one "ROAD WORK AHEAD" sign shall be placed in advance of the intersection and one "END ROAD WORK" sign shall be placed at the termination end of the intersection. Field conditions may require the use of additional warning signage.
Advanced Warning Signs on State Routes shall be a minimum dimension of 48 inches x 48 inches. When a State Route intersects a project which consists of adding travel lanes, reconstructing an existing roadway or new location work, the State Route approaches shall have a minimum of three (W20-1) advanced warning signs (1500 ft., 1000 ft., 500 ft.). The termination end of an intersecting State Route shall have END ROAD WORK signage.
The W20-1 signs shall be placed at the termini of the project or sufficiently in advance of the termini to allow for lane shifts, lane closures and other activities which may also require advanced warning signs. The advanced warning signs for the project should not overlap with the advanced warning signs for lane shifts, lane closures, etc.
The length of a work zone should be held to the minimum length required to accomplish the work. If a project has multiple individual worksites within the overall limits of the project, each site should be signed individually if the advance warning

signs for each site can be installed without overlapping an adjacent worksite. As soon as the work is completed at any individual site, the warning signs shall be removed from that site. Clean-up work and punchlist work shall be performed with portable signage. Project mileage indicated on the G20-1 sign shall be the actual project mileage rounded up to the nearest whole mile. Projects less than two (2) miles in length or individual worksites that are part of a multiple worksite project may delete this sign. The G20-1 sign shall be 60” X 36” and the G20-2 sign shall be 48” X 24”.

2. Interstate, Limited Access And Multilane Divided Highways

In addition to the W20-1 signs required at 500 ft., 1000 ft. and 1500 ft., multi-lane divided highways shall also have additional advanced warning signs installed with the legend “ROAD WORK (2 MILES, 1 MILE and 1/2 MILE). All construction warning signs on divided highways shall be double indicated (i.e., on the left and right sides of the roadway.) If the use of the ½ mile, 1 mile and 2 mile advanced warning signs cause overlaps with other work or do not benefit field conditions then the Engineer may review the use of these signs and eliminate their installation. When the posted speed limit is 50 MPH or less, the ½ mile, 1 mile and 2 mile signs should be eliminated especially in urban areas.

The W20-1 advance warning signs for ROAD WORK 500 FEET; 1000 FEET; and 1500 FEET shall be temporarily covered when work involving the advanced warning signs for lane shifts and lane closures overlap these signs. The ROAD WORK ½ MILE, ROAD WORK 1 MILE, and ROAD WORK 2 MILES shall be in place when the 500, 1000 and 1500 feet signs are temporarily covered.

When the temporary traffic control zone already has advanced warning (W20-1) signs installed the W20-1 signs required for lane closures under Standard 9106 should be eliminated.

RAMP WORK ON LIMITED ACCESS HIGHWAYS: The work zone shall not be signed for the entire length of the mainline of a limited access highway when only short individual worksites, interchange or ramp work is being performed.

When work is restricted to ramp reconstruction or widening activities, the advance warning signs on the mainline section of the limited access highway shall be limited to the use of portable advance warning signs. These portable advance-warning signs shall only be utilized when work activity is within the gore point of the ramp and the mainline traveled way or work is active in the accel/deccel lane adjacent to the mainline traveled way. Portable advance warning signs (W20-1; 1500ft./1000 ft./500ft.) shall be installed on the traveled way of the limited access highway when the above conditions are present. The advance warning signs shall be installed only in one direction where work is active. All portable signs shall be double indicated. When work is not active, the ramp work shall be advanced warned by the use of a single 48 inch X 48 inch “RAMP WORK AHEAD” sign along the right shoulder of the mainline traveled way prior to the beginning of the taper for the decel lane. The “RAMP WORK AHEAD” sign shall be mounted at seven (7’) feet in height. Differences in elevation shall be in compliance with the requirements of Subsection 150.06 prior to the removal of the portable (W20-1) advanced warning signs from the mainline.

The G20-1 sign shall be eliminated on limited access highways when the work involves only ramp work, bridge reconstruction, bridge painting, bridge joint repairs, guardrail and anchor replacement or other site-specific work which is confined to a short section of limited access highway.

I. PORTABLE CHANGEABLE MESSAGE SIGN

Unless specified as a paid item in the contract the use of a portable changeable message sign will not be required. When specified, a portable changeable message sign (PCMS) shall meet the minimum requirements of Section 632 and the MUTCD. The maximum amount of messages allowed to be flashed on one PCMS is two phases (flashes). The language and the timing of the messages shall comply with the MUTCD and Section 632. When used as an advanced device the PCMS should typically be placed ahead of the construction activities. If the PCMS is used as a substitute for another device then the requirements for the other device apply.

J. FLASHING BEACON

The flashing beacon assembly, when specified, shall be used in conjunction with construction warning signs, regulatory, or guide signs to inform traffic of special road conditions which require additional driver attention. The flashing beacon assembly shall be installed in accordance with the requirements of Section 647.

K. RUMBLE STRIP SIGNAGE

Signage for rumble strips located in the travelway shall be as required in Subsection 150.01.C and Subsection 150.02.A.9.

L. LOW/SOFT SHOULDER SIGNAGE

Low or soft shoulder signs shall be utilized in accordance with the following conditions:

CONSTRUCTION/RECONSTRUCTION PROJECTS:

"LOW/SOFT SHOULDER" signs shall be erected when a difference in elevation exceeds one (1") inch but does not exceed three (3") inches between the travelway and any type of shoulder unless the difference in elevation is four (4') feet or greater from the edge of the traveled way.

The spacing of the signs shall not exceed one (1) mile and the signs shall be placed immediately past each crossroad intersection. The "Low/Soft" signs shall remain in place until the difference in elevation is eliminated and the shoulder has been dressed and permanently grassed for a minimum of thirty (30) calendar days. These signs shall be furnished, installed, maintained and removed by the Contractor as part of Traffic Control-Lump Sum. These signs shall be orange with black borders and meet the reflectorization requirements of Subsection 150.01.C.

"SHOULDER DROP-OFF" (W8-9a) signs shall be used when a difference in elevation, less than four (4') feet from the traveled way, exceeds three (3") inches and is not protected by positive barrier protection. These warning signs shall be placed in advance of the drop-off. For a continuous drop-off condition, the W8-9a) signs shall, as a minimum, be spaced in accordance with the above requirements for "Low/soft shoulder" signs.

PROJECTS CONSISTING PRIMARILY OF ASPHALTIC CONCRETE RESURFACING ITEMS:

"LOW/SOFT SHOULDER" signs shall be erected when a difference in elevation exceeds one (1") inch but does not exceed three (3") inches between the travelway and any type of shoulder unless the difference in elevation is four (4') feet or greater from the edge of the traveled way.

SHOULDER BUILDING INCLUDED IN THE CONTRACT: "Low/Soft Shoulder" signs shall be

erected as per the requirement of Standards 9102, 9106, and 9107. “Shoulder Drop-off” signs (W8-9a) shall be erected as per the requirements of the MUTCD. These signs shall be maintained until the conditions requiring their installation have been eliminated. The Contractor shall remove all interim warning signs before final acceptance.
SHOULDER BUILDING NOT INCLUDED IN THE CONTRACT: The Department will furnish the “Low/Soft Shoulder” signs, “Shoulder Drop-off” signs and the posts. The signs shall be erected to meet the minimum requirements of Subsection 150.03. The Contractor shall include the cost of furnishing installation hardware (bolts, nuts, and washers), erection and maintenance of the signs in the bid price for Traffic Control- Lump Sum. The Contractor shall maintain the signs until final acceptance. The Department will remove the signs.
LAU/LAR PROJECTS SHOULDER BUILDING NOT INCLUDED IN THE CONTRACT: The Contractor will furnish, install and maintain LOW/SOFT SHOULDER signs (yellow with black borders, ASTM Type III or IV) at the appropriate spacing, until Final Acceptance of the project by the Department. After Final Acceptance by the Department the signs will become the property and responsibility of the local government.

M. BUMP SIGNAGE:
MULTI-LANE DIVIDED HIGHWAYS: A bump sign (W8-1) shall be utilized when a transverse joint in the pavement structure has a vertical difference in elevation of three quarters (3/4”) of an inch or greater in depth with no horizontal taper to ramp the traffic from one elevation to the other. This condition typically occurs at approach slabs during pavement milling operations and at transverse joints in asphaltic pavement lifts.
TWO-LANE TWO-WAY HIGHWAYS: A bump sign (W8-1) shall be utilized when a transverse joint in the pavement structure has a vertical difference in elevation that exceeds one and three quarters (1-3/4”) inches in depth with no horizontal taper to ramp the traffic from one elevation to the other. This includes utility and storm drainage repairs that require concrete placement for patching and/or steel plating.
The (W8-1) sign shall be placed sufficiently in advance to warn the motorist of the condition.

150.04 PAVEMENT MARKINGS

A. GENERAL

Full pattern pavement markings in accordance with Section 652 and in conformance with Section 3A and 3B, except 3B.02, of the MUTCD are required on all courses before the roadway is opened to traffic. No passing zones shall be marked to conform to Subsection 150.04.E. During construction and maintenance activities on all highways open to traffic, both existing markings and markings applied under this Section shall be fully maintained until Final Acceptance. If the pavement markings are, or become, unsatisfactory in the judgment of the Engineer due to wear, weathering, or construction activities, they shall be restored immediately.

1. Resurfacing Projects

Pavement markings shall be provided on all surfaces that are placed over existing markings. Interim and final markings shall conform in type and location to the markings that existed prior to resurfacing unless changes or additions are noted in the Contract. The replacement of parking spaces will not be required unless a specific item or note has been included in the Contract. Any work to make additions to the markings that existed prior to resurfacing is to be considered as extra work.

2. Widening And Reconstruction Projects
If the lane configuration is altered from the preconstruction layout then pavement markings will be as required by the plans or the Engineer.

3. New Location Construction Projects
Pavement marking plans will be provided.

B. MATERIALS
All traffic striping applied under this Section shall be a minimum four inches in width or as shown in plans and shall conform to the requirements of Section 652, except as modified herein. Raised pavement markers (RPMs) shall meet the requirements of Section 654. Markings on the final surface course, which must be removed, shall be a removable type. The Contractor will be permitted to use paint, thermoplastic, or tape on pavement which is to be overlaid as part of the project, unless otherwise directed by the Engineer. Partial (skip) reflectorization (i.e. reflectorizing only a portion of a stripe) will not be allowed.

C. INSTALLATION AND REMOVAL OF PAVEMENT MARKINGS:
INSTALLATION: All pavement markings, both interim and permanent, shall be applied to a clean surface. The Contractor shall furnish the layout and preline the roadway surface for the placement of pavement markings applied as part of the temporary traffic control plan. All interim marking tape and RPM's on the final surface shall be removed prior to the placement of the final markings.
The Contractor shall sequence the work in such a manner as to allow the installation of markings in the final lane configuration at the earliest possible stage of the work.
REMOVAL: Markings no longer applicable shall be removed in accordance with Subsection 656.2.
THE ELIMINATION OF CONFLICTING PAVEMENT MARKINGS BY OVERPAINTING WITH PAINT OR LIQUID ASPHALT IS NOT ACCEPTABLE.
INTERMEDIATE SURFACE: Interim markings shall be removed by methods that will cause minimal damage to the pavement surface while also ensuring that traveling public will not be confused or misdirected by any residual markings remaining on the intermediate surface. The use of approved blackout tape and blackout paint may be permitted on some interim surfaces, provided the results are satisfactory to the Engineer.
FINAL SURFACE: No interim paint or thermoplastic markings will be permitted on any final surface unless the interim markings are in alignment with the location of the permanent markings and the interim marking will not interfere or adversely affect placement of the permanent markings. The proposed method of removal for layout errors that require markings to be removed from the final surface shall have the prior approval of the Engineer. Any damage to the final pavement surface caused by the pavement marking removal process shall be repaired at the Contractor's expense by methods acceptable and approved by the Engineer. Subsection 400.3.06.C shall apply when corrective measures are required. The use of blackout tape or blackout paint will not be permitted to correct layout errors on any final surface.
Traffic shifts that are done on the final surface shall be accomplished using interim traffic marking tape that can be removed without any blemishing of the final surface. Interim traffic marking tape shall be used on any of the following final surfaces; asphaltic concrete, Portland cement concrete, and bridge deck surfaces. Exceptions to the requirements for interim traffic marking tape shall have the written prior approval of the Engineer before the

application of any other method is permitted.
PAY FACTOR REDUCTION FOR ASPHALTIC CONCRETE FINAL SURFACES: When the correction of an error in the layout of the final pavement markings requires the final surface to be grounded, blemished, scarred, or polished the pay factor shall be reduced to 0.95 for the entire surface area of the final topping that has a blemish, polished or a scarred surface. The reduced pay factor shall not be confined to only the width and length of the stripe or the dimensions of the blemished areas, the whole roadway surface shall have the reduced pay factor applied. The area of the reduced pay factor shall be determined by the total length and the total width of the roadway affected. If the affected area is not corrected, the reduction in pay shall be deducted from the final payment for the topping layer of asphaltic concrete. The Engineer shall make the final determination whether correction or a reduced pay factor is acceptable.
The eradication of pavement markings on intermediate and final concrete surfaces shall be accomplished by a method that does not grind, polish, or blemish the surface of the concrete. The method used for the removal of the interim markings shall not spall chip the joints in the concrete and shall not damage the sealant in the joints. Any joint or sealant repairs shall be included in the bid price for Traffic Control-Lump Sum. The proposed method of removal shall have the prior approval of the Engineer.
Failure to promptly remove conflicting or non-applicable pavement markings shall be considered as non-performance under Subsection 150.08.
PREPARATION AND PLANNING FOR TRAFFIC SHIFTS: When shifting of traffic necessitates removal of centerline, lane lines, or edge lines, all such lines shall be removed prior to, during, or immediately after any change so as to present the least interference with traffic. Interim traffic marking tape shall be used as a temporary substitute for the traffic markings being removed.
Before any change in traffic lane(s) alignment, marking removal equipment shall be present on the project for immediate use. If marking removal equipment failures occur, the equipment shall be repaired or replaced (including leasing equipment if necessary), so that the removal can be accomplished without delay.
Except for the final surface, markings on asphaltic concrete may be obliterated by an overlay course, when approved by the Engineer. When an asphaltic concrete overlay is placed for the sole purpose of eliminating conflicting markings and the in place asphaltic concrete section will allow, said overlay will be eligible for payment only if designated in the Plans. Overlays to obliterate lines will be paid for only once and further traffic shifts in the same area shall be accomplished with removable markings. Only the minimum asphaltic concrete thickness required to cover lines will be allowed. Excessive build-up will not be permitted. When an overlay for the sole purpose of eliminating conflicting markings is not allowed, the markings no longer applicable shall be removed in accordance with Subsection 656.2.

D. RAISED PAVEMENT MARKERS
Raised pavement markers (RPMs) are required as listed below for all asphaltic concrete pavements before the roadway is open to traffic. On the final surface, RPM's shall be placed according to the timeframes specified in 150.04 E. for full pattern pavement markings except Interstate Highways where RPM's shall be placed and/or maintained when the roadway is open to traffic. When Portland Cement Concrete is an intermediate or final surface and is open to traffic, one calendar day is allowed for cleaning and drying before the installation of RPMs is required.

Raised pavement markers are not allowed on the right edge lines under any situation.

1. Interstate Highways
Retro-reflective raised pavement markers (RPM's) shall be placed and/or maintained on intermediate pavements surfaces on all interstate highways that are open to traffic. This includes all resurfacing projects along with widening and reconstruction projects. The spacing and placement shall be as required for MULTI-LANE DIVIDED HIGHWAYS.

2. Multi-Lane Divided Highways
Retro-reflective raised pavement markers (RPMs) shall be placed and/or maintained on intermediate pavement surfaces on all multi-lane divided highways that are opened to traffic when these roadways are being widened or reconstructed. Two lane-two way roadways that are being widened to a multi-lane facility, whether divided or undivided, are included in this provision. Projects consisting primarily of asphalt resurfacing items or shoulder widening items are excluded from this requirement. The RPMs shall be placed as follows:
a. SUPPLEMENTING LANE LINES
80 foot center on skip lines with curvature less than three degrees. (Includes tangents)
40 foot centers on solid lines and all lines with curvature between three degrees and six degrees.
20 foot centers on curves over six degrees.
20 foot centers on lane transitions or shifts.
b. SUPPLEMENTING RAMP GORE LINES
20-foot centers, two each, placed side by side.
c. OTHER LINES
As shown on the plans or directed by the Engineer.

3. Other Highways
On other highways under construction RPMs shall be used and/or maintained on intermediate pavement surfaces as follows:
a. SUPPLEMENTING LANE LINES AND SOLID LINES
40 foot centers except on lane shifts. (When required in the Plans or Contract.)
20 foot centers on lane shifts. (Required in all cases.)
b. SUPPLEMENTING DOUBLE SOLID LINES
40 foot centers (one each beside each line) except on lane shifts. (When required in the Plans or Contract.)
20 foot centers on lane shifts. (Required in all cases.)

E. EXCEPTIONS FOR INTERIM MARKINGS
Some exceptions to the time of placement and pattern of markings are permitted as noted below, however, full pattern pavement markings are required for the completed project.

1. Two-Lane, Two-Way Roadways
a. SKIP LINES
All interim skip (broken) stripes shall conform to Section 652 except that stripes shall be at least two feet long with a maximum gap of 38 feet. On curves greater than six degrees, a one-foot stripe with a maximum gap of 19 feet shall be used.

In lane shift areas, solid lines will be required. Interim skip lines shall be replaced with markings in full compliance with Section 652 prior to expiration of the 14 calendar day period.
Interim raised pavement markers may be substituted for the interim skip (broken) stripes. If raised pavement markers are substituted for the two-foot interim skip stripe, three markers spaced at equal intervals over a two feet distance will be required. No separate payment will be made if the interim raised pavement markers are substituted for interim skip lines.
Interim raised pavement markers shall be retro-reflective, shall be the same color as the pavement markers for which they are substituted, and shall be visible during daytime.
The type of interim marker and method of attachment to the pavement shall be approved by the Office of Materials and Research but in no case will the markers be attached by the use of nails. Flexible reflective markers, Type 14 or Type 15, may be used for a maximum of fourteen (14) calendar days as an interim marker. Any flexible reflective markers in use shall be from the qualified products list (QPL). The interim raised pavement markers shall be maintained until the full pattern pavement markings are applied. At the time full pattern markings are applied the interim raised markers shall be removed in a manner that will not interfere with application of the full pattern pavement markings.
b. NO PASSING ZONES-TWO-LANE, TWO-WAY ROADWAYS
Passing zones shall be re-established in the locations existing prior to resurfacing. No changes to the location of passing zones shall be done without the written approval of the Engineer. For periods not to exceed three calendar days where interim skip centerlines are in place, no-passing zones shall be identified by using post or portable mounted DO NOT PASS regulatory signs (R4-1 24” x 30”) at the beginning and at intervals not to exceed ½ mile within each no-passing zone. A post or portable mounted PASS WITH CARE regulatory sign (R4-1 24” x 30”) shall be placed at the end of each no-passing zone. Post mounted signs shall be placed in accordance with the MUTCD. Portable signs shall conform to the requirements of the MUTCD and shall be NCHRP 350 compliant. Portable signs shall be secured in such a manner to prevent misalignment and minimize the possibility of being blown over by weather conditions or traffic.
On new location projects and on projects where either horizontal or vertical alignments has been modified, the location of No-Passing Zones will be identified by the Engineer.
c. EDGELINES
1) Bituminous Surface Treatment Paving
Edgelines will not be required on intermediate surfaces (including asphaltic concrete leveling for bituminous surface treatment paving) that are in use for a period of less than 60 calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Engineer. On the final surface, edgelines shall be placed within 30 calendar days of the time that the final surface was placed.
2) All Other Types of Pavement
Edgelines will not be required on intermediate surfaces that are in use for a period of less than 30 calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Engineer.

On the final surface, edgelines shall be placed within 14 calendar days of the time that the surface was placed.

2. Multi-Lane Highways – With No Paved Shoulder(S) Or Paved Shoulder(S) Four Feet Or Less

a. UNDIVIDED HIGHWAYS (INCLUDES PAVED CENTER TURN LANE)

1) Centerlines and No-Passing Barrier-Full Pattern centerlines and no-passing barriers shall be restored before opening to traffic.

2) Lanelines- Interim skip (broken) stripe as described in Subsection 150.04E.1.a. may be used for periods not to exceed three calendar days. Skiplines are not permitted in lane shift areas. Solid lines shall be used.

3) Edgelines- Edgelines shall be placed on intermediate and final surfaces within three calendar days of obliteration.

b. DIVIDED HIGHWAYS (GRASS OR RAISED MEDIAN)

1) Lanelines- Full pattern skip stripe shall be restored before opening to traffic. Skip lines are not permitted in lane shift areas. Solid lines shall be required.

2) Centerline/Edgeline- Solid lines shall be placed on intermediate and final surfaces within three calendar days of obliteration.

3. Limited Access Roadways And Roadways With Paved Shoulders Greater Than Four Feet

a. Same as Subsection 150.04.E.2 except as noted in (b) below.

b. EDGELINES-

1) Asphaltic Concrete Pavement- Edgelines shall be placed on intermediate and final surfaces prior to opening to traffic.

2) Portland Cement Concrete Pavement- Edgelines shall be placed on any surface open to traffic no later than one calendar day after work is completed on a section of roadway. All water and residue shall be removed prior to daily striping.

4. Ramps For Multi-Lane Divided Highways

A minimum of one solid line edge stripe shall be placed on any intermediate surface of a ramp prior to opening the ramp to traffic. The other edge stripe may be omitted for a maximum period of three (3) calendar days on an intermediate surface. Appropriate channelization devices shall be spaced at a maximum of twenty-five (25') feet intervals until the other stripe has been installed.

The final surface shall have both stripes placed prior to opening the ramp to traffic.

5. MISCELLANEOUS PAVEMENT MARKINGS:

FINAL SURFACE: School zones, railroads, stop bars, symbols, words and other similar markings shall be placed on final surfaces conforming to Section 652 within fourteen (14) calendar days of completion of the final surface. Final markings shall conform to the type of pay item in the plans. When no pay item exists in the plans the final markings shall conform to Section 652 for painted markings.

INTERMEDIATE SURFACE: Intermediate surfaces that will be in use for more than forty-five (45) calendar days shall have the miscellaneous pavement markings installed to conform to the requirement of Section 652. Under Subsection 150.11, Special Conditions, or as directed by the Engineer these markings may be eliminated.

F. MOBILE OPERATIONS

When pavement markings (centerlines, lane lines, and edgelines) are applied in a continuous operation by moving vehicles and equipment, the following minimum equipment and warning devices shall be required. These devices and equipment are in addition to the minimum requirements of the MUTCD.

1. All Roadways

All vehicles shall be equipped with the official slow moving vehicle symbol sign. All vehicles shall have a minimum of two flashing or rotating beacons visible in all directions. All protection vehicles shall have an arrow panel mounted on the rear. All vehicles requiring an arrow panel shall have, as a minimum, a Type B panel. All vehicle-mounted signs shall be mounted with the bottom of the sign a minimum height of forty-eight inches (48”) above the pavement. All sign legends shall be covered or removed from view when work is not in progress.

2. Two-Lane Two-Way Roadways

a. Lead Vehicles

The lead vehicle may be a separate vehicle or the work vehicle applying the pavement markings may be used as the lead vehicle. The lead vehicle shall have an arrow panel mounted so that the panel is easily visible to oncoming (approaching) traffic. The arrow panel should typically operate in the caution mode.

b. Work Vehicles

The work vehicle(s) applying markings shall have an arrow panel mounted on the rear. The arrow panel should typically operate in the caution mode. The work vehicle placing cones shall follow directly behind the work vehicle applying the markings.

c. Protection Vehicles

A protection vehicle may follow the cone work vehicle when the cones are being placed and may follow when the cones are being removed.

3. MULTI-LANE ROADWAYS

A lead vehicle may be used but is not required. The work vehicle placing cones shall follow directly behind the work vehicle applying the markings. A protection vehicle that does not function as a work vehicle should follow the cone work vehicle when traffic cones are being placed. A protection vehicle should follow the cone work vehicle when the cones are being removed from the roadway. Protection vehicles shall display a sign on the rear of the vehicle with the legend PASS ON LEFT (RIGHT).
INTERSTATES AND LIMITED ACCESS ROADWAYS: A protection vehicle shall follow the last work vehicle at all times and shall be equipped with a truck mounted attenuator that is certified for impacts not less than 62 mph in accordance with NCHRP350 Test Level Three (3).

150.05 CHANNELIZATION

A. GENERAL

Channelization shall clearly delineate the travelway through the work zone and alert drivers and pedestrians to conditions created by work activities in or near the travelway. Channelization shall be done in accordance with the plans and specifications, the MUTCD,

and the following requirements.
All Channelization Devices utilized on any project shall be NCHRP 350 compliant. Any device used on the Work shall be from the Qualified Products List. All devices utilized on the work shall have a decal, logo, or manufacturer's stamping that clearly identifies the device as NCHRP 350 compliant. The Contractor may be required to furnish certification from the Manufacturer for any device to prove NCHRP 350 compliance.

1. Types of Devices Permitted for Channelization in Construction Work Zones:
a. DRUMS:
1) DESIGN: Drums shall meet the minimum requirement of the MUTCD and shall be reflectorized as required in Subsection 150.01.C. The upper edge of the top reflectorized stripe on the drum shall be located a minimum of 33 inches above the surface of the roadway. A minimum drum diameter of 18 inches shall be maintained for a minimum of 34 inches above the roadway.
2) APPLICATION: Drums shall be used as the required channelizing device to delineate the full length of a lane closure, shift, or encroachment, except as modified by this Subsection.
3) TRANSITION TAPERS FOR LANE CLOSURES: Drums shall be used on all transition tapers. The minimum length for a merging taper for a lane closure on the travelway shall be as shown in Table 150-1:

TABLE 150-1

Posted Speed Limit, MPH	LaneWidth 9 Feet	Lane Width 10 Feet	Lane Width 11 Feet	Lane Width 12 Feet	Maximum Drum Spacing in Tapers, (Feet)
	Minimum Taper Length (L) in Feet				
20	60	70	75	80	20
25	95	105	115	125	25
30	135	150	165	180	30
35	185	205	225	245	35
40	240	270	295	320	40
45	405	450	495	540	45
50	450	500	550	600	50
55	495	550	605	660	55
60	540	600	660	720	60
65	585	650	715	780	65
70	630	700	770	840	70
75	675	750	825	900	75

If site conditions require a longer taper then the taper shall be lengthened to fit particular individual situations.
The length of shifting tapers should be at least ½ L.
The length of a closed lane or lanes, excluding the transition taper(s), shall be limited to a total of two (2) miles. Prior approval must be obtained from the

Engineer before this length can be increased.
Nighttime conditions: When a merge taper exists into the night all drums located in the taper shall have, for the length of the taper only, a six (6”) inch fluorescent orange (ASTM Type VI, VII, VIII, IX or X) reflectorized top stripe on each drum. The top six-inch stripe may be temporarily attached to the drum while in use in a taper. All drums that have the six-inch top stripe permanently attached shall not be used for any other conditions.
Multiple Lane Closures:
(a) A maximum of one lane at a time shall be closed with each merge taper.
(b) A minimum tangent length of 2 L shall be installed between each individual lane closure taper.
4) LONGITUDINAL CHANNELIZATION: Drums shall be spaced as listed below for various roadside work conditions except as modified by Subsection 150.06. Spacing shall be used for situations meeting any of the conditions listed as follows:
(a) 40 FOOT SPACING MAXIMUM
(1) For difference in elevation exceeding two inches.
(2) For healed sections no steeper than 4:1 as shown in Subsection 150.06, Detail 150-E.
(b) 80 FOOT SPACING MAXIMUM
(1) For difference in elevation of two inches or less.
(2) Flush areas where equipment or workers are within ten feet of the travel lane.
(c) 200 FOOT SPACING MAXIMUM: Where equipment or workers are more than ten feet from travel lane. Lateral offset clearance to be four feet from the travel lane.
(1) For paved areas eight feet or greater in width that are paved flush with a standard width travel lane.
(2) For disturbed shoulder areas not completed to typical section that are flush to the travel lane and considered a usable shoulder.
REMOVAL OF DRUMS: Drums may be removed after shoulders are completed to typical section and grassed. Guardrail and other safety devices shall be installed in addition, appropriate signs advising of conditions such as soft or low shoulder shall be posted before the drums are removed.
b. VERTICAL PANELS
1) DESGN: All vertical panels shall meet the minimum requirements of the MUTCD. All vertical panels shall have a minimum of 270 square inches of retro-reflective area facing the traffic and shall be mounted with the top of the reflective panel a minimum of 36” above the roadway.
2) APPLICATION: Lane encroachment by the drum on the travelway should permit a remaining lane width of ten feet. When encroachment reduces the travelway to less than ten feet, vertical panels shall be used to restore the travelway to ten feet or greater. No other application of vertical panels will be permitted.
c. CONES
1) DESIGN: All cones shall be a minimum of 28 inches in height regardless of application and shall meet the requirement of the MUTCD. Reflectorization may be deleted from all cones.
2) APPLICATION: For longitudinal channelizing only, cones will be permitted for

daylight closures or minor shifts. (Drums are required for all tapers.) The use of cones for nighttime work will not be permitted. Cones shall not be stored or allowed to be visible on the worksite during nighttime hours.

d. BARRICADES

DESIGN: Type III barricades shall meet the minimum requirements of the MUTCD and shall be reflectorized as required in Subsection 150.01.C. The Contractor has the option of choosing Type III barricades from the Qualified Products List or the Contractor may utilize generic barricades that are approved by the Federal Highway Administration (FHWA). When barricades have been specifically crash tested with signs attached, the contractor has the responsibility to attach the signs as per the manufacturer's recommendations to ensure crashworthiness. If signs are attached to generic barricades or to barricades from the Qualified Products List (QPL) that have not been crash tested with signs attached then the responsibility for crashworthiness and the liability for mounting these signs to the barricades are assumed by the Contractor and the Contractor shall certify that the barricades are crashworthy under FHWA work zone guidelines for NCHRP 350 crashworthy compliance. Any generic barricades used in the work shall be stamped or stenciled to show compliance with NCHRP 350. The use of Type I and Type II barricades will not be permitted.

1) APPLICATION: Type III barricades shall be placed as required by the plans, the Standards, and as directed by the Engineer. All signs mounted on barricades shall be mounted to comply with the requirements of the MUTCD and NCHRP 350 Test Level III. NCHRP 350 crashworthy compliance may require that rigid signs are mounted separate from the Type III barricade.

When a barricade is placed so that it is subject to side impact from a vehicle, a drum shall be placed at the side of the barricade to add target value to the barricade.

e. WARNING LIGHTS:

1) DESIGN: All warning lights shall meet the requirements of the MUTCD.

2) APPLICATION

(a) Type A low-intensity flashing lights shall be used as shown in the Plans, the Standards, and as directed by the Engineer. Flashing lights are not required for advance warning signs in Subsection 150.03.H.

(b) Type C Steady-Burn lights shall be used as shown in the Plans, the Standards, and as directed by the Engineer. Steady-burn lights are not required on drums for merging tapers that exist into the night.

f. TEMPORARY BARRIERS

1) DESIGN: Temporary barriers shall meet the requirements of Sections 620.

2) APPLICATION: Temporary barriers shall be placed as required by the plans, standards, and as directed by the Engineer. When Temporary barrier is located 20 feet or less from a travel lane, yellow reflectors shall be fixed to the top of the barrier at intervals not greater than 40 feet in the longitudinal section and 20 feet in the taper section and shall be mounted approximately two inches above the barrier. If both lanes of a two-lane two-way roadway are within 20 feet or less of the barrier then the reflectors shall be installed for both directions of traffic.

The reflectors shall be 100 square inches (ASTM Type VII or VIII) reflective

sheeting mounted on flat-sheet blanks. The reflectors shall be mounted approximately two inches above the top of the barrier. The reflectors shall be attached to the barrier with adhesive or by a drilled-in anchor type device. The reflectors shall not be attached to a post or board that is placed between the gap in the barrier sections.
Approach end of Temporary barrier shall be flared or protected by an impact attenuator (crash cushion) or other approved treatment in accordance with Construction Details/Standards and Standard Specifications.
On interstate or other controlled access highways where lane shifts or crossovers cause opposing traffic to be separated by less than 40 ft., portable barrier shall be used as a separator.

B. PORTABLE IMPACT ATTENUATORS:

1. DESCRIPTION
This work consists of the furnishing (including spare parts), installation, maintenance, relocation, reuse as required, and removal of Portable Impact Attenuator Units/Arrays.

2. MATERIALS
Materials used in the Attenuator shall meet the requirements of Section 648 for Portable Impact Attenuators.

3. CONSTRUCTION
Portable Impact Attenuator Unit/Arrays installation shall conform to the requirements of Section 648, Manufacturer's recommendations and Georgia Standard 4960 and shall be installed at locations designated by the Engineer, and/or as shown on the plans.

C. TEMPORARY GUARDRAIL ANCHORAGE- Type 12:

1. DESCRIPTION
This work consists of the furnishing, installation, maintenance and removal or Temporary Guardrail Anchorage- Type 12 used for Portable Barrier or temporary guardrail end treatment.

2. MATERIALS
Materials used in the Temporary Guardrail Anchorage- Type 12 shall meet the requirements of Subsection 641.2 of the Specifications and current Georgia Standards and may be new or used. Materials salvaged from the Project which meet the requirements of Standards may be utilized if available. The use of any salvaged materials will require prior approval of the Engineer.

3. CONSTRUCTION
Installation of the Temporary Guardrail Anchorage- Type 12 shall conform to the requirements of the Plans, current Georgia Standards and Subsection 641.3 of the Specifications. Installation shall also include sufficient additional guardrail and appurtenances to effect the transition and connection to Temporary Concrete Barrier as required by the details in Georgia Standard 4960.

150.06 DIFFERENCES IN ELEVATION BETWEEN TRAVEL LANES AND SHOULDERS (SEE SUBSECTION 150.06.G FOR PROJECTS CONSISTING PRIMARILY OF ASPHALTIC CONCRETE RESURFACING ITEMS)

Any type of work such as paving, grinding, trenching, or excavation that creates a difference in elevation between travel lanes or between the travelway and the shoulder shall not begin until the Contractor is prepared and able to continuously place the required typical section to within two inches (2") of the existing pavement elevation. For any areas that the two inches minimum difference in elevation cannot be accomplished the section shall be healed as shown in Detail 150-E. If crushed stone materials are used to provide a healed section no separate payment will be made for the material used to heal any section. The Contractor may submit a plan to utilize existing pay items for crushed stone provided the plan clearly demonstrates that the materials used to heal an area will be incorporated into the work with minimal waste. Handling and hauling of any crushed stone used to heal shall be kept to a minimum. The Engineer shall determine if the crushed stone used to heal meets the specifications for gradation and quality when the material is placed in the final location.

A maximum of sixty (60) calendar days shall be allowed for conditions to exist that require any section or segment of the roadway or ramp to continue to require a healed section as described by Detail 150-E. Failure to meet this requirement shall be considered as nonperformance of Work under Subsection 150.08.

When trenching or excavation for minor roadway or shoulder widening is required, all operations at one site shall be completed to the level of the existing pavement in the same work day.

Any channelization devices utilized in the work shall conform to the requirements of Subsection 150.05 and to the placement and spacing requirements in Details 150-B, 150-C, 150-D, and 150-E shown in this section.

Any construction activity that reduces the width of a travel lane shall require the use of a W-20 sign with the legend "LEFT/RIGHT LANE NARROWS". Two 24" x 24" red or red/orange flags may be mounted above the W-20 sign. The W-20 sign shall be located on the side of the travelway that has been reduced in width just off the travelway edge of pavement. The W-20 sign shall be a minimum of 500 feet in advance of any channelization devices that encroach on the surface of travelway. A portable changeable message sign may be used in lieu of the W-20 sign.

GENERAL/TIME RESTRICTIONS:

A. STONE BASES, SOIL AGGREGATE BASE AND SOIL BASES

1. All Highways

Differences in elevation of more than two inches between surfaces carrying or adjacent to traffic will not be allowed for more than a 24-hour period. A single length of excavated area that does not exceed 1000 feet in total length may be left open as a start up area for periods not to exceed 48 hours provided the Contractor can demonstrate the ability to continuously excavate and backfill in a proficient manner. Prior approval of the Engineer shall be obtained before any startup area may be allowed.

2. LIMITED ACCESS HIGHWAY RAMPS (INTERSTATES):
On projects that include ramp rehabilitation work, one ramp at a time may be excavated for the entire length of the ramp from the gore point of the ramp with the interstate mainline to the intersection with the crossing highway. This single ramp may remain excavated with a vertical difference in elevation greater than two (2") inches for a maximum of fourteen (14) calendar days with drums spaced at twenty (20') feet intervals as shown in Detail 150-B and a buffer space accepted under Section 150.06.F. After fourteen (14) calendar days the section shall be healed as required for all other highways. This area will be allowed in addition to the 1000 feet allowed for all other highways.

B. ASPHALT BASES, BINDERS AND TOPPINGS

1. DIFFERENCES IN ELEVATION BETWEEN THE SURFACES OF ADJACENT TRAVELWAYS
Travel lanes shall be paved with a plan that minimizes any difference in elevation between adjacent travel lanes. The following limitations will be required on all work:
a. Differences of two inches (2") or less may remain for a maximum period of fourteen (14) calendar days.
b. Differences of greater than two inches (2") shall be permitted for continuous operations only.
EMERGENCY SITUATIONS: Inclement weather, traffic accidents, and other events beyond the control of the Contractor may prevent the work from being completed as required above. The Contractor shall notify the Engineer in writing stating the conditions and reasons that have prevented the Contractor from complying with the time limitations. The Contractor shall also outline a plan detailing immediate steps to complete the work. Failure to correct these conditions on the first calendar day that conditions will allow corrective work shall be considered as nonperformance of Work under Subsection 150.08.

2. Differences in Elevation Between Asphalt Travelway and Paved Shoulders
Differences in elevation between the asphalt travelway and asphalt paved shoulders shall not be allowed to exist beyond the maximum durations outlined below for the conditions shown in Details 150-B, 150-C, 150-D, and 150-E:
Detail 150-B conditions shall not be allowed for more than 24 hours. A single length that does not exceed 1000 feet in total length may be left open for periods not to exceed 48 hours provided the Contractor can demonstrate the ability to continuously pave in a proficient manner. Prior approval of the Engineer shall be obtained before any section is allowed to exceed 24 hours. Any other disturbed shoulder areas shall be healed as in Detail 150-E.
Detail 150-C conditions will not be allowed for more than 48 hours.
Detail 150-D conditions will not be allowed for more than 30 calendar days.
Detail 150-E conditions will not be allowed for more than 60 calendar days.
Failure to meet these requirements shall be considered as non-performance of Work under Subsection 150.08.

C. PORTLAND CEMENT CONCRETE

Work adjacent to a Portland Cement Concrete travel way, which involves the following types of base and shoulders, shall be accomplished according to the time restrictions outlined for each type of base or shoulder. Traffic control devices shall be in accordance with Subsection 150.05.

1. Cement Stabilized Base

Work adjacent to the traveled way shall be healed as per Detail 150-E within forty eight (48) hours after the seven (7)-calendar day curing period is complete for each section placed. During the placement and curing period, traffic control shall be in accordance Detail 150-B.

2. Asphaltic Concrete Base

When an asphaltic concrete base is utilized in lieu of a cement stabilized base the asphaltic concrete base shall be healed as per Detail 150-E within forty-eight (48) hours after the placement of each section of asphaltic concrete base. For the first forty eight hours traffic control shall comply with Detail 150-B.

3. Concrete Paved Shoulders

Concrete paved shoulders shall be placed within sixty (60) calendar days after the removal of each section of existing shoulder regardless of the type of base materials being placed on the shoulders. During the placement period, traffic control devices shall be in accordance with the appropriate detail based on the depth of the change in elevation. Differences in elevation of more than two inches between the travel way and the shoulder will not be allowed for more than a 24-hour period. A single length of excavated area that does not exceed 1000 feet in total length may be left open as a start up area for periods not to exceed 48 hours provided the Contractor can demonstrate the ability to continuously excavate and backfill in a proficient manner. Prior approval of the Engineer shall be obtained before any startup area may be allowed. Any other disturbed shoulder areas shall be healed as in Detail 150-E.

4. Asphaltic Concrete Shoulders

A difference in elevation that meets the requirements of Detail 150-B shall not be allowed to exist for a period greater than forty-eight (48) hours. After the removal of the existing shoulder the section or segment of travelway may be healed with stone as per Detail 150-E for a maximum of fourteen (14) calendar days. Asphaltic concrete shoulders shall be placed within two (2”) inches or less of the travel way surface within fourteen (14) calendar days after the removal of the stone healed section or the removal of each section of the existing shoulder. The two (2”) inches or less difference in elevation shall not remain in existence for a period that exceeds thirty (30) calendar days unless the paved shoulder is utilized as a detour for the traveled way. During the placement period, traffic control shall be in accordance with the appropriate detail based on the depth of the change in elevation.

The Contractor may propose an alternate plan based on Subsection 150.06.F. Failure to meet the above requirements and time restrictions shall be considered as nonperformance of Work under Subsection 150.08.

D. MISCELLANEOUS ELEVATION DIFFERENTIALS FOR EXCAVATIONS ADJACENT TO THE TRAVELWAY

Drainage structures, utility facilities, or any other work which results in a difference in elevation adjacent to the travelway shall be planned and coordinated to be performed in such a manner to minimize the time traffic is exposed to this condition. The excavation should be back filled to the minimum requirements of Detail 150-E as soon as practical. Stage construction such as plating or backfilling the incomplete work may be required. The difference in elevation shall not be allowed to exist for more than five (5) calendar days under any circumstances. Failure to correct this condition shall be considered as non-performance of Work under Subsection 150.08.

E. CONDUIT INSTALLATION IN PAVED AND DIRT SHOULDERS

The installation of conduit and conduit systems along the shoulders of a traveled way shall be planned and installed in a manner to minimize the length of time that traffic is exposed to a difference in elevation condition. The following restrictions and limitations shall apply:

1. Differences in Elevation of Two (2") Inches or Less

The shoulder may remain open when workers are not present. When workers are present the shoulder shall be closed and the channelization devices shall meet the requirements of Subsection 150.05. The difference in elevation on the shoulder shall remain for a maximum period of fourteen (14) calendar days.

2. Differences in Elevation Greater Than Two (2") Inches

The shoulder shall be closed. The shoulder closure shall not exceed twenty-four (24) hours in duration unless the Special Conditions in Subsection 150.11 modifies this restriction or the Engineer allows the work to be considered as a continuous operation. Failure to meet these requirements shall be considered as non-performance of Work under Subsection 150.08.

F. MODIFICATIONS TO DETAILS 150-B, 150-C, 150-D AND 150-E

The Contractor may propose any alternate temporary traffic control plan that utilizes a portion of the travel lane as a "buffer space". This buffer space may allow for an enhanced work area that will allow for the placement of materials to proceed at a pace that could not be achieved with the time restriction requirements outlined in Section 150.06.A, 150.06.B, and 150.06.C. The Contractor may propose modified time restrictions based on the use of the buffer space. Any proposed modifications in the time duration allowed for the differences in elevations to exist shall be reviewed by the Engineer as a component of the overall TTC plan. No modifications shall be made until the proposed plan is accepted by the Engineer. The Engineer shall have no obligation to consider any proposal which results in an increase in cost to the Department.

For the travel lane described in each of the details 150-B, 150-C, 150-D and 150-E it is presumed that the pavement marking edgeline (yellow or white solid stripe) is located at the very edge of the travel lane surface. A buffer space (temporary paved shoulder) that utilizes a portion of the travel lane should be six (6') feet in width desirable but shall not be less than four (4') feet in width. Any remaining travel lane(s) shall not be less than ten (10') feet in width.

If the proposed shifting of the traffic to obtain a buffer space and maintain a minimum

travel lane(s) of ten (10') feet requires the use of any existing paved shoulders then the cost of maintenance and repair of the existing paved shoulder(s) shall be the responsibility of the Contractor. The Contractor is responsible for the costs of maintenance and repairs even if the existing paved shoulder(s) is to be removed in a later stage of the work.
Existing shoulders that have rumble strips shall have the rumble strips removed before the shoulder can be utilized as part of the travel lane. The cost of the removal of the rumble strips shall be done at no cost to the Department even if the shoulder is to be removed in a later stage of the work.
Any modifications to the staging and time restrictions that are approved as part of the TTC plan shall be agreed to in writing. Failure to meet these modifications shall be considered as non-performance of the Work under Subsection 150.08.

G. ASPHALTIC CONCRETE RESURFACING PROJECTS
SHOULDER CONSTRUCTION INCLUDED AS A PART OF THE CONTRACT: When the placement of asphaltic concrete materials creates a difference in elevation greater than two (2") inches between the earth shoulder (grassed or un-grassed) and the edge of travelway, or between the earth shoulder and a paved shoulder that is less than four (4') feet in width, the Contractor shall place and maintain drums in accordance with the requirements of Subsection 150.05A.1.a.4). When the edge of the paved surface is tapered with a 30-45 degree wedge, drums may be spaced at 2.0 times the speed limit in MPH. Drums shall remain in place and be maintained until the difference in elevation has been eliminated by the placement of the appropriate shoulder materials.
SHOULDER CONSTRUCTION NOT INCLUDED AS A PART OF THE CONTRACT: When the placement of asphaltic concrete materials creates a difference in elevation greater than two (2") inches between the earth shoulder (grassed or un-grassed) and the edge of travelway or between the earth shoulder and a paved shoulder that is less than four (4') feet in width, the Contractor shall notify the Engineer, in writing, when the resurfacing work including all punchlist items has been completed.
See Subsection 150.03.L for the requirements for "LOW/SOFT SHOULDERS" and "SHOULDER DROP-OFF" signage.
Location of drums when Elevation Difference exceeds 4 inches. Drums spaced at 20-foot intervals.
Note: If the travel way width is reduced to less than 10 feet by the use of drums, vertical panels shall be
used in lieu of drums.
Drums spaced at 40-foot intervals. Location of drums when Elevation
Difference is 2+ inches to 4 inches.
New Construction Travel Lane
ELEVATION DIFFERENCE 2+ to 4 inches
DETAIL 150-C
6 inches ±
New Construction Travel Lane
ELEVATION DIFFERENCE GREATER THAN 4 INCHES
DETAIL 150-B
Drums spaced at 80-foot intervals. Location of drums when Elevation
Difference is 2 inches or less. Location of drums immediately after completion of healed sections spaced at 40-foot intervals.

150.07 FLAGGING AND PILOT CARS:

A. FLAGGERS

Flaggers shall be provided as required to handle traffic, as specified in the Plans or Special Provisions, and as required by the Engineer.

New Construction Travel Lane
HEALED SECTION
DETAIL 150-E
2 feet ±
Compacted graded aggregate, TOP OF DRUM TO BE LEVEL
sub base material or dirt.
NO STEEPER THAN 4:1
New Construction Travel Lane
ELEVATION DIFFERENCE OF 2 INCHES OR LESS
DETAIL 150-D
4 feet ±

B. FLAGGER CERTIFICATION

All flaggers shall meet the requirements of the MUTCD and shall have received training and a certificate upon completion of the training from one of the following organizations:

National Safety Council
Southern Safety Services
Construction Safety Consultants
Ivey Consultants
American Traffic Safety Services Association (ATSSA)

Certifications from other agencies will be accepted only if their training program has been approved by any one of the organizations listed above.

Failure to provide certified flaggers as required above shall be reason for the Engineer suspending work involving the flagger(s) until the Contractor provides the certified flagger(s). Flaggers shall have proof of certification and valid identification (photo I.D.) available any time they are performing flagger duties.

C. FLAGGER APPEARANCE AND EQUIPMENT

Flaggers shall wear high-visibility clothing in compliance with Subsection 150.01.A and shall use a Stop/Slow paddle meeting the requirements of the MUTCD for controlling traffic. The Stop/Slow paddles shall have a shaft length of seven (7) feet minimum. The Stop/Slow paddle shall be retro-reflectorized for both day and night usage. In addition to the Stop/Slow paddle, a flagger may use a flag as an additional device to attract attention. This flag shall meet the minimum requirements of the MUTCD. The flag shall, as a minimum, be 24” inches square and red or red/orange in color. For night work, the vest shall have reflectorized stripes that meet the requirements of the MUTCD.

D. FLAGGER WARNING SIGNS

Signs for flagger traffic control shall be placed in advance of the flagging operation in accordance with the MUTCD. In addition to the signs required by the MUTCD, signs at regular intervals, warning of the presence of the flagger shall be placed beyond the point where traffic can reasonably be expected to stop under the most severe conditions for that day’s work.

E. PILOT VEHICLE REQUIREMENTS
Pilot vehicles will be required during placement of bituminous surface treatment or asphaltic concrete on two-lane roadways unless otherwise specified. Pilot vehicles shall meet the requirements of the MUTCD.

F. PORTABLE TEMPORARY TRAFFIC CONTROL SIGNALS
The Contractor may request, in writing, the substitution of portable temporary traffic control signals for flaggers on two-lane two-way roadways provided the temporary signals meets the requirements of the MUTCD, Section 647, and Subsection 150.02.A.8. As a part of this request, the Contractor shall also submit an alternate temporary traffic control plan in the event of a failure of the signals. Any alternate plan that requires the use of flaggers shall include the use of certified flaggers. The Contractor shall obtain the approval of the Engineer before the use of any portable temporary traffic control signals will be permitted.

150.08 ENFORCEMENT
The safe passage of pedestrians and traffic through and around the temporary traffic control zone, while minimizing confusion and disruption to traffic flow, shall have priority over all other Contractor activities. Continued failure of the Contractor to comply with the requirements of Section 150 (TRAFFIC CONTROL) will result in non-refundable deductions of monies from the Contract as shown in this Subsection for non-performance of Work.
Failure of the Contractor to comply with this Specification shall be reason for the Engineer suspending all other work on the Project, except erosion control and traffic control, taking corrective action as specified in Subsection 105.15, and/or withholding payment of monies due to the Contractor for any work on the Project until traffic control deficiencies are corrected. These other actions shall be in addition to the deductions for non-performance of traffic control.

SCHEDULE OF DEDUCTIONS FOR EACH CALENDAR DAY OF DEFICIENCIES OF TRAFFIC CONTROL
INSTALLATION AND/OR MAINTENANCE
ORIGINAL TOTAL CONTRACT AMOUNT
From More Than To and Including Daily Charge
$0 $100,000 $200
$100,000 $1,000,000 $500
$1,000,000 $5,000,000 $1,000
$5,000,000 $20,000,000 $1,500
$20,000,000 $40,000,000 $2,000
$40,000,000 $---------- $3,000

150.09 MEASUREMENT
A. TRAFFIC CONTROL
When listed as a pay item in the Proposal, payment will be made at the Lump Sum price bid, which will include all traffic control not paid for separately, and will be paid as follows: When the first Construction Report is submitted, a payment of 25 (twenty-five) percent of the Lump Sum price will be made. For each progress payment thereafter, the total of the Project percent complete shown on the last pay statement plus 25 (twenty-five) percent will be paid (less previous payments), not to exceed one hundred (100) percent.
When no payment item for Traffic Control-Lump Sum is shown in the Proposal, all of the

requirements of Section 150 and the Temporary Traffic Control Plan shall be in full force and effect. The cost of complying with these requirements will not be paid for separately, but shall be included in the overall bid submittal.

B. SIGNS

When shown as a pay item in the contract, interim special guide signs will be paid for as listed below. All other regulatory, warning, and guide signs, as required by the Contract, will be paid for under Traffic Control Lump Sum or included in the overall bid submitted.

1. Interim ground mounted or interim overhead special guide signs will be measured for payment by the square foot. This payment shall be full compensation for furnishing the signs, including supports as required, erecting, illuminating overhead signs, maintaining, removing, re-erecting, and final removal from the Project. Payment will be made only one time regardless of the number of moves required.
2. Remove and reset existing special guide signs, ground mount or overhead, complete, in place, will be measured for payment per each. Payment will be made only one time regardless of the number of moves required.
3. Modify special guide signs, ground mount or overhead, will be measured for payment by the square foot. The area measured shall include only that portion of the sign modified. Payment shall include materials, removal from posts or supports when necessary, and remounting as required.

C. TEMPORARY BARRIER

Temporary Barrier shall be measured as specified in Sections 620.

D. CHANGEABLE MESSAGE SIGN, PORTABLE

Changeable Message Sign, Portable will be measured as specified in Section 632.

E. TEMPORARY GUARDRAIL ANCHORAGE, Type 12

Temporary Guardrail Anchorage- Type 12 will be measured by each assembly, complete in place and accepted according to the details shown in the plans, which shall also include the additional guardrail and appurtenances necessary for transition and connection to Temporary Concrete Barrier. Payment shall include all necessary materials, equipment, labor, site preparation, maintenance and removal.

F. TRAFFIC SIGNAL INSTALLATION- TEMPORARY

Traffic Signal Installation- Temporary will be measured as specified in Section 647.

G. FLASHING BEACON ASSEMBLY

Flashing Beacon Assemblies will be measured as specified in Section 647.

H. PORTABLE IMPACT ATTENUATORS

Each Portable Impact Attenuator will be measured by the unit/array, which shall include all material components, hardware, incidentals, labor, site preparation, and maintenance, including spare parts recommended by the manufacturer for repairing accident damage. Each unit will be measured only once regardless of the number of locations installed, moves required, or number of repairs necessary because of traffic damage. Upon completion of the project, the units shall be removed and retained by the Contractor.

I. PAVEMENT MARKINGS
Pavement markings will be measured as specified in Section 150.

150.10 PAYMENT:
When shown in the Schedule of Items in the Proposal, the following items will be paid for separately.
Item No. 150. Traffic Control …… Lump Sum
Item No. 150. Traffic Control, Solid Traffic Stripe _ Inch, (Color)…. per Linear Mile
Item No. 150. Traffic Control, Skip Traffic Stripe _ Inch, (Color) …. per Linear mile
Item No. 150. Traffic Control, Solid Traffic Stripe,
Thermoplastic ____ Inch, (Color) …….. per Linear Mile
Item No. 150. Traffic Control, Skip Traffic Stripe,
Thermoplastic _____ Inch, (Color) …… per Linear Mile
Item No. 150. Traffic Control, Pavement Arrow with
Raised Reflectors ……..……. per Each
Item No. 150. Traffic Control, Raised Pavement Markers-All Types. per Each
Item No. 150. Interim Ground Mounted Special Guide Signs …….. per Square Foot
Item No. 150. Interim Overhead Special Guide Signs ……. per Square Foot
Item No. 150. Remove & Reset Existing Special Guide Signs,
Ground Mount, Complete in Place …… per Each
Item No. 150. Remove & Reset, Existing Special Guide Signs,
Overhead, Complete in Place ……. per Each
Item No. 150. Traffic Control, Portable Impact Attenuator……. per Each
Item No. 150. Traffic Control, Pavement Markers, Words
and Symbols …… per Square Foot
Item No. 150. Traffic Control, Pavement Arrow (Painted) with
Raised Reflectors …… per Each
Item No. 150. Traffic Control, Workzone Law Enforcement…….. per Hour
Item No. 150. Modify Special Guide Sign, Ground Mount……..…… per Square Foot
Item No. 150. Modify Special Guide Sign, Overhead…… per Square Foot
Item No. 620. Temporary Barrier…….. per Lineal Foot
Item No. 632. Changeable Message Sign, Portable ……. per Each
Item No. 641. Temporary Guardrail Anchorage, Type 12 …… per Each
Item No. 647. Traffic Signal Installation, Temp …… Lump Sum
Item No. 647. Flashing Beacon Assembly, Structure Mounted ….. per Each
Item No. 647. Flashing Beacon Assembly, Cable Supported …….. per Each

Document Control

Issue Date	Comments	Revisions	Revision #
10-7-99		Deleted I-75 project info	1
11-3-99		Corrected the Multi-Cell conduit description in the payment section.	2
12/30/99	Project: CM-00TS(10) Ct. 1 Fulton County P.I. No. 713155 Project: CM-00TS(10) Ct. 2 DeKalb And Fulton County P.I. No. 713157		
2/3/00	Project: CM-056-1(57) Fulton County P.I. No. 721950		
3/21/00 3/22/00	Revised measurement to include drilling shoulder, installing #4 rebar, replacing transverse joint material, directional bore (for trench/bore option), restore concrete. Add steel as material for conduit spacers; delete rqmt for molded base Revise mat'l certification text, including reference to transmittal form Delete prohibition on gluing outerduct. Delete ref to "flexible" bends/sweeps; include expansion joints for bridge attached multi-cell Add rqmts for accessories and fittings for bullet resistant fiberglass Add statement for alternate innerduct colors Delete flexible bends; allow > bend radii for fixed bends/sweeps. Slack pull tape in conduit, not vault. Inner rings on duct plugs. Test tone wire before and after full-depth conduit backfill. Add underbridge installation requirements Add text to retain existing 682 and add this Special Provision	682.13 682.06.1.3 682.02.1 682.05.4 682.05.5 682.05.6.1.4 682.05.6.2.1, 682.05.6.2.2 682.05.6.4 682.08.2 682.09 682.10.3 682.12.1 p.1	3
3/30/00	Add 1" innerduct. Correct dimensions on 1" Nonmetal, Type 3 conduit	682.04.1 682.07.1.1	4
4/3/00	Reword exception for marking tape where full depth concrete backfill. Prohibit coupling in bores	682.03.1 682.07.2	5
4/3/00	Project: CM-285-1(360) DEKALB COUNTY P.I. NO. 713410		

5/17/00	Add “Conduit, Fiberglass” section 682.08 and renumber 682.08 through 682.11 Modify the alignment line and text requirements (added sketch). Add “All conduit and fittings shall be black.” Insert new subsection for “Conduit, Fiberglass” Add detectable pull tape Add fiberglass pay items for multicell and conduit	682.02 682.05.2 682.05.6.1(4) 682.08 682.09 682.14	6
8-23-2000	Revised section numbers so that they won’t be in conflict with the current 682 spec.		
12-6-00	Replaced omitted words per SCR No 68-1.	682.09.1; 682.14	7
12-6-00	Project: CM-285-1(360) DEKALB COUNTY P.I. NO. 713410		
2-9-01	Document control no. NAV01-047		1.0
11-9-01	Changes as per SCR # 283	682.04 682.05.6 682.05.6.1 682.05.6.3	2.0
1/7/02	Changes as per SCR # 285 and SCR # 287	682.06.1.2 682.06.1.2.2 682.06.037 682.06.3 682.07	3.0
2/4/02	Document to Mike England for additional changes as per SCR # 285		3.1
3/11/02	Published		4.0
7/31/02	Further changes as per SCR # 285 To Mike England for QA	682.06.1.2 682.04.2 682.06.3 682.07.1.4 682.07.2 682.06.3	4.1
8/1/02	Published to server		5.0
8/15/02	Inclusion of metric equivalent units. SCR # 327	682.03.2; 682.03.3; 682.04; 682.05.1; 682.05.2; 682.05.2.1; 682.05.6.1; 682.05.6.1.2; 682.05.6.1.4; 682.05.6.2.1; 682.05.6.2.2; 682.05.6.3; 682.05.6.4; 682.06.1; 682.07.1; 682.08.1; 682.09.1; 682.09.2; 682.11.2; 682.14	5.1
10/8/02	Published to server		6.0
11/25/02	Reformatted as per SCR # 372		6.1
12/18/02	Published to server		7.0
9/4/03	Update as per SCR # 409	682.2.04.2; 682.2.04.3; 682.2.06.1.A; 682.2.06.1.B; 682.2.07.1.A; 682.2.07.1.B; 682.2.07.1.C; 682.2.07.1.D;	7.1

		682.2.09.2; 682.2.10;	
9/4/03	QA	682.2.04.3 change from SDR11.5 to SDR11	7.2
9/4/03	Published to server		8.0
10/8/03	Update per SCR 418	682.2.06.2; 682.2.07.2	8.1
10/9/03	Published to server		9.0
5/11/05	Updated per SCR # 508, deleted reference to 680.01, added Traffic Safety & Design to footer	682.02, 682.05	9.1
6/9/05	Published to server		10.0
1/23/06	SCR # 535	682.2.02; 682.2.05.F.1a; 682.2.05.F.1b; 682.2.05.F.1c; 682.2.06	10.1
1/25/06	Published to server		11.0
3/21/06	SCR # 612	682.2.06.C, 682.2.07.C	11.1
3/21/05	Published to server		12.0
12/18/06	SCR #692 Added power service conduit Ph2b Comment #384	682.1; 682.2.02; 682.2.04; 682.2.13; 682.2.14; 682.4; 682.5	12.1
3/2/07	SCR #692 – CAR Team review	Footer; 682.2.13; 682.2.14	12.2
3/6/07	Published to server		13.0
4/4/07	SCR #718	682.2.05.F.3; 682.2.11.A	13.1
4/17/07	Published server		14.0

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DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
SPECIAL PROVISION

Project:
County
P.I. NO.

SECTION 682 – ELECTRICAL WIRE, CABLE, AND CONDUIT

Section 682 - Electrical Wire, Cable, And Conduit

Add the following:

Delete Subsection 682.1 General Description and substitute the following:

682.1 General Description

This work includes furnishing and installing wire, cable, and conduit for roadway and structure lighting systems, complete or as indicated on the Plans. This work also consists of furnishing and installing a Multi-cell or Continuous Flexible Conduit System for Fiber Optic Cable, complete or as indicated on the Plans. The installation of conduit for fiber optic cable shall not require the presence of a qualified

electrician on the job site.

Add the following to Subsection 682.2:

All multi-cell and continuous flexible conduit products shall meet the General Specifications as set out in these Special Provisions. Those products shall be installed, applied, inspected, and/or utilized in accordance with the Construction Section of these Special Provisions. Prior to any conduit work and within 60 days after Notice to Proceed, submit catalog sheets, engineering drawings, and maintenance procedures for review by the Engineer for all products and procedures in these Special Provisions to be used on the Project. If the products to be used are not specified within these Special Provisions or not listed separately and/or completely on the details of the Plans, submit catalog sheets, engineering drawings, factory specifications, a set of installation procedures, and a set of operation and maintenance procedures (for multi-cell conduit) for review by the Engineer. No work shall be done using these products until after submittals have been approved by the Engineer.

A summary of the products, their Sections, and each product's specification included in these Special Provisions are listed below:

A. MARKING TAPE ..... Section 682.2.03

Visible marking tape, location and warning system.

B. CONDUIT, NONMETAL, TYPE 2 - POWER SERVICE ..... Section 682.2.04

All conduit shall be Schedule 40 polyvinyl chloride.

C. MULTI-CELL FACTORY INSTALLED DUCT SYSTEM ..... Section 682.2.05

The multi-cell innerducts shall be colored red, white, yellow, and orange, and utilized as noted: red = hybrid fiber optic cable; white = open spare/interconnect/control circuit; yellow = single mode fiber optic cable; and orange = multi-mode fiber optic cable.

D. CONDUIT DUCT BANK ..... Section 682.2.06

Conduit duct bank shall be a configuration of high density polyethylene conduits.

E. CONDUIT, NONMETAL, TYPE 3 ..... Section 682.2.07

F. CONDUIT, FIBERGLASS ..... Section 682.2.08

G. PULL TAPE ..... Section 682.2.09

H. DUCT PLUGS ..... Section 682.2.10

I. CONDUIT DETECTION WIRE ..... Section 682.2.11

J. ELECTRICAL COMMUNICATION BOX ..... Section 682.2.13

K. ELECTRICAL COMMUNICATION BOX REHABILITATION ..... Section 682.2.14

Add the following Subsections: 682.2.02 – 682.2.14

682.2.02 MATERIAL CERTIFICATION

The following chart provides an outline of the submittal requirements for the equipment and components for this pay item. This chart shall be used as a guide and does not relieve the Contractor from submitting additional information to form a complete submittal package.

Submit submittal data for all equipment, materials, test procedures, and routine maintenance procedures required for these items within 60 calendar days after the Notice To Proceed and prior to any installation, unless noted otherwise in the Contract Documents.

Submit to the Engineer for approval, six (6) copies of the manufacturer's descriptive literature (catalog cuts), technical data, operational documentation, service and maintenance documentation, and all other materials required within these Special Provisions.

Provide submittal data that is neat, legible, and orderly. Neatly organize each package of submittal data and separate by hardware item. Use the "Materials Certification Package Index and Transmittal Form", contained in Section 105.02 of the Special Provisions, for each pay item to document and list all material and components that are included in the submittal package. Any submittal data submitted without the index/transmittal form or that is incomplete will be rejected.

Item	Specification Section	Catalog Cuts	Installation Procedure	Installation Equipment	Maintenance Procedures
Marking Tape	682.2.03	X			
Conduit, Nonmetal, Type 2 - Power Service	682.2.04	X			
Multi-Cell Factory Installed Duct System	682.2.05	X	X		X
HDPE Conduit in Duct Banks	682.2.06	X			
Couplings	682.2.06	X	X	X	
Conduit, Nonmetal, Type 3	682.2.07	X			
Couplings	682.2.07	X	X	X	
Conduit, Fiberglass	682.2.08	X			
Pull Tape	682.2.09	X			
Duct Plugs	682.2.10	X			
Conduit Detection Wire	682.2.11	X			
Electrical Communication Box, Type ___	682.2.13	X			
Electrical Communication Box Rehabilitation	682.2.14	X			

Submittal data shall include complete technical and performance specifications on all elements of the conduit system. Below is a sample listing of submittal data requirements by 682.X.X subsection.

For *Subsection 682.2.03 Marking Tape* submit materials submittal data for the marking tape.

For *Subsection 682.2.04 Conduit, Nonmetal, Type 2 - Power Service* submit materials submittal data for the conduit, fittings, pull boxes, and electrical service wire.

For *Subsection 682.2.05 Multi-Cell Factory Installed Conduit System* submit materials data for the conduit system, innerduct, outerduct, coupling body, fittings, accessories, bends and sweeps, installation procedures, and maintenance procedures.

For *Subsection 682.2.06 Conduit Duct Bank* submit materials submittal data for conduit, couplings, and coupling procedures.

For *Subsection 682.2.07 Conduit, Nonmetal, Type 3* submit materials submittal data for conduit, couplings, and coupling procedures.

For *Subsection 682.2.08 Conduit, Fiberglass* submit materials submittal data for conduit, couplings and fittings, and coupling and fittings procedures.

For *Subsection 682.2.09 Pull Tape* submit materials submittal data for pull tape and installation procedure.

For *Subsection 682.2.10 Duct Plugs* submit materials submittal data for duct plugs for empty conduit and duct plugs with cable installed.

For *Subsection 682.2.11 Conduit Detection Wire* submit materials submittal data for conduit detection wire and testing procedure.

For *Subsection 682.2.13 Electrical Communication Box, Type ___* submit materials submittal data for electrical communication box, ring and cover, conduit terminators, cable racks and hardware, sealant, and conduit alignment jigs or spacers.

For *Subsection 682.2.14 Electrical Communication Box, Rehabilitation* submit materials submittal data for cable racks and hardware.

682.2.03 MARKING TAPE SPECIFICATIONS

A. Requirement For Use

When fiber optic cable is installed underground in conduit or directly buried or when empty conduit is installed, install a dielectric marking tape directly over the conduit or cable below finished grade. The tape shall be installed for the full length of the cable or conduit run. When the conduit or cable is in a trench backfilled with full depth concrete, no marking tape shall be installed.

B. Printing

The color of the tape shall be orange with "GEORGIA DOT FIBER OPTIC CABLE-CALL 1-404-624-2661" printed every 6.5 ft (2.0 m).

C. Physical Properties

The tape shall be a dielectric, polyolefin film tape, 0.004 in. (0.1 mm) thick, 3 in. (76 mm) wide. The tape shall be constructed using material and ink colors which will not change when exposed to acids and other destructive substances commonly found in the soil.

The physical test methods along with typical properties and values are specified below:

PROPERTY	METHOD	VALUE
Standard Weight	ASTM-D2103	0.02 lb/ft^2 (0.1 kg/m^2)
Thickness-Overall	ASTM-D2103	0.004 in. (0.1 mm)
3" Tensile Break-MD	ASTM-D882	35 lbf (160 N)
3" Tensile Strength-MD	ASTM-D882	2900 psi (20000 kPa)
3" Tensile Break-TD	ASTM-D882	38 lbf (170 N)
3" Tensile Strength-TD	ASTM-D882	3160 psi

		(21790 kPa)
Elongation-MD	ASTM-D882	530%
Elongation-TD	ASTM-D822	660%
PPT Resistance-MD	ASTM-D2582	12 lbf (53 N)
PPT Resistance-TD	ASTM-D2582	14 lbf (62 N)
Tear Strength-3" x 8"-MD	ASTM-D2261	24 lbf (110 N)
Tear Strength-3" x 8"-TD	ASTM-D2261	32 lbf (140 N)

PPT – Puncture Propagation Tear
MD/TD – Machine Direction/ Transverse Direction

682.2.04 POWER SERVICE, NONMETAL, TYPE 2 - POWER SERVICE

Install conduit as indicated in the Plans. Conduit and fittings shall be Schedule 40 unplasticized PolyVinyl Chloride (PVC) that meets Federal Specification WC-1904-A. If the conduit is shown in the plans crossing pavement, install the conduit under the pavement via the directional bore method in accordance with Section 615 and Details. If using the directional bore method of installation, install a Schedule 40, UL-listed conduit suitable for being installed via the directional bore method that does not require solvent welds. Install Type 2 pull boxes if in unpaved shoulder or concrete ground mounted electrical junction boxes if in pavement along the conduit route between the electrical service pole and the equipment cabinet requiring power. Install the pull boxes as described in Section 647 and in Details that meet requirements in Section 925 except that the covers should be furnished with the logo “ELECTRICAL”. Make any repairs to pavement required as a result of the installation of electrical junction boxes in accordance with Department standards. Within the conduit and pull boxes, install electrical service wire that meets requirements in Section 922. Install any transformers as may be required because of voltage drops between the electrical service pole and the equipment cabinet requiring power.

682.2.05 MULTI-CELL “FACTORY INSTALLED” CONDUIT SYSTEM

A. DESCRIPTION

The multi-cell conduit system shall be a pre-assembled conduit manufactured from a 4 in. (102 mm) round outerduct containing either 3 or 4 factory installed round innerducts. The innerducts shall be held together in a square (4 conduit system) or triangular (3 conduit system) configuration by a system of spacers, bands, or other mechanism. The coupling system shall be resistant to water infiltration, air loss during cable installation and shall be capable of locking the system tightly together in order to not allow free twisting of the innerducts.

B. OUTERDUCT

All outerduct shall be 4 in. (102 mm) trade size and shall have a nominal 20 ft (6 m) lay length except for the steel conduit which shall have a minimum lay length of 10 ft (3 m). Types to be used shall be designated on the plans or in the proposal. All outerduct shall conform to the following requirements.

1. The outerduct shall have the following identification information:

Line text height shall be at least ½ in. (10 mm). Text labeling shall occur a maximum of every 2 ft (0.6 m). The text shall be indelibly printed in high contrast to the conduit. The text shall be oriented

to face up for underground installation; the text shall be oriented to face down for under bridge installation.

2. The duct shall be marked with data which will provide traceability of the manufacturer, plant location, date, shift, and machine of manufacturer.

3. Any additional wording on the conduit, such as “this side up” or “this side down”, shall be consistent with the installation orientation.

4. The spigot end of the duct shall have a circumferential insertion depth mark to insure that proper insertion depth is achieved. This mark is not required for spigots with threaded fittings.

C. INNERDUCT

Innerduct shall be manufactured from Poly-vinyl Chloride (PVC) or High Density Polyethylene (HDPE).

D. COUPLING BODY

The multi-cell conduit shall be joined by use of a coupling system which effectively seals the outerducts and innerducts but allows for expansion or contraction in the system.

E. ACCESSORIES AND FITTINGS

The multi-cell conduit system shall be furnished with all necessary fittings and accessories. These shall include, but shall not be limited to, coupling kits, lubrication fittings, repair kits, manhole terminator kits w/plugs, installation accessories, deflection fittings, and epoxy adhesive kits. Each multi-cell system shall offer a complete line of fixed, rigid bends and sweeps. For applications in which the multi-cell conduit system is specified on the Plans and/or by the Engineer to be attached to a bridge or other structure, bridge hanger assemblies, expansion joints, and conduit support devices shall be required. These hanger assemblies, expansion joints, and support devices shall be designed for application to the specific bridge or structure for which they will be used, and their materials and design shall be approved by the Department prior to their use.

F. MATERIALS

Provide the Engineer with Manufacturer’s test results for the required testing and certification in accordance with Subsection 106.05 of the Georgia Standard Specifications.

1. OUTERDUCT
   a. Schedule 40, Polyvinyl Chloride (PVC) Conduit - Schedule 40, polyvinyl chloride (PVC) conduit shall conform to the requirements of the National Electrical Manufacturers Association (NEMA) Standards Publication No. TC-6 and 8-2003, Type DB-120, except that the conduit shall be white in color and shall have a minimum 5 in. (127 mm) long integral bell to accommodate the coupling body.

   b. Type “C”, Polyvinyl Chloride (PVC) Conduit - Type “C,” polyvinyl chloride (PVC) conduit shall conform to the requirements of the National Electrical Manufacturers Association (NEMA) Standards Publication No. TC-6 and 8-2003, Type DB-120, except that the conduit shall be white in color and shall have a minimum 5 in. (127 mm) long integral bell to accommodate the coupling body.

   c. Steel Conduit - Rigid steel conduit shall meet the requirements of Sub-Section 923.2 of The Georgia Standard Specifications. All metal accessories and fitting used with the conduit shall be compatible and shall meet the galvanization requirements of Sub-Section 923. 2.

   d. “Bullet Resistant” Fiberglass Conduit - Bullet resistant fiberglass conduit shall have a minimum wall thickness of 0.250 in. (6.35 mm). The conduit shall prevent the penetration of a 0.45 caliber slug fired from a distance of 20 ft (6 m). The conduit shall conform to the following requirements when tested in accordance with the referenced specification. All accessories and fittings,

including outerduct couplings and expansion joints, shall meet all the same “bullet resistant” requirements as the conduit. All conduit and fittings shall be black.

PHYSICAL AND MECHANICAL PROPERTIES	TEST METHODS
Ultimate Tensile Strength - 11,000 PSI (75800 kPa) Min.	ASTM D 2105
Dielectric Strength - 500 Volts/Mil.	ASTM D 149
Water Absorption - 1% Max.	ASTM D 570
Specific Gravity - 1.9 - 2.0	ASTM D 792
Glass Content - 68 +- 2%	API SPEC 15 LR
Barcol Hardness - 58-52	ASTM D 2583

2. INNERDUCT (WITHIN MULTI-CELL)
Innerducts shall be manufactured from polyvinyl chloride (PVC) or high density polyethylene (HDPE). Innerducts shall be factory treated with an atomized silicone or manufactured in a manner to reduce friction during pulling of fiber optic cable. Innerduct to be used in bends and sweeps shall have a minimum burn through time of 30 minutes when tested in accordance with Generic Requirement GR-356-CORE, Issue 1, October 1995. The dimensions of innerduct shall meet the requirements of the manufacturer’s catalog cuts approved by the Department.

a. PVC INNERDUCT
PVC innerduct shall be factory treated with an atomized silicone to reduce friction. The innerduct shall conform to the following requirements:

COLOR OF INNERDUCTS	NOMINAL SIZE
3-way (2 gray & 1 white)	1 1/2" (38 mm)
4-way (3 gray & 1 white)	1 1/4" (32 mm)

Note: The white innerduct shall be located directly under the print line on the outerduct.

Alternate innerduct colors shall be permitted only when requested in writing and upon receiving written approval from the Engineer.

b. HDPE INNERDUCT
HDPE innerduct shall have a permanent dry lubricant extruded within the inner wall and shall incorporate longitudinal ribs within the inner wall. HDPE innerduct shall conform to the following requirements:

Color of Innerducts	Nominal Size
3-way (yellow, orange, red)	1 1/2" (38 mm)
4-way (red, white, yellow, orange)	1 1/4" (32 mm)

Innerduct colors shall be oriented in a clockwise direction as shown above, looking at the spigot end of the multi-cell conduit system. The white innerduct for 4-way and yellow innerduct for 3-way shall be located directly under the print line on the outerduct.

Alternate innerduct colors shall be permitted only when requested in writing and upon receiving written approval from the Engineer.

3. COUPLING BODY
The coupling body shall be designed with either 3 or 4 bores as required. The coupling body shall be designed so that when the conduit is joined, the outer walls of the innerducts and the inner walls of the outerduct shall be sealed, providing an airtight seal from within the innerduct system and a watertight seal from the outside of the outerduct. The coupling body shall be tested for water tightness and air tightness per Bellcore TA-NWT-000356 and shall conform to the following specifications.

Water infiltration: minimum 11-foot head or more for 7 days
Air Tightness: minimum 100 PSI (690kPa)

4. BENDS AND SWEEPS
Each multi-cell system shall offer a complete line of fixed bends and sweeps. No flexible bends will be permitted. HDPE, PVC, and bullet resistant fiberglass bends and sweeps shall have compatible bell and spigot ends. Steel conduit bends and sweeps shall have compatible threads and reversing couplings for connection to the conduit. PVC innerducts shall not be allowed in bends and sweeps. In no case shall bends and sweeps exceed a 90 degree direction change. Bends and sweeps shall be available as follows:

Fixed Bends: Fixed bends for steel conduit shall be available in no less than 4 ft (1.22 m) radii in 11 1/4 degrees, 22 1/2 degrees, 45 degrees, and 90 degree bends. Fixed bends for PVC and bullet resistant fiberglass multicell conduit shall be available in radii no less than the following:

RADIUS	DEGREE BEND
4 ft. (1.22 m)	11 1/4 degrees
6 ft. (1.83 m)	22 1/2 degrees
9 ft. (2.74 m)	45 and 90 degrees

682.2.06 CONDUIT DUCT BANK

A. MATERIAL

Install Conduit Duct Banks by configuring individual conduits into a continuous duct bank from termination point to termination point as shown in the Standard Details and other Contract Documents. Conduit Duct Bank, Type 1 shall include six 1-¼" (32 mm) conduits and three 2" (51 mm) conduits. Conduit Duct Bank, Type 2 shall include eight 1-¼" (32 mm) conduits and three 2"(51 mm) conduits. Conduit Duct Bank, Type 3 shall include four 2"(51 mm) conduits. Conduit Duct Bank, Type Special shall be as shown in the Plans.

Conduit shall be manufactured from virgin high-density polyethylene. Conduit shall be extruded from colored material for uniform full-thickness coloring. Where striping is required, a minimum of three colored longitudinal stripes of HDPE material shall be co-extruded on the conduit outer wall. The three stripes shall be equally spaced around the circumference and continuous for the entire length of conduit. Printed or embossed striping is not permitted.

All conduit shall be labeled with durable identification giving the name of the manufacturer, conduit size (inner diameter trade size and wall thickness/rating), manufacture/date codes, and sequential foot marking. Labeling shall occur at a maximum of every 2 ft (0.6 m).

Where required in the Contract Documents, conduits shall be located and secured in the conduit duct bank by conduit spacers configured into an assembly that is appropriate for the duct bank type.

1. 1-¼ in. (32 mm) Conduit
1-¼ in. (32 mm) Conduit shall conform to ASTM D-3035 and meet the following requirements:

- Smoothwall SDR 11
- Nominal outer diameter: 1.660 in. (42.16 mm)
- Minimum inner diameter: 1.313 in. (33.35 mm)
- Minimum wall thickness: 0.151 in. (3.84 mm)

2. 2 in. (51 mm) Conduit
2 in. (51 mm) Conduit shall conform to ASTM D-3035 and meet the following requirements:

- Smoothwall SDR 11

- Nominal outer diameter: 2.375 in. (60.32 mm)
- Minimum inner diameter: 1.885 in. (47.88 mm)
- Minimum wall thickness: 0.216 in. (5.49 mm)

3. Conduit Spacer
   Conduit spacers shall be steel or molded high impact polystyrene that is resistant to rot and moisture absorption. Spacers shall be manufactured to have an interlocking design such that spacers for different conduits can be assembled for the appropriate duct bank configuration. All spacers on the bottom of an assembly shall be "base" that includes a flat base with a minimum of 6 in^2 (3900 mm^2) of bearing area for each bottom conduit.

B. COUPLING

Make every effort to minimize coupling. Coupling shall only be permitted with the advance permission of the Engineer.

Couplings shall be airtight and watertight. All couplings shall be installed in accordance with the conduit and the coupling manufacturer's recommendations. Only couplings of the type specified below and approved by the conduit manufacturer are permitted.

Couplings shall be accomplished only by hydraulic press-on or electro-fusion coupling methods. Use hydraulic press-on couplings of seamless tool-grade tubular aluminum with sealing barbs and center stop. Use hydraulic compression duct coupling tools and follow all manufacturer's installation procedures, fully inserting both conduit sections to the coupling center stop. Use pre-fabricated electro-fusion couplings that are field-installed using the coupling manufacturer's recommended automatic self-monitoring fusing machine and installation procedures. Do not use any other coupling methods.

C. TERMINATION

Conduit duct banks shall be terminated in electrical communications boxes (ECBs) and pull boxes as shown in the Standard Details of the Contract Documents and in accordance with Section 647. Duct banks terminated in ECBs shall be installed into factory-installed knockout windows only, which shall be fully grouted and sealed around all conduits and to the full thickness of the box wall. Duct banks terminated in pull boxes shall be installed into factory-installed conduit terminators; conduit adhesive sealants recommended by the terminator and conduit manufacturers shall be used.

682.2.07 CONDUIT, NONMETAL, TYPE 3

A. MATERIAL

Conduit shall be manufactured from virgin high-density polyethylene (HDPE). Conduit shall be extruded from colored material for uniform full-thickness coloring. Where striping is required, a minimum of three colored longitudinal stripes of HDPE material shall be co-extruded on the conduit outer wall. The three stripes shall be equally spaced around the circumference and continuous for the entire length of conduit. Printed or embossed striping is not permitted. Unless otherwise noted in the Contract Documents, color code for conduit used for Type 3 installation shall comply with the Conduit Duct Bank Color Code schedule listed on the plan detail sheet. .

All conduit shall be labeled with durable identification giving the name of the manufacturer, conduit size (inner diameter trade size and wall thickness/rating), manufacture/date codes, and sequential foot marking. The conduit shall also be labeled with the following: "Georgia DOT Cable – For Assistance Call 404-624-2661". Labeling shall occur a maximum of every 4 ft. (1.2 m).

1. 1 in. (25 mm) Conduit
   1 in. (25 mm) Conduit shall conform to ASTM D-3035 and shall meet the following requirements:
   - Smoothwall SDR 11
   - Nominal outer diameter: 1.315 in. (33.40 mm)
   - Minimum inner diameter: 1.030 in. (26.16 mm)

- Minimum wall thickness: 0.120 in. (3.05 mm)

2. 1¼ in. (32 mm) Conduit
   1¼ in. (32 mm) Conduit shall conform to ASTM D-3035 and shall meet the following requirements:
   - Smoothwall SDR 11
   - Nominal outer diameter: 1.660 in. (42.16 mm)
   - Minimum inner diameter: 1.313 in. (33.35 mm)
   - Minimum wall thickness: 0.151 in. (3.84 mm)

3. 1½ in. (38 mm) Conduit
   1½ in. (38 mm) Conduit shall conform to ASTM D-3035 and shall meet the following requirements:
   - Smoothwall SIDR 11
   - Nominal outer diameter: 1.900 in. (48.26 mm)
   - Minimum inner diameter: 1.506 in. (38.25 mm)
   - Minimum wall thickness: 0.173 in. (4.39 mm)

4. 2 in. (51 mm) Conduit
   2 in. (51 mm) Conduit shall conform to ASTM D-3035 and shall meet the following requirements:
   - Smoothwall SDR 11
   - Nominal outer diameter: 2.375 in. (60.32 mm)
   - Minimum inner diameter: 1.885 in. (47.88 mm)
   - Minimum wall thickness: 0.216 in. (5.49 mm)

B. COUPLING

Make every effort to minimize coupling. Coupling shall only be permitted with the advance permission of the Engineer.

Couplings shall be airtight and watertight. All couplings shall be installed in accordance with the conduit and the coupling manufacturer's recommendations. Only couplings of the type specified below and approved by the conduit manufacturer are permitted.

Couplings shall be accomplished only by hydraulic press-on or electro-fusion coupling methods. Use hydraulic press-on couplings of seamless tool-grade tubular aluminum with sealing barbs and center stop. Use hydraulic compression duct coupling tools and follow all manufacturer's installation procedures, fully inserting both conduit sections to the coupling center stop. Use pre-fabricated electro-fusion couplings that are field-installed using the coupling manufacturer's recommended automatic self-monitoring fusing machine and installation procedures. Do not use any other coupling methods.

C. TERMINATION

Install Type 3 conduits in pull boxes in accordance with Section 647 and the Standard Details of the Contract Documents. Unless otherwise shown in the Plans, install Type 3 conduits in different types of underground spaces as follows. Type 3 conduits shall be terminated in electrical communications boxes (ECBs) and Types 6 and 7 pull boxes using factory-installed terminators in the ECB or pull box; conduit adhesive sealants recommended by the terminator and conduit manufacturers shall be used. Type 3 conduits shall be terminated in Types 1, 2, 3, 4S and 5S pull boxes bonded to a PVC sweep through the open bottom. Type 3 conduits shall be terminated in Types 4 and 5 pull boxes directly through cored holes in the side walls in accordance with Section 647.

682.2.08 CONDUIT, FIBERGLASS

A. MATERIAL

Conduit shall be manufactured from fiberglass reinforced epoxy. The conduit shall be "bullet resistant", capable of preventing the penetration of a 0.45 caliber slug fired from a distance of 20 ft. (6 m). The conduit shall conform to the following physical and mechanical properties when tested in accordance

with the referenced specification. All accessories and fittings, including outerduct couplings and expansion joints, shall meet all the same “bullet resistant” requirements as the conduit. All conduit and fittings shall be black.

PHYSICAL AND MECHANICAL PROPERTIES	TEST METHODS
Ultimate Tensile Strength - 11,000 PSI (75800 kPa) Min.	ASTM D 2105
Dielectric Strength - 500 Volts/Mil.	ASTM D 149
Water Absorption - 1% Max.	ASTM D 570
Specific Gravity - 1.9 - 2.0	ASTM D 792
Glass Content - 68 +- 2%	API SPEC 15 LR
Barcol Hardness - 58-52	ASTM D 2583

All conduit shall conform to the following requirements:

a. The conduit shall have the following identification information:

Line text height shall be at least ½ in. (10 mm). Text labeling shall occur a maximum of every 2 ft. (0.6 m). The text shall be indelibly printed in high contrast to the conduit. The text shall be oriented to face up for underground installation; the text shall be oriented to face down for under bridge installation.

b. The duct shall be marked with data which will provide traceability of the manufacturer, plant location, date, shift, and machine of manufacturer.

c. Any additional wording on the conduit, such as “this side up” or “this side down”, shall be consistent with the installation orientation.

d. The spigot end of the duct shall have a circumferential insertion depth mark to insure that proper insertion depth is achieved. This mark is not required for spigots with threaded fittings.

1. 2 in. (51 mm) Conduit
   2 in. (51 mm) Conduit shall meet the following requirements:
   - Nominal outer diameter: 2.500 in. (tolerance +0.028”/-0.018”)
   - [63.50 mm (tolerance +0.71/-0.46)]
   - Minimum inner diameter: 2.000 in. (50.80 mm)
   - Minimum wall thickness: 0.250 in. (6.35 mm)

2. 4 in. (102 mm) Conduit
   4 in. (102 mm) Conduit shall meet the following requirements:
   - Nominal outer diameter: 4.500 in. (tolerance +0.034”/-0.028”)
   - [114.3 mm (tolerance +0.86/-0.71)]
   - Minimum inner diameter: 4.000 in. (101.6 mm)
   - Minimum wall thickness: 0.250 in. (6.35 mm)

B. COUPLINGS AND FITTINGS

Coupling shall be by epoxy adhesive interference joint with bell and spigot or stop coupling fittings only. Couplings shall be airtight and watertight. All couplings shall be installed in accordance with the conduit and the coupling manufacturer’s recommendations. Only couplings of the same type of fiberglass as specified above are permitted.

Fixed bends and sweeps shall be used; no flexible bends are permitted. Bends and sweeps shall be compatible with the coupling requirements above. Bends and sweeps shall be of consistent radius and inner diameter, with a minimum radius of 10 times the inner diameter. In no case shall bends exceed a 90 degree direction change.

Where the fiberglass conduit is specified in the Plans and/or by the Engineer to be attached to a bridge or other structure, bridge hanger assemblies, expansion joints, deflection fittings, and conduit support devices are required and shall be designed for application to the specific bridge or structure for which they will be used. The Department shall approve all materials and design of bridge-attached conduit systems prior to any field installation. All bridge hanger assembly components that are in contact with the conduit's outer surface shall be manufactured of the same fiberglass reinforced epoxy material or shall employ low-friction roller bushings.

C. TERMINATION

Fiberglass conduits shall be terminated in ECBs using factory-installed terminators in the ECB or by grouting and setting in a knockout window as shown in the Standard Details of the Contract Documents. Adhesive sealants recommended by the terminator and conduit manufacturers shall be used.

682.2.09 PULL TAPE

A. MATERIAL

Non-detectable pull tape shall be a polyester tape (Fibertek Part No. WP1250, NEPTCO Part No. WP1250P, or approved equal). The tape shall have the following properties:

- 1250 lb (567 kg) tensile strength
- flat, not round, construction
- printed foot markings
- pre-lubricated for reduced pulling tension at start of cable pull
- low susceptibility to absorption of moisture; moisture resistant

Detectable pull tape shall consist of a single 24 AWG copper wire with polyethylene or PVC jacket woven into a polyester tape (Fibertek Part No. WPT1250, NEPTCO Part No. DP1250P, or approved equal). The tape shall have the following properties:

- 1250 lbs. (567 kg) tensile strength
- flat, not round, construction
- printed foot markings
- pre-lubricated for reduced pulling tension at start of cable pull
- low susceptibility to absorption of moisture; moisture resistant
- corrosion resistant embedded conductor

B. INSTALLATION

Install pull tape, by hand pulling, blowing, or via vacuum method, into each empty conduit and innerduct and empty cell within a multi-cell conduit during conduit installation. Install the pull tape after conduit testing has been completed. Install and secure 5 ft (1.5 m) of slacked pull tape in each empty conduit or cell at each vault. Secure the pull tape by tying it to the duct plug for the conduit in which it is installed.

682.2.10 DUCT PLUGS

Install blank duct plugs in each empty conduit that enters an ECB, pull box, hub, or building entrance. The plug shall be sized to fit the conduit in which it is used and shall provide a watertight and airtight seal by use of mechanical expansion. No sealants or caulks shall be used. The duct plug shall have inner

rings to which pull tape can be tied. All metallic components shall be stainless steel.

Install a fiber optic innerduct plug in each conduit that enters an ECB, pull box, hub, or building entrance and has a cable installed in it. The plug shall be sized to fit the conduit and cable with which it is used and shall be a split plug with a bushing assembly for sealing around the cable by mechanical compression. All metallic components shall be stainless steel.

Install a multi-conduit duct plug in each conduit that enters an ECB, pullbox, hub, or building entrance and has one or more innerducts installed in it. The plug shall be sized to fit the outer conduit and the innerducts with which it is used and shall have split holes for each innerduct with a bushing assembly for sealing around the innerducts by mechanical compression. Seal unused innerduct holes with the appropriate plug or solid bushing. All metallic components shall be stainless steel.

Install a multi-cable duct plug in each conduit that enters an ECB, pullbox, hub, or building entrance and has two or more cables installed in it. The plug shall be sized to fit the outer conduit and the cables (with appropriately-sized split bushings) with which it is used and shall have split holes for each cable with an overall bushing assembly for sealing around the cable bushings by mechanical compression. Where the conduit is 4-inch I.D. or greater, use a multi-cable duct plug with a minimum of four cable holes. Seal unused cable holes with the appropriate plug or solid bushing. All metallic components shall be stainless steel.

682.2.11 CONDUIT DETECTION WIRE

A. MATERIAL

Conduit detection wire shall be #10 AWG stranded green-insulated THWN or THHN-THWN conductor.

B. INSTALLATION

Install one conduit detection wire in the trench during conduit installation, directly below the conduit or at the same level as the conduit. All conduit installed by use of directional boring shall include the installation of a conduit detection wire. The conduit detection wire shall be pulled with, but not in, the bored conduit. If more than one conduit is being installed in a single bore, only one conduit detection wire shall be required.

When conduit detection wire installation is required in existing conduit, install one conduit detection wire in the existing conduit or in one of the existing innerducts.

The conduit detection wire shall be continuous and unspliced between pull boxes or vaults and shall enter the pull boxes or vaults at the same location as the conduit with which it is installed. Coil and secure 5 ft (1.5 m) of conduit detection wire in each pull box or vault.

C. TESTING

Perform a continuity or tone test after installation to confirm that a continuous run of conduit detection wire was installed between pull boxes or vaults. For conduit detection wire installed in a trench, test the conduit detection wire after backfilling, compaction, and ECB installation is complete. For conduit detection wire installed in a trench with full-depth conduit backfill, test the conduit detection wire before and after backfilling. The purpose of this test is to document that no damage or separation of the conduit detection wire has occurred during the installation of wire, backfilling of the trench, or ECB installation.

Prepare a test plan, supplying equipment, conducting the test and documenting the results. Submit a test plan at least 15 working days prior to the desired testing date. Testing shall not begin until the Engineer has approved the test plan, and all tests shall be conducted in the presence of the Engineer.

682.2.12 CONDUIT TESTING

Test every conduit after the conduit is installed and before cable or pull tape is installed. Perform

testing on all conduit types in this Specification, including but not limited to each cell of multi-cell conduit, each conduit in duct banks, and each innerduct. All testing shall be performed using the procedures and mandrel size recommended by the conduit manufacturer. Testing shall be performed in the presence of the Engineer. Payment for all testing is included in the cost of the conduit.

682.2.13 ELECTRICAL COMMUNICATION BOX

Design electrical communication box and cover in accordance with ASTM C-857-95. Ensure that the walls, floor, and roof be minimum 6 in. thicknesses. Form electrical communication box from 4500 psi concrete in accordance with Section 830. Manufacture and install the electrical communication box in accordance with Details which include the dimensions associated with each type of electrical communication box. Seal all joints and seams in the electrical communication boxes created from manufacture or final assembly with manufacturer-approved sealant.

Form electrical communication box with one (1) knockout window and three (3) conduit terminators for conduit, nonmetal, type 3, 2 in. on each wall of the electrical communication box as shown in the Details. The knockout window shall remain sealed unless used for conduit duct bank termination. Provide 1 in. to 1.5 in. separation between conduit terminators. Install conduit into terminators as shown in Plans and seal with manufacturer-approved sealant.

Install two (2) cable racks, minimum 54 in. in length, on each wall of the electrical communication box as shown in the Details. Install cable racks directly to the wall or use the shortest standoff bracket possible. Include cable support arms, 7 in. to 9 in. in length, with plastic or ceramic insulators with each rack. Install one (1) cable support arm per rack for each cable installed plus one (1) cable support arm per rack as spare. Manufacture all cable racks, cable support arms, and mounting/fastening hardware of hot-dipped galvanized steel.

Install electrical communication box on a 12 in. layer of compacted coarse aggregate. Terminate conduit duct banks as shown in the Details. Prior to grouting, compact backfill for the entire length of trench to within 10 ft. of the electrical communication box. Bundle conduit, as shown on conduit duct bank installation Details, with cable ties, wire, or duct tape. Secure and align individual conduits of conduit duct bank with conduit alignment jigs, ensuring that the conduits enter the electrical communication box level, straight, and perpendicular to the wall. Construct conduit alignment jigs of plywood or use conduit spacers in accordance with Section 682. Allow grout around individual conduits of conduit duct bank to set prior to final backfilling and paving around the electrical communication box. Do not use concrete for any backfill around the electrical communication box or the conduit approaches to the electrical communication box within 10 ft.

Install electrical communication boxes in the shoulder lane whenever possible, unless shown otherwise in the Plans. In the case of narrow shoulder lanes where the electrical communication box extends beyond the edge of pavement, backfill to the top of the electrical communication box. Never install any portion of the electrical communication box in the travel lane.

Electrical communication box covers shall be imprinted with “GEORGIA DOT COMMUNICATIONS”.

682.2.14 ELECTRICAL COMMUNICATION BOX REHABILITATION

Establish the location of the electrical communication box, recognizing that pavement may have been placed over the cover of the electrical communication box.

Open the cover of the electrical communication box which may include the use of power tools to accomplish and the removal of pavement.

Remove existing fiber optic cable coils temporarily ensuring no kinks or abrasions are made to the fiber optic cable.

Clean the interior of the electrical communication box and remove any debris, trash, mud, silt, and water.

Reseal all joints and seams in the electrical communication box with silicone sealant, type A as specified in Section 833.2.06.

Install two (2) cable racks per wall for inside wall widths greater than or equal to 36 in. Install one (1) rack per wall for inside wall widths less than 36 in. but greater or equal to 24 in. Install no racks for inside wall widths less than 24 in. Cable rack height shall be equal to inside height of the electrical communication box minus 6 in. Install cable racks such that the bottom of the cable rack is no greater than 3 in. from the bottom of the electrical communication box. Install cable racks such that the distance between successive racks and the electrical communication box corners is equal to the extent permitted by the presence of knockout windows and/or conduit terminators. Install cable racks directly to the wall or use the shortest standoff bracket possible. Include cable support arms, 7 in. to 9 in. in length, with plastic or ceramic insulators with each rack. Install one (1) cable support arm per rack for each cable previously installed or being installed as part of the project plus one (1) cable support arm per rack as spare. Manufacture all cable racks, cable support arms, and mounting/fastening hardware of hot-dipped galvanized steel.

Re-set the electrical communication box and cover assembly such that the cover is at the elevation of the paved shoulder lane. Install class A concrete HES and 2 in. of 12.5 mm superpave or concrete surface to match existing paved shoulder.

Label any unlabeled fiber optic cables in accordance with labeling requirements set forth in Section 935.

If a suitable unused conduit terminator does not exist and a conduit is being terminated into an existing electrical communication box, neatly core conduit entry hole in electrical communication box wall and seal around conduit with silicone sealant or grout as necessary to prevent soil and/or water intrusion into the electrical communication box.

Add the following to Subsection 682.3.05:

A. Multi-Cell Conduit System

Secure from the manufacturer or supplier of the multi-cell system and provide to the Department complete and comprehensive written installation manuals for the complete system. At the start of the multi-cell installation, have the manufacturer or supplier provide technical assistance, as needed. At any time during the construction process, ensure that the manufacturer or supplier provides technical assistance to the Contractor and/or the Department.

For multi-cell conduit system installation under bridges, only fiberglass or steel multi-cell conduit systems shall be used. Install expansion and deflection joints according to the multi-cell conduit system manufacturer's and support hanger manufacturer's recommendations. Steel couplings shall be securely tightened; fiberglass coupling shall be epoxied. Ensure that during the construction process and at the request of the Department, the multi-cell conduit system or support hanger manufacturer provides on-site technical assistance at no additional cost to the Department.

B. Continuous Flexible Conduit

Whenever possible, conduits shall be placed in continuous manufactured lengths without coupling.

Conduit shall be placed in the straightest orientation possible, reducing bends, rises, and waves. Conduits shall be held in place during backfilling when necessary to keep straight. Where field conditions require the trench to change direction and bends are necessary, the bends shall be formed in the with the trench and should be smooth and gentle and shall not have less than a 4 foot radius (as measured to the inside surface of the conduit)

Add the following to Subsection 682.4:

Multi-cell conduit system, innerduct, conduit duct bank, fiberglass conduit, and conduit nonmetal type 3 will be measured for payment by the amount actually installed, complete, functional, and accepted. Unless otherwise specified in the Plans, all costs for materials, cutting asphalt or concrete, trenching, installing, backfilling trench, restoring asphalt or concrete, drilling existing concrete shoulder, installing #4 rebar, replacement of existing transverse joint material, directional boring, and testing of multi-cell conduit system, innerduct, conduit duct bank, conduit nonmetal type 3, fiberglass conduit, marking tape, pull tape, duct plugs, and conduit detection wire shall be included in the overall cost of the multi-cell conduit system, innerduct, conduit duct bank, fiberglass conduit, and conduit nonmetal type 3.

Conduit detection wire installed in existing conduit will be measured for payment by the amount actually installed, complete, functional, and accepted. Payment for installing Conduit Detection Wire in existing conduit will be paid for at the Contract unit price per linear foot or linear meter. Such payment will be full compensation for furnishing, installing, and testing the wire.

Conduit, nonmetal, type 2 – power service will be measured for payment by the horizontal distance actually installed. No separate measurement will be made for type 2 pull boxes, electrical junction boxes, electrical wire, directional bores, transformers, pavement repair, or any other required materials. All cost for materials required for providing electrical power from the electrical service pole to the equipment cabinet shall be included in the overall cost of conduit, nonmetal, type 2 – power service.

Electrical communication box, type ____ will be measured for payment by the number actually installed, complete, functional, and accepted. No separate measurement will be made for, cable racks, cable support arms, compacted backfill material, compacted coarse aggregate, pavement removal, or pavement installation.

Electrical communication box rehabilitation will be measured for payment by the electrical communication box that was rehabilitated as previously defined. No separate measurement will be made for cable racks, cable support arms, pavement removal, or pavement installation.

Add the following to Subsection 682.5:

Item No. 682. Conduit - Nonmetal, Type ___. (Size)..... …… per Linear Foot (Meter)
Item No. 682. Conduit - Nonmetal, Type 2 – Power Service, (Size)..... ….per Linear Foot (Meter)
Item No. 682. Multi-Cell Conduit System, 4-Way, Fiberglass..... ……per Linear Foot (Meter)
Item No. 682. Multi-Cell Conduit System, 4-Way, Rigid Metal ..... ….per Linear Foot (Meter)
Item No. 682. Conduit Detection Wire .....…….per Linear Foot (Meter)
Item No. 682. Conduit Duct Bank, Type 1 .....……per Linear Foot (Meter)
Item No. 682. Conduit Duct Bank, Type 2 .....……per Linear Foot (Meter)
Item No. 682. Conduit Duct Bank, Type 3 .....……per Linear Foot (Meter)
Item No. 682. Conduit Duct Bank, Type Special ..... ……..per Linear Foot (Meter)
Item No. 682. Conduit, Nonmetal, Type 3, 1" .....……...per Linear Foot (Meter)
Item No. 682. Conduit, Nonmetal, Type 3, 1¼" .....……per Linear Foot (Meter)
Item No. 682. Conduit, Nonmetal, Type 3, 1 ½" ..... ……...per Linear Foot (Meter)
Item No. 682. Conduit, Nonmetal, Type 3, 2" .....……...per Linear Foot (Meter)
Item No. 682. Conduit, Fiberglass, __(size)__..... ……...per Linear Foot (Meter)
Item No. 682. Electrical Communication Box, Type ___ .....……...per Each
Item No. 682. Electrical Communication Box Rehabilitation.....……...per Each

ACKNOWLEDGEMENT OF RECEIPT
OF BID PACKAGE

BID NUMBER #11-280
Construction of Ridgeview Middle School Sidewalk

Upon receipt of documents, please fax this page to:

City of Sandy Springs – Purchasing Office
Attention: Jasmine Bryant, Buyer
7840 Roswell Road Bldg 500
Sandy Springs, Georgia 30350
Phone: 770-730-5600
Fax: 770-206-1480

I hereby acknowledge receipt of documents pertaining to the above referenced bid.

COMPANY NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

CITY: _____ STATE _____ ZIP _____

PHONE: (____)_____ FAX: (____)_____

E-MAIL: _____

_____ _____
(Signature) (Date)