

# PROJECT MANUAL

15<sup>th</sup> Street Extension  
P.I. No. 0015019

Fulton County, Georgia

**CITY OF ATLANTA - Sponsor**

**May 4, 2023**

**Implementation Manager:**

**Midtown Alliance**  
999 Peachtree Street  
Suite 730  
Atlanta, GA 30309

**Engineer:**

**Jacobs**  
Ten 10<sup>th</sup> Street, NW,  
Suite 1400  
Atlanta, GA 30309

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## INVITATION TO BID

**Sealed bids** will be received by Midtown Alliance, 999 Peachtree Street, Suite 730, Atlanta, GA, 30309 **until 2:00 p.m. ET on June 8<sup>th</sup>, 2023** for the construction of **15th Street Extension** project in the City of Atlanta, Fulton County, Georgia. The Midtown Alliance and GDOT project identification number is **PI-0015019**. Bids received after the designated time will not be accepted. All bids must be originals; no bond copies, facsimile copies, or electronic copies will be accepted.

The project generally includes construction of a new public street and associated right-of-way improvements of sidewalks, curbs, roadway, landscaping, street trees, and street lighting.

The Solicitation document may be viewed and downloaded from Midtown Alliance's website here:

<https://www.midtownatl.com/0015019-15thStExtension-Solicitation>

A **pre-bid conference** for prospective bidders will be held at **11:00 a.m. ET on May 11<sup>th</sup>, 2023** by Midtown Alliance, 999 Peachtree Street, Suite 730, Atlanta, GA, 30309

Copies of the Project Manual and Drawings may be purchased directly from ARC Document Solutions, 640 Tenth Street NW, Atlanta, GA 30318 with phone number 404-873-5911. Additionally, the Project Manual and Drawings may be examined at the following locations:

- 1) Midtown Alliance office at 999 Peachtree Street, Suite 730, Atlanta, GA, 30309

Should any question or need for information arise, it should be directed to Midtown Alliance at [business@midtownatl.com](mailto:business@midtownatl.com) with subject line: **PI-0015019 15th Street Extension – [insert nature of email]**. All questions must be submitted by email by **5:00 p.m. ET on May 25<sup>th</sup>, 2023**. The response to the questions will be sent as an addendum.

No bid proposal will be considered unless accompanied by a certified check or acceptable Bid Bond in an amount not less than five percent (5%) of the bid and made payable to Midtown Alliance.

Successful Bidder shall be required to furnish a Contract Performance Bond equal to 100% of the contract price and a Payment Bond equal to 110% of the contract price, with the terms and surety to be approved by Midtown Alliance and the City of Atlanta, and furnish satisfactory proof of carriage of the insurance required.

GDOT Standard Specifications Construction of Transportation Systems, 2013 Edition, and applicable special provisions and supplemental specifications apply to the contract.

Bidders submitting a bid \$2,000,000 or less must be either a prequalified contractor or a registered subcontractor with GDOT.

Bidders submitting bids in excess of \$2,000,000 must be prequalified with GDOT.

The Georgia D.O.T. Disadvantaged Business Enterprise (**DBE**) **goal for this project is 13%**. All DBE firms must be certified with the Georgia D.O.T. Equal Employment Opportunity Office.

The City of Atlanta in accordance with Title VI of the Civil Rights Act of 1964 and 78 Stat. 252, 42 USC 2000d-42 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, part 21, Nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the ground of race,

color, sex, or national origin in consideration for an award.

If the Contract is awarded, it will be awarded to the lowest reliable bidder whose proposal shall have met all the prescribed requirements per the Project Manual, including Section 00100 Instructions to Bidders.

Low Bid will be determined based on the sum of the base bid and any alternates selected by Midtown Alliance. The completed DBE Goals Form, Federal Aid Certification, and Georgia Security and Immigration Compliance Act Affidavit shall be submitted with the bid.

No bidder may withdraw their bid within one-hundred and twenty days (120) after the actual date of the opening thereof.

The successful bidder shall commence work with adequate force and equipment on a date to be specified in a written order of the Implementation Manager and shall complete the work within **540 consecutive calendar days** from and including said date.

# **“BIDDER QUALIFICATIONS”**

## **NOTICE TO ALL BIDDERS**

ALL BIDDERS SUBMITTING BIDS IN EXCESS OF \$2,000,000 SHALL BE PRE-QUALIFIED WITH THE GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT).

ALL BIDDERS SUBMITTING BIDS \$2,000,000 OR LESS SHALL BE REGISTERED SUBCONTRACTORS OR PRE-QUALIFIED WITH THE GDOT.

SUBCONTRACTORS SHALL BE PRE-QUALIFIED OR REGISTERED WITH THE GDOT.

IF CONSTRUCTION WORK INVOLVES WELDED STRUCTURES, SUCH AS BRIDGES, THE MANUFACTURER OF THE STRUCTURE SHALL BE ON THE GDOT QPL LIST 60.

# NOTICE TO ALL BIDDERS

To report bid rigging activities call:

**1-800-424-9071**

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

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

## INSTRUCTIONS TO BIDDERS

### 1.0 GENERAL

#### 1.01 SUBMITTING BIDS

A. The Bid Submittal Package shall consist of those documents contained in and identified as Sections 00300 through and including 00495 of the Project Manual (See Table of Contents). No interlineations, additions, or deletions shall be made to the documents in the Bid Submittal Package by the bidder. Erasures or other changes to responses of the bidders must be noted and signed by the bidder on the page where they occur. All forms contained in the Bidding Requirements section must be completed and included as a part of the Bid Submittal Package. The failure to follow instructions in completing any part of the Bid Submittal Package may cause the bid to be deemed non-responsive and be rejected.

B. The Bid Submittal Package will be received by Midtown Alliance, 999 Peachtree Street, Suite 730, Atlanta, GA, 30309 **until 2:00 p.m. ET on June 8<sup>th</sup>, 2023** as stated in the Invitation to Bid (Section 00020).

C. All Bid Submittal Packages shall be in sealed envelopes (inner and outer), both clearly marked and labeled on the outside with the following project description:

**15<sup>th</sup> Street Extension  
P.I. No. 0015019**

and shall also include the full name and complete address of the bidder, and the date and time that bids are due.

D. No bids may be withdrawn after submission for a period of one hundred and twenty (120) days after the date set for bid opening.

E. Sealed Bids received on time will be opened and publicly read.

#### 1.02 PRE-BID CONFERENCE

A Pre-bid Conference will be held at **11:00 a.m. ET on May 11<sup>th</sup>, 2023** by Midtown Alliance, 999 Peachtree Street, Suite 730, Atlanta, GA, 30309

At that time, the general requirements of the project will be discussed. Any additional questions raised by Bidders will be discussed. It is strongly encouraged that all Bidders attend the Pre-bid Conference.

General requirements of the project will be discussed at the Pre-bid Conference. Bidders will be allowed to ask questions. Oral answers to questions during the Pre-bid Conference will not be authoritative.

It should be emphasized that nothing stated or discussed during the course of this Conference shall be considered to modify, alter or change the requirements of the Bidding Documents, unless it shall be subsequently incorporated into an addendum to the Bidding Documents.

#### 1.03 NOTICE OF OTHER REGULATIONS OR REQUIREMENTS

A. Georgia Department of Transportation (GDOT) bidders shall be qualified as outlined in Section 00030 Notice to All bidders. **Bids will be considered only from pre-qualified bidders for work of this type and magnitude.**



- B. Bidders are required to examine the Plans and Specifications carefully and to make such examinations of the site of the Work as are necessary to familiarize themselves with the nature and extent of the tasks to be completed and with all local conditions and/or all laws and regulations which may affect the Work. Bidders are also required to inform themselves fully in regard to construction and labor conditions under which the Work will be performed. The Implementation Manager will not be responsible for bidder's errors or misjudgment, nor for any information or lack of information on location conditions or general laws and regulations.
- C. The Code of Federal Regulations (CFR) is cited at several locations in the following project documentation. The complete text of the CFR is available at <http://www.access.gpo.gov/nara/cfr>.
- D. GDOT Standard Specifications Construction of Transportation Systems, 2013 Edition, and applicable special provisions and supplemental specifications apply to the contract. It is the responsibility of Bidders to become knowledgeable with this document. It can be purchased by contacting the Georgia Department of Transportation.
- E. The City of Atlanta Code of Ordinances is available at <http://www.atlantaga.gov>.
- F. Failure of a bidder to be aware of any applicable federal, state or local regulation shall not excuse compliance, regardless of whether specifically cited in the Contract Documents, the Plans and Specifications or any related document.
- G. All testing is to meet the requirement outlined in the GDOT Sampling, Testing and Inspection Guide
- H. The contractor shall use suppliers on the appropriate GDOT qualified Products List

#### 1.04 AUTHORITY TO SIGN

- A. If a bid is made by an individual, the name and mailing address must be shown. If made by a firm or partnership, the name and mailing address of each member of the firm or partnership must be shown. If made by a corporation, the Corporate Certificate must be executed.
- B. The bidder should ensure that the legal and proper name of her/his proprietorship, firm, partnership, or corporation is printed or typed in the space provided.

#### 1.05 BID SECURITY

- A. Bids must be accompanied by a certified check to the Midtown Alliance or acceptable Bid Bond in an amount not less than five (5%) of the amount of bid. The Bid Bond shall name Midtown Alliance as the obligee. The Bid Bond shall be secured by a guaranty or surety company listed in the latest issue of United States Treasury Circular 570. The amount of the Bid Bond must be within the maximum amount specified for such guaranty or surety company by Circular 570. **No bid will be considered unless it is accompanied by the required security.**
- B. The bid security of the bidders submitting the five lowest total bid amounts shall be retained until either a bidder has signed the contract and furnished performance and payment bonds and certificates of insurance, or until one-hundred and twenty days (120) after the bid opening date whichever date is sooner. Other bid securities will be returned within ten (10) calendar days after the bid opening date. Bid securities being held pending the signing of the contract and the furnishing of other documents will be returned within three (3) calendar days.

C. Each bidder agrees that if it is awarded the contract to perform this work and fails within the stipulated time to execute the contract and/or furnish other required documents that the Midtown Alliance will retain the bid security as liquidated damages and not as a penalty.

D. Attorneys-in-Fact who sign bid bonds must file with the bond a certified and effectively date copy of their power of attorney.

#### 1.06 RIGHTS RESERVED

A. The Midtown Alliance reserves the right to reject any or all bids, to waive informalities and to re-advertise. The Midtown Alliance also reserve the right to reject bids which are non-confirming or to re-open the bidding if all bids are in excess of funds available for the Project

B. Georgia Department of Transportation (GDOT) requires a bidder to be pre-qualified based upon the size of the project and that if the bid involves major structures such as bridges and retaining walls, the contractor must be pre-qualified regardless of bid amount. If a single sub-contract is in excess of two hundred and fifty thousand dollars (\$250,000), the sub-contractor must be registered with GDOT. The Midtown Alliance reserves the right to reject any or all bids from any bidder who is not pre-qualified with GDOT.

C. The Midtown Alliance reserves the right to reject any or all bids from bidders who are declared “non-responsive.” Bidders failing to meet the DBE requirements of The City of Atlanta may be declared “non-responsive” if they have not made a good faith effort to meet the DBE goal or the City of Atlanta’s requested participation level. Bidders failing to include all documents in the Bid Submittal Package as required by the Bidding Requirements may cause the bid to be declared as “non-responsive” and be rejected. The failure to follow instructions in completing any part of the Bid Submittal Package may also cause the bid to declared “non-responsive” and be rejected.

D The Midtown Alliance reserves the right to reject any bid which contains unauthorized additions, conditions, limitations, or provisions to the terms of the bid, including any such changes which result from interlineations, additions or deletions made to the documents in the Bid Submittal Package.

#### 1.07 AWARD OF CONTRACT

A. The contract for the Work, (the “Contract”), if awarded, will be awarded to the lowest reliable bidder whose bid shall have met all the prescribed requirements.

B. The Implementation Manager shall issue a written notice of award (“Notice of Award”) to the successful bidder.

C. The Contract shall be executed on the form as shown in Section 00500 by the successful bidder (hereinafter, the “Contractor”), will be subject to all requirements of the Contract Documents, and shall form a binding contract between the contracting parties.

D. The Contractor shall be required to furnish six executed copies of: (i) Bid Form, (ii) Corporate Certificate, (iii) Bid Bond (iv) Federal Aid Certificate, (v) DBE Requirement, (vi) Bid Opportunity List, (vii) Oath of Successful Bidder, (viii) Georgia Security and Immigration Compliance Act Affidavit.

E. The Contract Performance Bond shall be equal to 100% of the Contract Price. The Contract Payment Bond shall be equal to 110% of the Contract Price. All bonds must be provided by a company

qualified to do business in Georgia and shall meet the requirements of Sections 13-10-1, 36-10-4 and 36-82-101 to 103 of the Official Code of Georgia.

F. A Preconstruction Conference will be held with, at a minimum, Sponsor, Contractor, selected DBE Firms, GDOT Area Engineer, and the GDOT Project Manager

#### 1.08 FAILURE TO EXECUTE CONTRACT

A. Failure to execute Contract, Contract Performance Bond and Payment Bond, or furnish satisfactory proof of insurance coverage as required within 10 days after the date of Notice of Award of the Contract shall be just cause for the annulment of the award and for the forfeiture of the bid bond, not as a penalty, but as liquidation of damages sustained. At the discretion of the Implementation Manager, the award may then be made to the next lowest responsible and responsive bidder, or the Work may be re-advertised.

#### 1.09 INSURANCE, PROOF OF COVERAGE

A. The Contractor shall be required to furnish the Implementation Manager with satisfactory proof of the insurance coverage specified in the Project Manual within ten (10) days from the date of the Notice of Award. The sample insurance certificate attached to Supplemental General Conditions lists required insurance limits for this project.

#### 1.10 NOTICE OF COMMENCEMENT

A. The Contractor, after furnishing the Payment Bond or Security Deposit, shall post on the public works construction site and file with the clerk of the Superior Court in the county in which the site is located a notice of commencement no later than fifteen (15) days after the Contractor physically commences work on the project and supply a copy of the notice of commencement to any subcontractor, materialman, or person who makes a written request to the Contractor. Failure to supply a copy of the notice of commencement within ten (10) calendar days of receipt of written request from the subcontractor, materialman, or person shall render the provisions of paragraph (1) of subsection (a) of Georgia Code Section 46-91-73 inapplicable to the subcontractor, materialman, or person making the request. The notice of commencement shall include:

- The name, address, and telephone number of the Contractor.
- The name and location of the public work being constructed or a general description of the improvement.
- The name and address of the surety for the performance and payment bonds, if any.
- The name and address of the holder of the security deposit provided, if any.

B. The failure to file a notice of commencement shall render the notice to contractor requirements of paragraph (1) of subsection (a) of Code Section 36-91-73 inapplicable.

#### 1.11 TIME

A. Time is of the essence in the construction of this project. The Contractor shall commence work with adequate force and equipment on a date to be specified in a written order of the Implementation Manager and shall complete the work within 540 consecutive calendar days from and including said date. Payment will be made to the contractor each calendar month based on the estimated work completed in place as prescribed by the standard specifications. Final payment of amounts withheld will not be made until the Implementation Manager and the City of Atlanta have certified that the work has been satisfactorily completed and accepted.

B. The Contract Time for completion of the Work for this Contract shall be as stated in the Project Manual. For failure to complete the Work within this period, the Contractor shall pay the Implementation Manager liquidated damages of \$638.00 per calendar day.

#### 1.12 LOCATION AND SITE

A. The Site of the proposed Work is located within the City of Atlanta, Fulton County, Georgia as indicated in the Plans and Specifications. Bidders shall inform themselves concerning all applicable Georgia laws and local ordinances and comply with same.

B. The Contractor shall accept the Site in its present condition and carry out all work in accordance with the requirements of the Specifications and as indicated on the Drawings.

C. The Contractor shall, before submitting a bid, visit the Site and acquaint himself with the actual conditions and the location of any or all obstructions that may exist on the Site.

D. The Contract Documents contain the provisions required for the completion of the Work to be performed pursuant to this Contract. Information obtained from an officer, agent, or employee of the Implementation Manager or any other person shall not affect the risks or obligations assumed by the contractor or relieve her/him from fulfilling any of the conditions of the contract. Each bidder is responsible for inspecting the Site and for reading and being thoroughly familiar with the contract documents. The failure or omission of any bidder to so familiarize herself/himself shall in no way relieve any bidder from any obligation in respect to her/his bid.

E. The Contractor shall inspect all easements and rights-of-way to ensure that the Implementation Manager has obtained all land and rights-of-way necessary for completion of the Work to be performed pursuant to the Contract Documents. The Contractor shall comply with all stipulations contained in easements acquired by the Implementation Manager. The Contractor shall not be entitled to damages for the failure of the Implementation Manager to obtain rights-of-way. The Contractor shall accurately locate above and below ground utilities and structures which may be affected by the Work using whatever means may be appropriate.

F. The limits of work are as defined on the drawings and specifications and other contract documents.

#### 1.13 BIDDERS NOTICE

A. Bidders are hereby notified and agree by submission of their bid that should, after award of contract, additional items not listed in the bid become necessary and require unit prices not established by the bid, that the unit prices of such items shall be negotiated and shall be directly proportional to the established unit prices of similar items in the Bid.

B. Bidders and their authorized representatives are expected to fully familiarize themselves with the conditions, requirements, and specifications before submitting bid. Failure to do so will be at the Bidder's risk. In case of error in extension of prices in the Bid, the unit price shall govern. In the event of a discrepancy between the sum of the extended amounts and the bid total, the sum of the extended amounts shall govern.

#### 1.14 COMPLIANCE WITH OSHA STANDARDS AND REGULATIONS

A. The Work connected with this contract shall be performed in accordance with all applicable OSHA regulations and standards including any additions or revisions thereto until the job is completed and accepted by the Implementation Manager.

#### 1.15 INFORMATION AND QUESTIONS

- A. Should any question or need for information arise, it should be directed to Midtown Alliance at [business@midtownatl.com](mailto:business@midtownatl.com) with subject line: **PI-0015019 15th Street Extension – [insert nature of email]**. All questions must be submitted by email by **5:00 PM on May 25<sup>th</sup>, 2023**. The response to the questions will be sent as an addendum.
- B. All Bidders and Representatives of any Bidder are strictly prohibited from contacting any other City or Midtown Alliance employees or any third-party representatives of the City or Midtown Alliance on any matter regarding this ITB.

#### 1.16 ADDENDA AND INTERPRETATION

- A. No interpretation of the meaning of the Contract Documents will be made orally to any bidder. Any request for such interpretation should be in writing addressed to the Engineer. Each such interpretation shall be given in writing, separately numbered and dated and furnished to each interested bidder at least three (3) days, excluding Saturdays, Sundays and Legal Holidays, prior to the bid opening date. Any request not received seven days prior to bid opening date will not be accepted because of the difficulty in completing the interpretation and making distribution to each bidder.

END OF SECTION

PROJECT		15 <sup>TH</sup> STREET EXTENSION			
Pay Item	Item Description	Unit	Quantity	Unit Price	Cost
	<b>Roadway Items</b>				
109-0300	PRICE ADJUSTMENT – ASPHALT CEMENT	TBD	TBD	TBD	TBD
150-1000	TRAFFIC CONTROL - 0015019	LS	1		
150-5010	TRAFFIC CONTROL, PORTABLE IMPACT ATTENUATOR	EA	5		
154-1000	CONSTRUCTION VIBRATION MONITORING	LS	1		
210-0100	GRADING COMPLETE - 0015019	LS	1		
402-1802	RECYCLED ASPH CONC PATCHING INCL POLYMER-MODIFIED BITUM MATL & H LIME	TN	2		
402-3100	RECYCLED ASPH CONC. LEVELING, INCL BITUM MATL & H LIME	TN	8		
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	270		
402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	310		
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	620		
310-1101	GR AGGR BASE CRS, INCL MATL	TN	1570		
413-0750	TACK COAT	GL	700		
432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	800		
437-1571	STRAIGHT GRANITE CURB, 5 IN X 17 IN, TP A	LF	1148		
437-2571	CIRCULAR GRANITE CURB, 5 IN X 17 IN, TP A	LF	345		
441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	100		
441-0104	CONC SIDEWALK, 4 IN	SY	1965		
441-0108	CONC SIDEWALK, 8 IN	SY	40		
441-0018	DRIVEWAY CONCRETE, 8 IN TK	SY	85		
441-1000	SAWED JOINTS IN EXIST. PAVEMENT PCC	LF	190		
600-0001	FLOWABLE FILL	CY	80		
620-0100	TEMPORARY BARRIER, METHOD NO. 1	LF	460		
643-8200	BARRIER FENCE (ORANGE), 4 FT	LF	125		
643-8300	ORNAMENTAL FENCE	LF	508		
500-3201	CLASS B CONCRETE, RETAINING WALL	CY	39		
700-6910	PERMANENT GRASSING	AC	0.3		
700-7000	AGRICULTURAL LIME	TN	0.1		
700-8000	FERTILIZER MIXED GRADE	TN	0.2		
700-8100	FERTILIZER NITROGEN CONTENT	LB	15		
700-9300	SOD	SY	50		

Wall Items					
207-0203	FOUND BK FILL MATL, TP II	CY	617		
627-1000	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 1	SF	580		
627-1010	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 1	SF	419		
627-1120	COPING B, WALL NO - 1	LF	119		

Drainage Items					
550-5180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	510		
611-3000	RECONSTRUCT CATCH BASIN, GP 1	EA	3		
668-1105	CATCH BASIN, GP 1, SPCL DES	EA	7		
668-1115	CATCH BASIN, GP 1, SPCL DES ADDTL. DEPTH	LF	3.79		
668-2100	DROP INLET, GP 1	EA	4		
668-4300	STORM SEWER MANHOLE, TP 1	EA	1		
668-5000	JUNCTION BOX	EA	1		

Erosion Items					
163-0232	TEMPORARY GRASSING	AC	1		
163-0240	MULCH	TN	20		
163-0310	CONSTRUCTION EXIT TIRE CLEANING STATION (PER DAY)	EA	4		
163-0301	CONSTRUCT AND REMOVE CONSTRUCTION EXITS	EA	4		
163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	23		
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	1663		
165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	4		
165-0310	MAINTENANCE OF CONSTRUCTION EXIT TIRE WASH AREA (PER EACH)	EA	4		
165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	23		
167-1500	WATER QUALITY INSPECTIONS	MO	24		
167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	4		
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	3325		

Signing and Marking Items					
636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	105		
636-1036	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	55		
636-2070	GALV STEEL POSTS, TP 7	LF	302.5		
659-5013	HOT APPLIED PREFORMED PLASTIC PVMT MKG, WORDS AND/OR SYMBOLS, WHITE, TP P	EA	11		
653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	9		
653-0210	THERMOPLASTIC PVMT MARKING, WORD, TP 1	EA	3		
659-7015	HOT APPLIED PREFORMED PLASTIC PVMT MKG, BIKE LANE MARKING, TP P	EA	13		
653-1501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LF	2900		

653-1502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LF	1200		
653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	220		
653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	1300		
653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	380		
652-9000	TRAFFIC STRIPE, GREEN	SY	200		
653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	50		
654-1003	RAISED PVMT MARKERS TP 3	EA	40		
654-1001	RAISED PVMT MARKERS TP 1	EA	36		

<b>Signal Items</b>					
610-6872	REM STEEL STRAIN POLE	EA	2		
610-9001	REM SIGN	EA	1		
636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	89		
639-3014	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE ARM - 25' AND 35' TANDEM MAST ARMS	EA	1		
639-3014	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE ARM - 35' MAST ARM	EA	1		
639-3014	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE ARM - 25' AND 45' MAST ARMS	EA	1		
639-3014	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE ARM - 25' MAST ARM	EA	1		
639-3014	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE ARM - 35' AND 35' TANDEM	EA	1		
647-1000	TRAFFIC SIGNAL INSTALLATION NO - 1	LS	1		
647-1000	TRAFFIC SIGNAL INSTALLATION NO - 2	LS	1		
647-1000	TRAFFIC SIGNAL INSTALLATION NO - 3	LS	1		
653-0130	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	EA	1		
682-6222	CONDUIT, NONMETL, TP 2, 2 IN	LF	270		
682-6233	CONDUIT, NONMETL, TP 3, 2 IN	LF	1385		
682-9950	DIRECTIONAL BORE - 7 IN	LF	375		
936-1000	CCTV SYSTEM - TYPE H	EA	1		
937-1000	VIDEO CAMERA SENSOR ASSEMBLY (DUAL-PURPOSE CCTV VIDEO DETECTION)	EA	3		
937-6150	PROGRAMMING MONITOR, TYPE A	EA	3		

<b>Lighting Items</b>					
681-3600	COA – TYPE C POLE FOUNDATION	EA	15		
681-3600	COA – TYPE CH POLE FOUNDATION	EA	9		
682-9950	DIRECTIONAL BORE - 1 1/2 IN	LF	70		
682-9950	DIRECTIONAL BORE - 5 IN	LF	350		
682-9021	ELECTRICAL JUNCTION BOX, CONC GROUND MOUNTED	EA	36		
682-6219	CONDUIT, NONMETL, TP 2, 1 IN	LF	50		



682-6221	CONDUIT, NONMETL, TP 2, 1 1/2 IN	LF	350		
682-6222	CONDUIT, NONMETL, TP 2, 2 IN	LF	3100		
682-6223	CONDUIT, NONMETL, TP 2, 3 IN	LF	70		
682-6232	CONDUIT, NONMETL, TP 3, 1 1/2	LF	80		
682-6233	CONDUIT, NONMETL, TP 3, 2 IN	LF	800		
682-8995	POWER SERVICE CABINET	EA	1		
682-1405	CABLE, TP XHHW, AWG NO 8 - COPPER	LF	30		
682-1406	CABLE, TP XHHW, AWG NO 6 - COPPER	LF	250		
682-1407	CABLE, TP XHHW, AWG NO 4 - COPPER	LF	80		
682-1413	CABLE, TP XHHW, AWG NO 1/0 - COPPER	LF	525		
682-1414	CABLE, TP XHHW, AWG NO 3/0 - COPPER	LF	1050		
680-7000	REMOVAL OF EXISTING COA FIXTURES / POLES / BASES – RETURN FIXTURES/POLES TO OWNER	EA	3		

Landscaping Items					
222-2001	AGGREGATE DRAINAGE COURSE, TP 1	CY	62		
573-1006	UNDDR PIP ONLY, 6IN	LF	2080		
702-0570	LIRIOPE SPICATA - 18 COUNT FLAT, 12" O.C.	EA	2380		
702-0905	QUERCUS PHELLOS - 25 GAL	EA	33		
702-9025	LANDSCAPE MULCH	SY	225		
708-1000	PLANT TOPSOIL	CY	225		
754-4000	WASTE RECEPTACLE UNIT	EA	8		
754-6000	BICYCLE RACK	EA	8		
900-0037	CONCRETE PAVERS	SF	392		
668-7024	DRAIN INLET, 24 IN	EA	1		
576-1012	SLOPE DRAIN PIPE, 12 IN	LF	65		

ITS Items					
647-2141	PULL BOX, PB-4S	EA	2		
682-6222	CONDUIT, NONMETL, TP 2, 2 IN	LF	300		
682-6233	CONDUIT, NONMETL, TP 3, 2 IN	LF	1860		
935-1117	OUTSIDE PLANT FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 96 FIBER	LF	1675		
935-1512	OUTSIDE PLANT FIBER OPTIC CABLE, DROP, SINGLE MODE, 12 FIBER	LF	110		
935-3102	FIBER OPTIC CLOSURE, UNDERGROUND, 12 FIBER	EA	2		
935-3402	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 12 FIBER	EA	2		
935-4010	FIBER OPTIC SPLICE, FUSION	EA	14		
935-8000	TESTING	LS	1		
939-2300	FIELD SWITCH, TYPE A	EA	2		
939-2237	GBIC, TYPE D	EA	7		
939-5010	ELECTRICAL POWER SERVICE ASSEMBLY, AERIAL SERVICE POINT	EA	2		

UTILITY RELOCATIONS					
500-3101	CLASS A CONCRETE FOR THRUST BLOCKS	CY	1		
611-8050	ADJUST MANHOLE TO GRADE	EA	2		
611-8120	ADJUST WATER METER BOX TO GRADE	EA	1		
611-8010	ADJUST HYDRANT TO GRADE	EA	2		
611-8140	ADJUST WATER VALVE BOX TO GRADE	EA	3		
670-1060	WATER MAIN, 6 IN DIP	LF	60		
670-5620	WATER SERVICE LINE, 3/4 IN COPPER, TYPE K	LF	25		
670-9920	REMOVE EXISTING FIRE HYDRANT	EA	1		
670-9710	RELOCATE EXISTING FIRE HYDRANT	EA	1		

<b>TOTAL BID</b>	
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1. The BIDDER understands the IMPLEMENTATION MANAGER reserves the right to evaluate and award the Contract to the BIDDER based upon the method as stated in the Instructions to Bidders Section 00100.
2. The BIDDER understands that the IMPLEMENTATION MANAGER reserves the right to reject any or all bids and to waive any informalities in the bidding.
3. The BIDDER agrees that this bid shall be good and may not be withdrawn for a period of 120 calendar days after the scheduled closing time for receiving bids.
4. The BIDDER understands and agrees that the project scope is identified by the Plans and Specifications. Since it is not possible to have a line item for every work element shown on the Plans and Specifications included on the Bid Form, the BIDDER has account for the costs of work elements which don't have a specific line item in Grading Complete.
5. The BIDDER understands and agrees that for all line items which are not Lump Sum, the Bidder had included in their Bid Total the number of units shown on the Bid Form.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Title \_\_\_\_\_

END OF SECTION

**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 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\_\_\_\_\_.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Signature / Secretary of Corporation

Corporate Seal

END OF SECTION

**BID BOND**

KNOW ALL MEN BY THESE PRESENT, that we \_\_\_\_\_ (hereinafter called the Principal) and \_\_\_\_\_ (hereinafter called the Surety) a Corporation chartered and existing under the laws of the State of \_\_\_\_\_ with its principal offices in the City of \_\_\_\_\_, and authorized to do business in the State of Georgia, are held and firmly bound unto the Implementation Manager in the full and just sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) good and lawful money of the United States of American, to be paid upon demand of the Implementation Manager to which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, and assigns jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to the Implementation Manager, a Bid for furnishing materials, labor and equipment to construct the construction of Intersection Improvements, and 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 Bid.

NOW, THEREFORE, the conditions of this obligation are such that if the Bid be accepted, the Principal shall within ten (10) 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 Implementation Manager and execute a sufficient and satisfactory Performance Bond in the amount of 100% of the total Contract Price, and Payment Bond in the amount of 110% of the Contract Price payable to the Implementation Manager, in form and with security satisfactory to said Implementation Manager, then this obligation to be void; otherwise, to be and remain in full force and virtue in law; and the Security 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 Implementation Manager upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST: Principal Seal

BY: \_\_\_\_\_ BY: \_\_\_\_\_

Title: \_\_\_\_\_ Title: \_\_\_\_\_

ATTEST: Surety Seal

BY: \_\_\_\_\_ BY: \_\_\_\_\_

Title: \_\_\_\_\_ Title: \_\_\_\_\_

END OF SECTION

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**FEDERAL AID CERTIFICATION**  
(English Project)

First Use Date 2013 Specifications: November 22, 2013  
Revised: June 8, 2016

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

**EQUAL EMPLOYMENT OPPORTUNITY**

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

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

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

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

**EXAMINATION OF PLANS AND SPECIFICATIONS**

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

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

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

I also hereby agree that the State, or the Department of Transportation, would suffer damages in a sum equal to at least the amount of the enclosed Proposal Guaranty, in the event my Proposal should be accepted and a Contract tendered me thereunder and I should refuse to execute same and furnish bond as

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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

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

**CONFLICT OF INTEREST**

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

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

**DRUG FREE WORKPLACE**

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

- (1) A drug-free workplace will be provided for the Contractor's employees during the performance of the Contract; and
- (2) Each Contractor who hires a Subcontractor to work in a drug-free workplace shall secure from that Subcontractor the following written certification:

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

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

**BOYCOTT OF ISRAEL**

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

**DEPARTMENT OF TRANSPORTATION**  
**STATE OF GEORGIA**

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**NON-COLLUSION CERTIFICATION**

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

It is understood and agreed that this Proposal is one of several competitive bids made to the Department of Transportation, and in consideration of mutual agreements of the bidders, similar hereto, and in consideration of the sum of One Dollar cash in hand paid, receipt whereof is hereby acknowledged, the undersigned agrees that this Proposal shall be an option, which is hereby given by the undersigned to the Department of Transportation to accept or reject this Proposal at any time within thirty (30) calendar days from the date on which this sealed proposal is opened and read, unless a longer period is specified in the Proposal or the successful bidder agrees in writing to a longer period of time for the award, and in consideration of the premises, it is expressly covenanted and agreed that this Proposal is not subject to withdrawal by the Proposer or Bidder, during the term of said option.

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

Amendment Nos.: 1\_\_\_2\_\_\_3\_\_\_4\_\_\_5\_\_\_. I understand that failure to confirm the receipt of amendments is cause for rejection of bids.

Witness my hand and seal this the \_\_\_ day of \_\_\_\_\_, 20\_\_\_.

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

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_.

\_\_\_\_\_  
(Notary Public)

My Commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_.

\_\_\_\_\_  
(Federal ID No./IRS No.)

\_\_\_\_\_  
(Print Company Name)

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

Joint Bidder:

\_\_\_\_\_  
(Print Company Name)

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

Joint Bidder:

\_\_\_\_\_  
(Print Company Name)

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

## DBE GOALS

VENDOR ID : \_\_\_\_\_ BIDDER'S COMPANY NAME: \_\_\_\_\_

PROJECT NO. & COUNTY: P.I. No. 0015109 Fulton County

LET NO: \_\_\_\_\_ LET DATE: \_\_\_\_\_ TOTAL BID: \_\_\_\_\_

THE REQUIRED DBE GOAL ON THIS CONTRACT IS : 13%

I PROPOSE TO UTILIZE THE FOLLOWING DBE'S:

### LIST OF DBE PARTICIPANTS

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

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

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

**REPLACE THIS PAGE With Project Specific**



## INSTRUCTIONS FOR LIST OF DBE PARTICIPANTS

-

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

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

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

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

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

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

## MONTHLY DBE PARTICIPATION REPORT

REPORT SUBMISSION DATE: \_\_\_\_\_

PROJECT NO.: \_\_\_\_\_  
 COUNTY: \_\_\_\_\_  
 CONTRACT ID NO.: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_

REPORT NO.: \_\_\_\_\_

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

DBE REQUIRED %: \_\_\_\_\_  
 % DOLLAR COMPLETE: \_\_\_\_\_  
 % PROJECT COMPLETE: \_\_\_\_\_

31-Jan	<input type="radio"/>	31-Jul	<input type="radio"/>
28-Feb	<input type="radio"/>	31-Aug	<input type="radio"/>
31-Mar	<input type="radio"/>	30-Sep	<input type="radio"/>
30-Apr	<input type="radio"/>	31-Oct	<input type="radio"/>
31-May	<input type="radio"/>	30-Nov	<input type="radio"/>
30-Jun	<input type="radio"/>	31-Dec	<input type="radio"/>

S = SUPPLIER                      SC = SUBCONTRACTOR

APPROVED DBE				VENDOR ID	DESCRIPTION OF WORK	
	S	SC	ORIGINAL SUBCONTRACT AMOUNT	PREVIOUS PAYMENTS	PAYMENTS THIS REPORT	TOTAL PAYMENTS TO DATE
<b>1</b>						
RN	<input type="radio"/>	<input type="radio"/>				\$ 0.00
RC	<input type="radio"/>	<input type="radio"/>				\$ 0.00
<b>2</b>						
RN	<input type="radio"/>	<input type="radio"/>				\$ 0.00
RC	<input type="radio"/>	<input type="radio"/>				\$ 0.00
<b>3</b>						
RN	<input type="radio"/>	<input type="radio"/>				\$ 0.00
RC	<input type="radio"/>	<input type="radio"/>				\$ 0.00
<b>4</b>						
RN	<input type="radio"/>	<input type="radio"/>				\$ 0.00
RC	<input type="radio"/>	<input type="radio"/>				\$ 0.00
<b>5</b>						
RN	<input type="radio"/>	<input type="radio"/>				\$ 0.00
RC	<input type="radio"/>	<input type="radio"/>				\$ 0.00
<b>6</b>						
RN	<input type="radio"/>	<input type="radio"/>				\$ 0.00
RC	<input type="radio"/>	<input type="radio"/>				\$ 0.00
<b>RN COLUMN TOTALS:</b>			\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>RC COLUMN TOTALS:</b>			\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

TOTAL % PAID TO DATE: \_\_\_\_\_

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

PRINT NAME: \_\_\_\_\_  
 NAME / TITLE

SIGNATURE: \_\_\_\_\_

**FOR DEPARTMENT USE ONLY**

***THIS DOCUMENT HAS BEEN REVIEWED AT THE PROJECT LEVEL BY:***

PRINT NAME: \_\_\_\_\_  
 NAME / TITLE

SIGNATURE: \_\_\_\_\_  
 (Mandatory)

***THIS DOCUMENT HAS BEEN REVIEWED AT THE DISTRICT LEVEL BY:***

PRINT NAME: \_\_\_\_\_  
 NAME / TITLE

SIGNATURE: \_\_\_\_\_  
 (Mandatory)

STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION CONTRACTORS  
BID OPPORTUNITY LIST

FORM EEOP  
PREQUALIFICATION OFFICE  
Revised 05/16/11

Please complete and mail or FAX to:  
Construction Bidding Administration  
600 West Peachtree Street, NW  
Suite 1113  
Atlanta, Georgia 30308  
TELEPHONE: (404) 631-1147  
FAX: (404) 631-1275

This information shall be submitted in accordance with Specification Section 102.18

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Prime Contractor/Consultant: \_\_\_\_\_  
Address/Telephone Number: \_\_\_\_\_  
Bid/Proposal Number: \_\_\_\_\_  
Quote Submitted MM/YY: \_\_\_\_\_

49 CRF Part 26.11 requires the Georgia Department of Transportation to develop and maintain a "bid opportunity list". The list is intended to be a listing of all firms participating or attempting to participate, on DOT assisted contracts. The list must include all firms that bid on prime contracts, or bid or quote subcontracts and materials supplies on DOT-assisted projects, including both DBEs and non-DBEs. For consulting companies this list must include all subconsultants contacting you and expressing an interest in teaming with you on a specific DOT assisted project. Prime contractors and consultants must provide information for Nos. 1, 2, 3, and 4 and must provide information they have available on Numbers 5, 5.A, 6, 7, 8 and 9 for themselves, and their subcontractors and subconsultants.

1. Federal Tax ID Number: \_\_\_\_\_  
2. Firm Name: \_\_\_\_\_  
3. Phone: \_\_\_\_\_  
4. Address: \_\_\_\_\_
6.  DBE  
 Non-DBE  
7.  Subcontractor  
8.  Subconsultant  
9.  Supplier

5. Contact \_\_\_\_\_  
5.A. Company E mail address \_\_\_\_\_

- 
1. Federal Tax ID Number: \_\_\_\_\_  
2. Firm Name: \_\_\_\_\_  
3. Phone: \_\_\_\_\_  
4. Address: \_\_\_\_\_
6.  DBE  
 Non-DBE  
7.  Subcontractor  
8.  Subconsultant  
9.  Supplier

5. Contact \_\_\_\_\_  
5.A. Company E mail address \_\_\_\_\_

- 
1. Federal Tax ID Number: \_\_\_\_\_  
2. Firm Name: \_\_\_\_\_  
3. Phone: \_\_\_\_\_  
4. Address: \_\_\_\_\_
6.  DBE  
 Non-DBE  
7.  Subcontractor  
8.  Subconsultant  
9.  Supplier

5. contact \_\_\_\_\_  
5.A. Company E mail address \_\_\_\_\_

**OATH OF SUCCESSFUL BIDDER**

GEORGIA, \_\_\_\_\_ County

The following personally appeared before the undersigned officer duly authorized by law to administer oaths:

\_\_\_\_\_

And

\_\_\_\_\_

Who, after being first duly sworn, depose and say that they are all of the officers, agents, persons, or employees who have acted for or represented \_\_\_\_\_

In bidding or procuring the Contract with the \_\_\_\_\_  
on the following Project: \_\_\_\_\_ Contract No: \_\_\_\_\_

And that said \_\_\_\_\_

Has not by (herself, himself, themselves) or through any persons, officers, agents, or employees prevented or attempted to prevent by any means whatsoever competition in such bidding: or by any means whatsoever prevented or endeavored to prevent anyone from making a bid therefore, or induced or attempted to induce another to withdraw a bid for said work.

ATTEST:

BY: \_\_\_\_\_ Bidder

By: \_\_\_\_\_  
Name

By: \_\_\_\_\_  
Name

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

Notary Public: \_\_\_\_\_ My Commission Expires: \_\_\_\_\_

END OF SECTION



<b>Contractor's Name:</b>	
<b>Solicitation/Contract No./ Call No. or Project Description:</b>	

**CONTRACTOR AFFIDAVIT**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, entity or corporation which is engaged in the physical performance of services on behalf of the Georgia Department of Transportation has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91.

Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number  
(EEV/E-Verify Company Identification Number)

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Contractor

**I hereby declare under penalty of perjury that the foregoing is true and correct**

\_\_\_\_\_  
Printed Name (of Authorized Officer or Agent of Contractor)

\_\_\_\_\_  
Title (of Authorized Officer or Agent of Contractor)

\_\_\_\_\_  
Signature (of Authorized Officer or Agent)

\_\_\_\_\_  
Date Signed

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

[NOTARY SEAL]

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**FORM OF CONTRACT**

*Any conflict(s) between the contractual language and the current edition of the Georgia Department of Transportation (GDOT) Standard Specifications and the 2013 Supplemental Specifications, the GDOT language and specifications will take precedence.*

DRAFT

**STATE OF GEORGIA, COUNTY OF FULTON**

**CONTRACT FOR PROVISION OF CONSTRUCTION SERVICES**

THIS AGREEMENT, by and between Midtown Business Association Inc., d/b/a Midtown Alliance, party of the first part, hereinafter referred to as "Midtown Alliance," and \_\_\_\_\_, party of the second part, hereinafter called the "Contractor."

WITNESSETH:

**I. SCOPE OF WORK**

That the Contractor has agreed and by these presents does agree with Midtown Alliance to furnish all equipment, tools, materials, skill, labor of every description, and all things necessary to carry out and complete in a good, firm, substantial and workmanlike manner, the Work and construction in strict conformity with the Drawings and Specifications entitled

**Project Name on Bid Set Drawings**

which Drawings and Specifications together with the Advertisement for Bids, Instructions to Bidders, Bid Manual, and Proposal for the construction of said Project submitted by the Contractor shall all form essential parts of this agreement.

In addition to the foregoing, and notwithstanding anything to the contrary stated herein, the following terms and conditions, amendments to this Contract and other documents are incorporated by reference and made a part of the terms and conditions of this Contract as if fully set out herein.

1. "GENERAL CONDITIONS"
2. "SUPPLEMENTAL GENERAL CONDITIONS"
3. "SPECIAL CONDITIONS"
4. "Bid MANUAL" **Dated**
5. "DRAWINGS" as listed in the Bid Manual

6. GDOT Standard Specifications, **2013 Edition**, as amended is incorporated by reference and made a part of the terms and conditions of this Contract as if fully set out herein. Including GDOT Supplemental Specifications dated 2016.
7. "ADDENDA" consisting of Addendum No. \_\_\_\_\_ through Addendum No. \_\_\_\_\_.

The Contractor shall commence work under this Contract within ten (10) calendar days from the date of receipt of the Notice to Proceed, as evidenced by official receipt of certified mail or acknowledgment of personal delivery, and shall fully complete the Work hereunder within **five hundred and forty (540)** calendar days from and including the date of receipt of such notice.

If said Work is not completed within the time stated above, the Contractor shall be liable and hereby agrees to pay Midtown Alliance as liquidated damages and not as a penalty, the sum of **One Thousand One Hundred and Sixty-nine Dollars (\$1,169.00)** per calendar day for each and every day or part of a day thereafter that said Work remains uncompleted.

## **II. PAYMENT**

**A. Fees.** As full payment for the faithful performance of this Contract, Midtown Alliance shall pay said Contractor \_\_\_\_\_ (\$ \_\_\_\_\_), (the "Contract Amount").

**B. Fee Schedule.** Payment shall be made as follows: Partial payments to the Contractor shall be made monthly, based on the value of work completed as provided in the Contract Documents, plus the value of materials and equipment suitably stored, insured and protected at the construction site. Payment to the Contractor shall be made within thirty (30) days of submission by the Contractor of a duly certified and approved estimate of work performed during the preceding calendar month, less the amount of retainage. The estimate shall be submitted on or before the fifteenth (15th) day following the month in which the Work was performed.



Within sixty (60) days after the Work is fully completed and accepted by Midtown Alliance, the balance due hereunder shall be paid; provided, however, that final payment shall not be made until said Contractor shall have completed all work necessary and reasonably incidental to the Contract, including final cleanup and restoration. All claims by the Contractor for compensation and extensions of time shall be submitted in writing within sixty (60) days after completion and acceptance of the Work as herein provided or they shall be forever barred.

In such event no further payment to the Contractor shall be deemed to be 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 Midtown Alliance.

Invoice(s) must be submitted as follows: Original invoice(s) must be submitted to:

Midtown Alliance  
C/O **to be determined**  
999 Peachtree St NE, Suite 730  
Atlanta, GA 30309

### **III. INSURANCE**

All Insurance and Bonding requirements shall be satisfied per the Supplemental General Conditions to this Contract.

**A. Performance Bond and Payment Bond.** Within ten (10) days from the date of Notice of Award of this Contract, the Contractor, as Principal, and \_\_\_\_\_, a surety company listed in the Federal Register and licensed to write surety insurance in the State of Georgia, as surety, shall give a Contract Performance Bond in the amount of

100% of the total Contract Price and a Payment Bond, in the amount of 110% of the Contract Price for the use of all persons doing work or furnishing skills, tools, machinery, or materials under or for the purpose of this Contract.

**B. Workers Compensation.** The Contractor shall, without expense to Midtown Alliance, provide statutory workers compensation insurance and comprehensive liability insurance covering all operations and automobiles as required by the provisions of the Contract, including Subcontractors. The Contractor may carry statutory workers compensation insurance on Subcontractors or require all Subcontractors likewise to carry such insurance.

**C. Surety Bonds.** It is further agreed between the parties hereto that if at any time after the execution of this agreement and the surety bonds for its faithful performance, Midtown Alliance 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 days after the receipt of notice from Midtown Alliance to do so, furnish additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to Midtown Alliance.

#### **IV. WARRANTY AND GUARANTEE**

The Contractor warrants to Midtown Alliance that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, is considered defective. Midtown Alliance, in its sole discretion, may exclude from the Contractor's warranty, remedies for damage or defect which Midtown Alliance determines were caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by Midtown Alliance, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The obligation of this paragraph shall survive acceptance of the Work and

termination of the Agreement. All manufacturer warranties and guarantees shall be delivered to Midtown Alliance prior to Substantial Completion and such delivery shall be a condition precedent to the issuance of the Certificate of Substantial Completion.

#### **V. INDEMNIFICATION**

The General Contractor shall be responsible for all injury or damage of any kind resulting from the work performed under this Contract to persons or property, including employees and property of Midtown Alliance, the Midtown Improvement District, and City of Atlanta. The Contractor shall indemnify and save harmless Midtown Alliance, the Midtown Improvement District, and City of Atlanta and their respective officers, agents and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and all expenses incidental to the defense of any such claims, litigation, and actions, including but not limited to reasonable attorneys' fees based upon or arising out of damage or injury (including death) to persons or property caused by or sustained in connection with the performance of this Contract or by conditions created thereby or arising out of or in any way resulting from the work performed under this Contract and shall assume and pay for, without cost to Midtown Alliance or the Midtown Improvement District or City of Atlanta, the defense of any and all claims, litigations, and actions suffered through any act or omission of the Contractor, or any Subcontractor, or anyone directly or indirectly employed by or under the supervision of any of them. The Contractor expressly agrees to defend against any claims brought or actions filed against Midtown Alliance or the Midtown Improvement District or City of Atlanta, where such claim or action involves, in whole or in part, the subject of the indemnity contained herein, whether such claims or actions are rightfully or wrongfully brought or filed.

#### **VI. DEFINITIONS**

The following definitions shall apply to and modify all Contract Documents:

A. THE OWNER – Shall refer to the City of Atlanta

- B. IMPLEMENTATION MANAGER – Shall refer to Midtown Alliance
- C. PROJECT ENGINEER or ENGINEER – Shall refer to **Jacobs Engineering Group, Inc.**
- D. PROJECT MANAGER – Shall refer to **Atlas Technical Consultants, LLC**

## **VII. RELATIONSHIP OF THE PARTIES**

**A. Extent of Responsibility.** The Contractor shall exercise reasonable care in preparing schedules and estimates for the Engineer's review and Midtown Alliance acceptance. The Contractor is not required to ascertain that the Drawings and Specifications are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Engineer, Project Manager, and the Implementation Manager any nonconforming discovery by or made known to the Contractor as a request for information in such form as the Engineer may require.

**B. Consultation.** The Contractor shall schedule and conduct meetings with the Engineer, Project Manager and Implementation Manager to discuss such matters as procedures, progress, coordination, and scheduling of the Work. The Contractor shall advise the Implementation Manager, Project Manager and the Engineer on proposed site use and improvements, selection of materials, and building systems and equipment.

The Contractor shall also provide recommendations consistent with the Project requirements to the Implementation Manager, Project Manager and Engineer on constructability; availability of materials and labor; time requirements for procurement, installation and construction; and factors related to construction cost including, but not limited to, costs of alternative designs or materials, preliminary budgets, life-cycle data, and possible cost reductions.

The Contractor shall prepare and periodically update a Project schedule for the Engineer's review and the Implementation Manager's acceptance. The Contractor shall obtain the Engineer's approval for the portion of the Project schedule relating to the performance of the Engineer's services. The Project schedule shall coordinate and

integrate the Contractor's performance of the Work, the Engineer's services, other Midtown Alliance consultants' services, and the Implementation Manager's responsibilities, and identify items that could affect the Project's timely completion. The updated Project schedule shall include the following: submission of the Price proposal; components of the Work; times of commencement and completion required of each Subcontractor, ordering and delivery of products, including those that must be ordered well in advance of construction.

**C. Relationships of Trust and Confidence.** The Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Implementation Manager to cooperate with the Engineer and exercise the Contractor's skill and judgment in furthering the interests of the Implementation Manager and Project Manager to furnish efficient construction administration, management services and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Implementation Manager's interests. The Implementation Manager agrees to furnish or approve in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

#### **VIII. DISPUTE RESOLUTION**

Any claim or dispute related to contract performance, additional costs, additional time or for consequential damages (the 'Claims') shall be referred to the Implementation Manager for an initial decision. An initial decision shall be required as a condition precedent for the mediation of any claim arising prior to the date final payment is due unless the Implementation Manager does not provide a decision concerning the claim within thirty (30) days of submission of the claim.

In the event a Claim is not resolved between the parties in conjunction with the decision of the Implementation Manager, such Claim shall be subject to mediation as a condition precedent to the filing of a civil action by either party. Following

the decision of the Implementation Manager, either party may within thirty (30) days of that decision demand in writing that the other party file for mediation within sixty (60) days of the Implementation Manager's decision. If such demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate with respect to the Claim.

In the event the Claim does proceed to mediation the parties will mutually select a mediator with offices based in Fulton County, Georgia. The parties shall share the mediator's fee equally. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction.

#### **IX. TERMINATION OF THE CONTRACT**

The Implementation Manager may terminate this Agreement if the Contractor: a) repeatedly refuses or fails to supply sufficient proper materials or properly skilled workers; b) fails to make payment to subcontractors or suppliers in accordance with the terms of any contracts between the Contractor and said subcontractors or suppliers; c) repeatedly disregards applicable laws, statutes, ordinances, rules and regulations or lawful orders of a public authority; or d) is in substantial breach of a provision of the Contract Documents.

When any of the reasons stated exist, the Implementation Manager may, without prejudice to any other rights or remedies of Midtown Alliance, the Midtown Improvement District, and the City of Atlanta, and after giving the Contractor and the Contractor's surety written notice with opportunity to cure the underlying conditions upon which the termination notice is based within seven (7) days of the date of said notice or to undertake substantial efforts satisfactory to Midtown Alliance to cure said conditions within the seven (7) day period, terminate the Contractor and may, subject to any prior rights of the surety: a) exclude the Contractor from the construction site and take possession of all materials; and b) finish the Work by whatever reasonable method the Implementation Manager may deem expedient. Upon written notice by the Contractor, the Implementation Manager shall furnish the Contractor a detailed accounting of the costs incurred in order to finish the Work.

Upon termination of the Contractor for one of the reasons stated herein, the Contractor shall not be entitled to receive further payment until the Work is finished. If the unpaid balance of the Contract Amount exceeds the costs of finishing the Work, inclusive of any compensation for the reasonable and necessary Engineer's services and expenses resulting from the termination, and any other damages incurred by the Implementation Manager and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance the Contractor shall pay the difference to the Implementation Manager.

#### **X. DOCUMENT CONFLICTS**

In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

1. This Contract for Construction Services and any written Amendments.
2. Addenda, with those of later date having preference over those of earlier date.
3. The Additional Special Conditions and Technical Specifications.
4. The Supplemental Conditions.
5. The General Conditions.
6. The Plans and Specifications. (In the case of an inconsistency between Plans and Specifications or within either Document not clarified by addenda, the better quality or greater quantity of Work shall be provided in accordance with the Engineer's interpretation.)
7. Referenced Documents.

#### **XI. RIGHT, TITLE, OR INTEREST**

The Contractor agrees it shall not sublet, assign, transfer, pledge, convey, sell, or otherwise dispose of the whole or any part of this Contract or his right, title, or interest therein to any person, firm, or corporation without the previous consent of Midtown Alliance in writing.

**XII. SIGNATURES**

IN WITNESS WHEREOF, the parties hereto have set their hands and caused their seals to be affixed hereupon in four (4) counterparts, each to be considered as an original by their authorized representatives, on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

**SIGNATURE PAGES TO FOLLOW.**

DRAFT



**SIGNATURE PAGE TO**  
**CONTRACT FOR CONSTRUCTION SERVICES**

**MIDTOWN ALLIANCE**

Signature: \_\_\_\_\_

Name (Typed or Printed): \_\_\_\_\_

Title: \_\_\_\_\_

**ATTEST:**

Signature: \_\_\_\_\_

Name (Typed or Printed): \_\_\_\_\_

Title: \_\_\_\_\_

**SIGNATURE PAGE TO**  
**CONTRACT FOR CONSTRUCTION SERVICES**

**CONTRACTOR**

Signature: \_\_\_\_\_

Name (Typed or Printed): \_\_\_\_\_

Title: \_\_\_\_\_

**ATTEST:**

Signature: \_\_\_\_\_

Name (Typed or Printed): \_\_\_\_\_

Title: \_\_\_\_\_

**FULTON COUNTY, GEORGIA CERTIFICATE OF CORPORATE AUTHORITY**

I, \_\_\_\_\_, certify that I am Secretary of the corporation named as Contractor herein, same being organized and incorporated to do business under the laws of the State of \_\_\_\_\_; that \_\_\_\_\_, who executed this Contract on behalf of the Contractor was, then and there, \_\_\_\_\_; and that said Contract was duly signed by said officer for and in behalf of said corporation, pursuant to the authority of its governing body and within the scope of its corporate powers.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Secretary (Corporate Seal)

**Revised: December 7, 2009**  
**Revised: October 21, 2013**  
**Revised: November 3, 2014**

**DEPARTMENT OF TRANSPORTATION**  
**STATE OF GEORGIA**  
**DISADVANTAGED BUSINESS ENTERPRISE PROGRAM**  
**CRITERIA FOR ACCEPTABILITY**

The purpose of this special provision is to establish criteria for acceptability of DBE firms for work performed on this contract. The intent is to ensure all participation counted toward fulfillment of the DBE goals is (1) real and substantial, (2) actually performed by viable, independent DBE owned firms, and (3) in accordance with the spirit of the applicable laws and regulations.

The policy of the Georgia Department of Transportation is to ensure compliance with Title VI of the Civil Rights Act of 1964, 49 Code of Federal Regulations, Part 26 and related statutes and regulations in all program activities.

To this end the Georgia Department of Transportation shall not discriminate on the basis of race, color, sex or national origin in the award, administration and performance of any Georgia Department of Transportation assisted contract or in the administration of its Disadvantaged Business Enterprise Program. The Georgia Department of Transportation shall take all necessary and reasonable steps to ensure nondiscrimination.

DBE payments and commitments for Federal-aid projects shall be separate and distinct and cannot be transferred or combined in any matter.

The DBE Goal specified in the contract will be a percentage representing the DBE Race Conscious Participation. The Contractor will strive to achieve an additional percentage in his/her contracts for all projects during the course of the current State Fiscal Year, in order to meet the overall Georgia Department of Transportation DBE goal.

**DBE DIRECTORY:** The Department has available a directory or source list to facilitate identifying DBEs with capabilities relevant to general contracting requirements and to particular solicitations. The Department will make the directory available to bidders and proposers in their efforts to meet the DBE requirements. The directory or listing includes firms which the Department has certified to be eligible DBEs in accordance with 49 CFR Part 26.

**GOAL FOR PARTICIPATION:** If a percentage goal for DBE participation in this contract is set forth elsewhere in this proposal, the Contractor shall complete the DBE GOALS Form included in the proposal. The Contractor is encouraged to make every effort to achieve the goal set by the Department. However, if the Contractor cannot find sufficient DBE participants to meet the goal established by the Department, the Department will consider for award a proposal with less participation than the established goal if:

(A) The bidder can demonstrate no greater participation could be obtained. This should be well documented by demonstrating the Contractor's actions through good faith efforts. The following is a list of types of actions which the Department will consider as part of the Contractor's good faith efforts to obtain DBE participation. This is not intended to be a mandatory checklist nor intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the contract. The Contractor must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The Contractor must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- (2) Selecting portions of the work to be performed by DBEs in order to increase the likelihood the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist DBEs participants in responding to a solicitation.

(4) (a) Negotiating in good faith with interested DBEs.

Contractor(s) are responsible to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

(b) Contractor(s) using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a Contractor to perform the work of a contract with its own organization does not relieve the Contractor of the responsibility to make good faith efforts. Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

(5) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. nonunion employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Contractor's efforts to meet the project goal.

(6) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the contractor.

- (7) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (8) Effectively using the services of available minority/women community organizations; minority/women Contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE's.

(B) The participation proposed by the low bidder is not substantially less than the participation proposed by the other bidders on the same contract.

If no percentage goal is set forth in the proposal, the contractor may enter a proposed DBE participation. This voluntary DBE participation will count as race neutral DBE participation. Prime Contractor shall report race-neutral participation in accordance with the DBE Monthly Report requirements shown in this document.

To be eligible for award of this contract, all bidders will be required to submit the following information to the Department by the close of business on the 3<sup>rd</sup> working day following opening of the bid as a matter of bidder responsibility.

- i. The names and addresses of DBE firms committed to participate in the Contract;
- ii. A description of the work each DBE will perform; The Contractor shall provide information with their bid showing that each DBE listed by the Contractor is certified in the NAICS code(s) for the kind of work the DBE will be performing.
- iii. The dollar amount of participation for each DBE firm participating; Written documentation of the bidder's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal;
- iv. Written confirmation from the DBE committed to participating in the contract, as provided in the prime contractor's commitment.
- v. If the contract goal is not met, evidence of good faith efforts must be provided.

Failure by a bidder to furnish the above information may subject the bid to disqualification. Also failure by the bidder to submit satisfactory evidence of good faith efforts may subject the bid to disqualification.

Award of a contract by the Department to a Prime Contractor who has listed DBE participants with the bid may not constitute final approval by the Department of the listed DBE. The Department reserves the right to approve or disapprove a Disadvantaged firm after a review of the Disadvantaged firm's proposal participation. Payment to the Contractor under the contract may be withheld until final approval of the listed DBEs is granted by the Department.

If the Contractor desires to substitute a DBE in lieu of those listed in the proposal, a letter of concurrence shall be required from the listed DBE prior to approval of the substitution, unless this requirement is waived by the Department.

Agreements between bidder and a DBE in which promises not to provide Subcontracting quotations to other bidders are prohibited.

**DEFINITION:** For the purposes of this provision, the following definitions will apply:

Disadvantaged Business Enterprise or DBE means a for-profit small business concern –

- (1) Ensuring at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and
- (2) Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own the business.

Good Faith Efforts means efforts to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

Joint Venture means an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.



Socially and Economically Disadvantaged Individual means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is –

- (1) Any individual who the Department finds to be a socially and economically disadvantaged individual on a case-by-case basis.
- (2) Any individual in the following groups, members of which are reputedly presumed to be socially and economically disadvantaged.
  - (i) “Black Americans,” which includes persons having origins, in any of the Black racial groups of Africa;
  - (ii) “Hispanic Americans,” which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
  - (iii) “Native Americans,” which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
  - (iv) “Asian-Pacific Americans,” which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong;
  - (v) “Subcontinent Asian Americans,” which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
  - (vi) Women;
  - (vii) Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.
- (3) GDOT will presume that such persons are socially and economically disadvantaged only to the extent permitted by applicable federal law.

Race-conscious measure is one focused specifically on assisting only DBEs, including women- owned

DBEs.

Race-neutral measure is one being, or can be, used to assist all small businesses. For the purposes of this part, race-neutral includes gender-neutrality.

**DISCRIMINATION PROHIBITED:** No person shall be excluded from participation in, denied the benefits of, or otherwise discriminated against in connection with the award and performance of this contract on the grounds of race, color, sex or national origin.

The following assurance becomes a part of this contract and must be included in and made a part of each subcontract the prime contractor enters into with their subcontractors (49 CFR 26.13):

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

**Failure to Achieve Requirements:** Periodic reviews shall be made by the Department to determine the extent of compliance with the requirements set forth in this provision. If the Contractor is found to be in noncompliance, further payments for any work performed may be withheld until corrective action is taken. If corrective action is not taken, it may result in termination of this contract. During the life of the contract, the contractor will be expected to demonstrate good faith efforts at goal attainment as provided by 49 CFR 26.

The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains the Department’s written consent to substitute and, unless the Department’s consent is provided the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

Participation will be counted toward fulfillment of the DBE goal as follows:

- (A) When a DBE participates in a contract, the Contractor counts only the value of the work actually performed by the DBE toward DBE goals.

- (1) Count the entire amount of the portion of a construction contract (or other contract not covered by paragraph (A) (2) of this section) performed by the DBE's own forces. Include the cost of supplies and materials obtained by the DBE for the work of the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate).
  - (2) Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, toward DBE goals, provided the Department determines the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.
  - (3) When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.
- (B) When a DBE performs as a participant in a joint venture, count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract the DBE performs with own forces toward DBE goals.
- (C) Count expenditures to a DBE contractor toward DBE goals only if the DBE is performing a commercially useful function on that contract.
- (1) A DBE performs a commercially useful function when responsible for execution of the work of the contract and carrying out responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

- (2) A DBE does not perform a commercially useful function if their role is limited to being an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.
  - (3) If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of their contract with their own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, the Department will presume the DBE is not performing a commercially useful function.
  - (4) When a DBE is presumed not to be performing a commercially useful function as provided in paragraph (C) (3) of this section, the DBE may present evidence to rebut this presumption.
  - (5) The Department's decisions on commercially useful function matters are subject to review by the US DOT, but are not administratively appealable to the US DOT.
- (D) The following factors are to be used in determining whether a DBE trucking company is performing a commercially useful function:
- (1) The DBE must be responsible for the management and supervision of the entire trucking operation for which they are responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
  - (2) The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
  - (3) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
  - (4) The DBE may lease trucks from another DBE firm, including an owner / operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provided on the contract.
  - (5) The DBE may also lease trucks from a non-DBE and is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE.

- (6) For purposes of this paragraph (D), a lease must indicate the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.
- (E) Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:
- (1) (i) If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies toward DBE goals.
- (ii) For purposes of this paragraph, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.
- (2) (i) If the materials or supplies are obtained from a DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE goals. (ii) For purposes of this section, a regular dealer is a firm owning, operating, or maintaining a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
- (A) To be a regular dealer, the firm must be an established, regular business engaging, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
- (B) A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in this paragraph **(E)(2)(ii)** if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not

on an ad hoc or contract-by-contract basis.

(C) Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph (E)(2).

- (3) With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided you determine the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. Do not count any portion of the cost of the materials and supplies themselves toward DBE goals, however.
- (4) You must determine the amount of credit awarded to a firm for the provision of materials and supplies (e.g., whether a firm is acting as a regular dealer or a transaction expediter) on a contract-by-contract basis. Do not count the participation of a DBE subcontractor toward the prime contractor's DBE achievements until the amount being counted toward the goal has been paid to the DBE.
- (5) No participation will be counted not in compliance with Special Provision entitled "Criteria for Acceptability" which is a part of this contract or with any provisions included in 49 CFR Part 26.
- (6) If the contract amount overruns, the contractor will not be required to increase the dollar amount of DBE participation. If the contract amount under runs, the contractor will not be allowed to under run the dollar amount of DBE participation except when the DBE subcontracted items themselves under run.

## **REPORTS**

- A. The contractor shall submit a "DBE Participation Report" on this contract monthly which shall include the following:

1. The name of each DBE participating in the contract.
2. A description of the work to be performed, materials, supplies, and services provided by each DBE.
3. Whether each DBE is a supplier, subcontractor, owner/operator, or other.
4. The dollar value of each DBE subcontract or supply agreement.
5. The actual payment to date of each DBE participating in the contract.
6. The report shall be updated by the Prime Contractor whenever the approved DBE has performed a portion of the work that has been designated for the contract. Copies of this report should be transmitted promptly to the Engineer. Failure to submit the report within 30 calendar days following the end of the month may cause payment to the contractor to be withheld.
7. The Prime Contractor shall notify the Project Engineer at least 24 hours prior to the time the DBE commences working on the project. The DBE must furnish supervision of the DBE portion of the work, and the person responsible for this supervision must report to the Project Engineer when they begin work on the project. They must also inform the Project Engineer when their forces will be doing work on the project.

B. In order to comply with 49 CFR 26.11, the Prime Contractor shall submit documentation regarding all payments made from the Prime to all DBE subcontractors on federal aid projects in the form of copies of cancelled checks or notarized electronic documentation which validates said payments made on the DBE Monthly Participation Reports. This information shall be required monthly and submitted with the DBE Monthly Participation Report.

C. Failure to respond within the time allowed in the request will be grounds for withholding all payments on all Contracts.

**SUBSTITUTION OF DBEs:** The Contractor shall make reasonable efforts to replace a DBE Subcontractor unable to perform work for any reason with another DBE. The Department shall approve all substitutions of Subcontractors in order to ensure the substitute firms are eligible DBEs.

When a DBE subcontractor is terminated, or fails to complete its work on the contract for any reason, the prime contractor must make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal. The good faith efforts shall be documented by the contractor. If the recipient requests documentation under this provision, the contractor shall submit the documentation within 7 days, which may be extended for an additional 7 days if necessary at the request of the contractor, and the recipient shall provide a written determination to the contractor stating whether or not good faith efforts have been demonstrated.

**CERTIFICATION OF DBEs:** To ensure the DBE Program benefits only firms owned and controlled by Disadvantaged Individuals, the Department shall certify the eligibility of DBEs and joint ventures involving DBEs named by bidders.

Questions concerning DBE Certification/Criteria should be directed to the EEO Office at (404) 631-1972.



**GEORGIA DEPARTMENT OF TRANSPORTATION  
REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION**

**EFFECTIVE FEBRUARY 5, 2016**

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

**Cargo Preference Act Requirements**

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

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

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

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

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

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

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

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

The CPA requirements would be appropriate for oceanic shipments of materials or equipment that is intended for use on a specific Federal-aid project, such as a precast concrete structural members, fabricated structural steel, tunnel boring machines, or large-capacity cranes.

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

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

"General Decision Number: GA20210247 01/01/2021

Superseded General Decision Number: GA20200247

State: Georgia

Construction Type: Highway

County: Fulton County in Georgia.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number      Publication Date  
0                              01/01/2021

SUGA2014-081 10/03/2016

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 15.74	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 15.33	0.00
FENCE ERECTOR.....	\$ 16.54	0.00
HIGHWAY/PARKING LOT STRIPING: Operator (Striping Machine).....	\$ 13.25	2.69
INSTALLER - GUARDRAIL.....	\$ 14.95	0.00
INSTALLER - SIGN.....	\$ 13.03	0.00

IRONWORKER, REINFORCING.....	\$ 14.64	0.00
IRONWORKER, STRUCTURAL.....	\$ 15.12	0.00
LABORER: Concrete Paving Joint Sealer.....	\$ 17.66	0.00
LABORER: Grade Checker.....	\$ 11.45	0.00
LABORER: Mason Tender - Brick...	\$ 11.61	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 12.32	0.00
LABORER: Pipelayer.....	\$ 12.34	0.00
LABORER: Asphalt (Includes Distributor, Raker, Screed, Shoveler, and Spreader).....	\$ 13.87	0.00
LABORER: Common or General, Includes Erosion Control.....	\$ 11.21	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 17.52	2.70
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.38	0.00
OPERATOR: Broom/Sweeper.....	\$ 14.83	1.38
OPERATOR: Bulldozer.....	\$ 15.68	1.25
OPERATOR: Compactor.....	\$ 14.64	0.00
OPERATOR: Concrete Saw.....	\$ 18.94	0.00
OPERATOR: Crane.....	\$ 21.08	0.00
OPERATOR: Distributor.....	\$ 16.69	1.01
OPERATOR: Grader/Blade.....	\$ 18.48	0.00
OPERATOR: Hydroseeder.....	\$ 15.20	0.00
OPERATOR: Loader.....	\$ 13.64	0.94
OPERATOR: Mechanic.....	\$ 19.01	0.00
OPERATOR: Milling Machine Groundsman.....	\$ 13.43	1.24
OPERATOR: Milling Machine.....	\$ 17.02	2.39
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 17.03	0.00
OPERATOR: Piledriver.....	\$ 16.70	0.00
OPERATOR: Roller.....	\$ 13.32	0.84
OPERATOR: Scraper.....	\$ 12.64	0.00
OPERATOR: Screed.....	\$ 15.18	1.66

OPERATOR: Shuttle Buggy.....	\$ 14.06	1.98
PAINTER: Spray.....	\$ 23.30	0.00
TRAFFIC CONTROL: Flagger.....	\$ 11.95	0.00
TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....	\$ 12.66	0.00
TRAFFIC SIGNALIZATION: Laborer.....	\$ 14.00	1.08
TRAFFIC SIGNALIZATION: Electrician.....	\$ 24.72	5.26
TRUCK DRIVER: Dump Truck.....	\$ 16.41	0.00
TRUCK DRIVER: Flatbed Truck.....	\$ 14.91	1.07
TRUCK DRIVER: Hydroseeder Truck.....	\$ 16.74	0.00
TRUCK DRIVER: Lowboy Truck.....	\$ 18.98	0.00
TRUCK DRIVER: Off the Road Truck.....	\$ 12.38	0.00
TRUCK DRIVER: Pickup Truck.....	\$ 13.29	0.00
TRUCK DRIVER: Water Truck.....	\$ 13.23	0.00
TRUCK DRIVER: Semi/Trailer Truck.....	\$ 16.26	0.00

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

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

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

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

#### Union Rate Identifiers

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

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

#### Survey Rate Identifiers

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

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

#### Union Average Rate Identifiers

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

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

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WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

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

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

**ATTACHMENTS**

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

**I. GENERAL**

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

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

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

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

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

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

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

**II. NONDISCRIMINATION**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**6. Training and Promotion:**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### III. NONSEGREGATED FACILITIES

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

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

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

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

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

#### 1. Minimum wages

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

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

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

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

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

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

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

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

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

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

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

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

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

## 2. Withholding

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

## 3. Payrolls and basic records

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

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

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

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

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

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

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

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

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

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

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

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

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

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

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

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

##### b. Trainees (programs of the USDOL).

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

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

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

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

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

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

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

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

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

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

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

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

**10. Certification of eligibility.**

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

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

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

**V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

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

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

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

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

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

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

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

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

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

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

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

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

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

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

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

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

## VII. SAFETY: ACCIDENT PREVENTION

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

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

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

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

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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



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

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

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

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

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

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

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

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

### **1. Instructions for Certification – First Tier Participants:**

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

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

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

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

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

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

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

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

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

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

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

\* \* \* \* \*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

\* \* \* \* \*

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

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

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

\* \* \* \* \*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## **SPECIAL PROVISION**

### **Required Contract Provisions Federal-Aid Construction Contracts**

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1. *Subsection I.4 Selection of Labor; Delete the last sentence in the paragraph.*
2. *Subsections IV Davis Bacon and Related Act Provisions; Delete the first paragraph in its entirety and substitute the following:*

“This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts. The requirements apply to all projects located within the right-of-way of a roadway.”

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**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION  
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246) (43 FR 14895)**

1. As used in these specifications:
  - a. “Covered area” means the geographical area described in the solicitation from which this contract resulted;
  - b. “Director” means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegated authority;
  - c. “Employer Identification Number” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
  - d. “Minority” includes:
    - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
    - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
    - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
    - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor’s or Subcontractor’s failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

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5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, nor the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
  - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
  - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
  - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
  - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
  - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minority and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
  - f. Disseminate the Contractor's EEO policy by providing the notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

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- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc. prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
  - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
  - i. Direct its recruitment efforts, both oral and written, to minority, female and community organization, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the-openings, screening procedures, and test to be used in the selection process.
  - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
  - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
  - l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.
  - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensue that the EEO policy and the Contractor's obligations under these specifications are being carried out.
  - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
  - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
  - p. Conduct a review, at least annually of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete



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benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

APPENDIX A  
NOTICE TO CONTRACTORS  
COMPLIANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964  
FOR  
FEDERAL-AID CONTRACTS

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, national origin, disability, sex, or age in the selection and retention of subcontracts including procurements of materials and leases of equipment. This will be done in accordance with Title VI of the Civil Rights Act of 1964 and other Non-Discrimination Authorities i.e., Section 504 of the 1973 Rehabilitation Act, the 1973 Federal-Aid Highway Act, the 1975 Age Discrimination Act, and the Americans with Disabilities Act of 1990. 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, disability, sex or age.

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.

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

**BUY AMERICA**

First Use 2013 Specifications: November 1, 2013

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

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

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

**CONVICT PRODUCED MATERIALS**

First Use 2013 Specifications: November 1, 2013

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

1. The materials must be produced by convicts who are on parole, supervised release or probation from a prison; or,
2. If produced in a qualified prison facility, the amount of such materials produced in any 12-month period shall not exceed the amount produced in such facility for such construction during the 12-month period ending July 1, 1987. A qualified prison is defined as one producing convict made materials prior to July 1, 1987.

**FEDERAL REGISTER / VOL. 45, NO. 194 / FRIDAY, OCTOBER 3, 1980 / NOTICES****NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246) (43 FR 14895)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered areas, are as follows:

**GOALS FOR FEMALE PARTICIPATION**

APPENDIX A  
(43 FR 19473)

The following goals and timetables for female utilization shall be included in all Federal and federally assisted construction contracts and subcontracts in excess of \$10,000. The goals are applicable to the contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a Federal or federally-assisted construction contract or subcontract. Area covered: Goals for Women apply nationwide.

## Goals and timetables

Timetable	Goals (percent)
4-1-78 to 3-31-79	3.1
4-1-79 to 3-31-80	5.0
4-1-80 Until Further Notice	6.9

GOALS FOR  
MINORITY PARTICIPATION

## Appendix B-80

Until further notice, the following goals for minority utilization in each construction craft and trade shall be included in all Federal or federally assisted construction contracts and subcontracts in excess of \$10,000 to be performed in the respective geographical areas. The goals are applicable to each nonexempt contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally assisted or non-federally related project, contract or subcontract.

**FEDERAL REGISTER / VOL. 45, NO. 194 / FRIDAY, OCTOBER 3, 1980 / NOTICES**

Construction contractors which are participating in an approved Hometown Plan (see 41 CFR 60-4-5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the areas covered by the Hometown Plan. With regard to all their other covered construction work, such contractors are required to comply with the applicable SMSA or EA goal contained in this appendix B-80.

FEDERAL REGISTER / VOL. 45, NO. 194 / FRIDAY, OCTOBER 3, 1980 / NOTICES

State	Goal (percent)
Georgia:	
035 Augusta, GA:	
SMSA Counties:	
0600 Augusta, GA-SC .....	27.2
GA Columbia; GA Richmond, SC Aiken;	
Non-SMSA Counties .....	
GA Burke; GA Emanuel; GA Glascock; GA Jefferson;	
GA Jenkins; GA Lincoln; GA McDuffie, GA Talferro;	
GA Warren; GA Wilkes; SC Allendale; SC Bamberg;	
SC Barnwell; SC Edgefield; SC McCormick;	
036 Atlanta, GA:	
SMSA Counties:	
0520 Atlanta, GA .....	21.2
GA Butts; GA Cherokee; GA Clayton; GA	
Cobb; GA DeKalb; GA Douglas; GA Fayette, GA	
Forsyth; GA Fulton; GA Gwinnett; GA Henry; GA	
Newton; GA Paulding; GA Rockdale; GA Walton	
Non-SMSA Counties .....	
GA Banks; GA Barrow; GA Bartow; GA Carroll; GA Clarke;	
GA Coweta; GA Dawson; GA Elbert; GA Fannin;	
GA Floyd; GA Franklin; GA Gilmer; GA Gordon;	
GA Greene; GA Habersham; GA Hall; GA	
Haralson; GA Hart; GA Heard; GA Jackson; GA	
Jasper; GA Lamar; GA Lampkin; GA Madison;	
GA Morgan; GA Oconee, GA Oglethorpe; GA	
Pickins, GA Pike; GA Polk; GA Rabun; GA	
Spalding; GA Stephens; GA Towns; GA; Union; GA Upson	
White	
037 Columbus, GA:	
SMSA Counties:	
1800 Columbus, GA – AL .....	29.6
Al Russell; GA Chattahoochee; GA Columbus	

Non-SMSA Counties .....	31.6
Al Chambers; AJ Lee; GA Harris; GA Marion; GA Meriwether; GA Quitman; GA Schley; GA Stewart; GA Sumter; GA Talbot; GA Troup; GA Webster	
038 Macon, GA:	
SMSA Counties:	
4680 Macon, GA .....	27.5
GA Bibb; GA Houston; GA Jones; GA Twiggs	
Non-SMSA Counties .....	31.7
GA Baldwin; GA Bleckley; Crawford; GA Crisp; GA Dodge; GA Dooly; GA Hancock; GA Johnson; GA Laurens; GA Macon; GA Monroe; GA Peach; GA Pulaski; GA Putman; GA Taylor; GA Telfair; GA Treutlan; GA Washington; GA Wheeler; GA Wilcox; GA Wilkinson	
039 Savannah, GA:	
SMSA Counties:	
7520 Savannah, GA .....	30.6
GA Bryan; GA Chatham; GA Effingham	
Non-SMSA Counties .....	29.8
GA Appling; GA Atkinson; GA Bacon, GA Bulloch; GA Candler; GA Coffee; GA Evans; GA Jeff Davis; GA Liberty; GA Long; GA McIntosh; GA Montgomery; GA Screven; GA Tattnall; GA Toombs; GA Wayne; SC Beaufort; SC Hampton; SC Jasper	
040 Albany, GA:	
SMSA Counties:	
0120 Albany, GA .....	32.1
GA Dougherty; GA Lee	
Non-SMSA Counties .....	31.1
GA Baker; GA Ben Hill; GA Berrien; GA Brooks; GA Calhoun; GA Clay; GA Clinch; GA Colquitt; GA Cook; GA Decatur; GA Early; GA Echols; GA Grady; GA Irwin; GA Lanier; GA Lowndes; GA Miller; GA Mitchell; GA Randolph; GA Seminole; GA Terrell; GA Thomas; GA Tift; GA Turner; GA Worth	
Florida:	
041 Jacksonville FL:	
Non-SMSA Counties.....	
GA Brantley; GA Camden; GA Charlton; GA Glynn; GA Pierce; GA Ware	22.2

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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First Use 2013 Specifications: November 01, 2013

**SPECIAL PROVISION**

**PROMPT PAYMENT:**

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

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

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

All subcontract agreements shall contain this requirement.



First Use Date: January 1, 2007  
Revised: March 26, 2008  
March 5, 2009  
September 30, 2009  
August 6, 2012

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION**

**Utility Conflicts**

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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 available for reference.

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, relocation, or adjustment and the utility owner is required to begin work within the time specified in the utility's work plan or revised work plan.

Upon request, copies of all approved Work Plans submitted by utility companies having facilities on this project will be made available for examination by the Contractor at the Department's District Office. Utility Adjustment Schedules, when submitted to the Department by the utilities, will be made available to the Contractor after the Notice to Contractors has been posted by the Office of Construction Bidding Administration. The Contractor is responsible for considering in its bid all existing and proposed utility locations and the removals, relocations, and adjustments specified in the Utility's Work Plan.

For this Project, Utility Owners that are required to remove, relocate, or adjust their facility to accommodate the construction of this Project may be liable to the Contractor for damages or delay costs resulting from the Utility Owner's failure to clear conflicts

within the time specified in the approved Utility Work Plan. If the Utility Owner is unable to submit and obtain Department approval of a revised Work Plan or fails to complete the removal, relocation, or adjustment of its facilities in accordance with the approved Work Plan, the Utility Owner may be liable to the Department, or the Contractor, for damages or delay costs.

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 any case in which the Contractor believes that it will be entitled to damages or delay costs from the Utility Owner in accordance with O.C.G.A. 32-6-171, the Contractor shall provide written notice to the Utility Owner and the Department within ten (10) days from the time of the dispute or potential dispute is identified. The Contractor shall follow the Procedures for Utility Damages or Delay Costs outlined in the latest edition of The Utility Accommodation Policy and Standards Manual. Failure to follow the above will result in waiver of the Contractor's claim against the Utility Owner for damages or delay costs.

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.

**CONTRACT PERFORMANCE BOND**

KNOWN ALL MEN BY THESE PRESENT, that we, \_\_\_\_\_ the Principal and \_\_\_\_\_ Surety hereto, as named above, are held and firmly bound to Midtown Alliance and the City of Atlanta as obligees for the use of said obligees 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 full and just sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) lawful money of the United State of America, to be paid to said Midtown Alliance and the City of Atlanta as obligee, its successors, and assigns to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bound Principal has entered into a Contract or Contracts with the said Owner, bearing date of \_\_\_\_\_, 20\_\_\_\_, for furnishing material, labor and equipment to construct the Project.

NOW THEREFORE, the conditions of this obligation are such that if the Principal shall faithfully and fully comply with, perform and fulfill all of the undertakings, covenants, conditions and all other of the terms and conditions of said Contract, including any and all duly authorized modifications of such Contract, within the original term of such Contract or any extensions thereof, which shall include, but not be limited to any obligations created by way of warranties and/or guarantees for workmanship and materials which warranty and/or guarantee may extend for a period of time beyond completion of said Contract, this obligation shall be void, otherwise of full force and effect.

And the Surety to this bond, for value received, agrees that no modification, change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such modification, change, extension of time, alteration or addition to the terms of the Contract or the Work or to the Specifications.

It is agreed that this bond is executed pursuant to and in accordance with the provisions of O.C.G.A. Sections 13-10-1, 36-10-4 and 36-82-101 to 103 to the official code of Georgia, et seq. and is intended to be and shall be construed to be a bond in compliance with the requirements thereof, though not restricted thereto. The life of this Bond extends through the life of the contract and until one year after the final acceptance of the Work by the Owner.

IN WITNESS WHEREOF, the Principal and the Surety have caused these present to be duly signed and sealed in quadruplicate this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

CORPORATE NAME: \_\_\_\_\_  
PRESIDENT / VICE PRESIDENT: \_\_\_\_\_

Attested to By:  
SECRETARY/ASSISTANT SECRETARY: \_\_\_\_\_ [SEAL]

Corporate Surety: BY: \_\_\_\_\_

ATTORNEY-IN-FACT (Signature) \_\_\_\_\_

ATTORNEY-IN-FACT (Typed) \_\_\_\_\_

## INSTRUCTIONS

1. This form is required for use in connection with the Contract identified on its face. There shall be no deviation from this form without approval by the Implementation Manager.
2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of the form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g. an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of this authority must be furnished.
3. Corporation executing the bond as "Surety" must be among those appearing on the US Treasury Department's most current list of approved sureties and must be acting within the amounts and limitations set forth herein.
4. Do not date this bond. The Implementation Manager will date this bond the same date or later than the date of the contract.
5. The Surety shall attach a duly authorized power of attorney authorizing signature on its behalf of an attorney-in-fact.
6. Corporations executing the bond shall affix their corporate seal. Individuals shall execute the bond opposite the word "Seal".
7. The name of each person signing this bond should be typed in the space provided.

**PAYMENT BOND**

KNOWN ALL MEN BY THESE PRESENT, that we, \_\_\_\_\_ the Principal and \_\_\_\_\_ Surety hereto, as named above, are held and firmly bound to Midtown Alliance and the City of Atlanta \_\_\_\_\_, in the full sum of Dollars (\$ \_\_\_\_\_)

For the use and protection of said Midtown Alliance and the City of Atlanta as obligee, and all subcontractors and all persons supplying labor, materials, and machinery and equipment for the performance and the Work provided for in the contract hereinafter referred to, for the payment of which well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally by these presents.

WHEREAS, the above bound Principal has entered into a contract or contracts with Midtown Alliance and the City of Atlanta dated \_\_\_\_\_, 20\_\_ for furnishing material, labor, and equipment to construct Intersection Improvements.

NOW THEREFORE, the conditions of this obligation are such that if the Principal shall make payment promptly to all subcontractors and all persons supplying labor, materials, machinery, and equipment for the performance of said Work, this obligation shall be void; otherwise of full force and effect.

And the Surety to this bond, for value received, agrees that no modification, change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such modification, change, extension of time, alteration or addition to the terms of the Contract or the Work or to the Specifications.

It is agreed that this bond is executed pursuant to and in accordance with the provisions of O.C.G.A. Sections 13-10-1, 36-10-4 and 36-82-101 to 103 of the Official Code of Georgia, et seq. and is intended to be and shall be construed to be a bond in compliance with the requirements thereof, though not restricted thereto.

IN WITNESS WHEREOF, the Principal and the Surety have caused these present to be duly signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

CORPORATE NAME: \_\_\_\_\_  
PRESIDENT/VICE PRESIDENT: \_\_\_\_\_

Attested to By:  
SECRETARY/ASSISTANT SECRETARY: \_\_\_\_\_ [SEAL]

Corporate Surety: \_\_\_\_\_

BY:  
ATTORNEY-IN-FACT  
(Signature): \_\_\_\_\_  
ATTORNEY-IN-FACT (Typed): \_\_\_\_\_

## INSTRUCTIONS

1. This form is required for use in connection with the Contract identified on its face. There shall be no deviation from this form without approval by the Implementation Manager.
2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of the form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g. an attorney-in- fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of this authority must be furnished.
3. Corporation executing the bond as "Surety" must be among those appearing on the US Treasury Department's most current list of approved sureties and must be acting within the amounts and limitations set forth herein.
4. Do not date this bond. The Implementation Manager will date this bond the same date or later than the date of the contract.
5. The Surety shall attach a duly authorized power of attorney authorizing signature on its behalf of an attorney-in-fact.
6. Corporations executing the bond shall affix their corporate seal. Individuals shall execute the bond opposite the word "Seal".
7. The name of each person signing this bond should be typed in the space provided.

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**01****CONTRACT AND CONTRACT DOCUMENTS**

The General Conditions, Supplemental General Conditions and Special Conditions, General Specifications, Technical Provisions, Drawings, Changes, and all other parts of the Contract Documents are complementary, and a requirement occurring in one shall be as binding as though occurring in all. The parts of the Contract are complementary and describe and provide for completion of the Work. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, and shall not be considered in the interpretation of the provisions to which they refer.

Execution of the Contract by Contractor is a representation that Contractor has visited the Site, become familiar with the local conditions under which the Work is to be performed, and has correlated personal observations with the requirements of the Contract Documents.

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. Work not specifically covered in the Contract Documents shall be required if it is consistent therewith and reasonably inferable therefrom as being necessary to produce the intended results. Words and abbreviations that have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

If and to the extent of any inconsistency, ambiguity, conflict, discrepancy or error in the Contract Documents (a "discrepancy"), Contractor shall immediately notify the Implementation Manager in writing and seek clarification from the Implementation Manager (within 24 hours of discovery). In the event that the Implementation Manager fails to clarify such discrepancy within a reasonable time under the circumstances, Contractor shall proceed with the Work and give precedence to the Contract Documents in the following order of priority:

- .01 Written modifications (including without limitation Change Orders and Change Directives) issued after execution of the Contract;
- .02 Addenda issued in writing prior to the execution of the Contract;
- .03 the Contract;
- .04 the Special Conditions;
- .05 the Federal Provisions;
- .06 the Supplemental General Conditions;
- .07 the General Conditions;
- .08 the Technical Special Provision Specifications;
- .09 the Georgia Department of Transportation Supplemental Specifications;
- .10 the Georgia Department of Transportation Standard Specifications;
- .11 the Plans and Drawings;

- .12 the City of Atlanta Standards and Specifications;
- .13 the Georgia Department of Transportation Construction Standards and Details;
- .14 the Atlanta Department of Watershed Maintenance Water Specifications and Sewer Specifications.

If the application of the foregoing procedure fails to resolve the discrepancy, then unless Contractor sought and obtained the clarification of the discrepancy prior to entering into this Contract, then the discrepancy shall be resolved by construing the provision in favor of the Implementation Manager and in such a manner as will further the Implementation Manager's best interests and which may impose the more expensive or greater obligation upon Contractor. When Contractor fails to provide this notice and seek clarification, Contractor assumes full responsibility to correct or adjust work performed pursuant to Contract Documents known, or which should have been known, to contain such a discrepancy.

**02****ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS**

During the progress of the Work, the Engineer may issue additional instructions and Drawings supplemental to those listed in the Special Conditions and Drawing Index showing additional details required for the performance of the Work and may issue revised Drawings pursuant to Change Orders or Change Directives, or for correction of errors in the Drawings. The additional instructions and Drawings thus supplied will become a part of the Contract Documents. Contractor shall carry out the Work in accordance with the additional instructions and Drawings.

**03****DEFINITIONS OF TERMS**

Wherever used in the Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

"Acceptance" shall mean the formal written acceptance by the Implementation Manager and City of the fully and finally completed Work.

"Addenda" shall mean written or graphic instruments issued prior to the execution of the agreement which modify or interpret the Contract Documents by additions, deletions, clarifications, or corrections.

"Agreement" shall mean the Contract – the written agreement for the performance of and payment for the Work, which includes by reference and is a part of the Contract Documents, executed on behalf of the Implementation Manager and the Contractor, also called Implementation Manager-Contractor Agreement.

"Amendment" shall mean a written order to the Contractor authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time, as approved by Implementation Manager.

"Application for Payment" shall mean the form approved by the Implementation Manager and City that is to be used by Contractor in requesting progress payments or final payment, together with such supporting documentation as is required in the Agreement Documents. The Application for Payment

may also be called Payment Application or Progress Payment.

"Approved, Directed, Ordered, or their Derivatives" shall mean approved, as directed, or ordered by the Implementation Manger or the City, unless otherwise clearly indicated.

"Bid" shall mean the offer or Proposal of the Bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.

"Bidder" shall mean any person, firm, or corporation submitting a Bid for the Work.

"Bonds" shall mean Bid, Performance, and Payment Bonds and other instruments of security, furnished by the Contractor and his surety in accordance with the Contract Documents. Bond means a written instrument of surety approved by the City with a valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title One of the United States Code as security to the City and its Implementation Manager, on behalf of a Bidder or the Contractor, to guaranty faithful performance of acts, duties or obligations under the Contract Documents and includes the following:

- Bid Bond means the security instrument furnished with a Bid to guaranty that, if the Bidder is awarded the Contract, the Bidder will execute the Agreement within the time specified in the Bidding Documents.
- Maintenance Bond, if required on the Project, means the security instrument furnished by the Contractor and its surety on the approved form as a guaranty, in addition to other warranties and guaranties, to remedy any defects in the Work of the Contractor which may develop during the warranty period after Completion of the Contract.
- Payment Bond means the security instrument furnished by the Contractor and its surety on the Payment Bond Form as a guaranty that Contractor will pay in full all bills and accounts for materials and labor used in the Work.
- Performance Bond means the security instrument furnished by the Contractor and its surety on the Performance Bond Form as a guaranty that the Contractor will complete the Work in accordance with the terms of the Contract.

"Change" shall mean any change in the Work authorized by the Engineer, including Field Changes, Work Authorizations or Change Orders.

"Change Directive" shall mean a written order prepared by the Owner and signed by the Owner directing a Change in the Work prior to or absent an agreement or adjustment, if any, in the Agreement Price or Agreement Time, or both.

"Change Order" shall mean a written order to the Contractor authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time, as approved by Implementation Manager.

"City" shall mean the City of Atlanta, Georgia and shall include all agencies, establishments or officials of the government of the City. The City may also be referred to from time to time as the "Owner."

"Construction Easement" or "Temporary Easement" shall mean any space or area dedicated to the City or other entity for the purpose of utilities or location of utilities for a specific period of time.

“Contract Documents” shall consist of Advertisement for Bids, Proposal, Bid Bond, Certificate of Corporate Bidder, Oath of Successful Bidder, Contract, Contract Performance Bond, Payment Bond, Instructions to Bidders, General Requirements, General Conditions, Supplementary Conditions, Technical Specifications, Certificates of Insurance, and Drawings. The intent of these documents is to include all materials, appliances, tools, labor and services of every kind necessary for the proper execution of the Work, and the terms and conditions of payment therefor. The Contract Documents shall be considered as one, and whatever is called for by any one of them shall be as binding as if called for by all.

“Contractor” or “General Contractor” shall mean the individual, firm, partnership, corporation, joint venture, LLC or any combination thereof who enters into a contractual Agreement with the Implementation Manager to undertake the execution of the Work as an independent contractor under the terms of the Contract and acting through his or its agents or employees. This excludes Subcontractors/Subconsultants.

“Contract Price” shall mean the total monies payable to the Contractor under the terms and conditions of the Contract Documents.

“Contract Time” shall mean the number of calendar days stated in the Contract Documents for the completion of the Work, or the achievement of a specific interim milestone, as the context may require.

“Day” shall mean a calendar day of twenty-four (24) hours lasting from midnight one day to midnight the next day.

“Drawings” shall mean the part of the Contract Documents which show largely through graphical presentation the characteristics and scope of the Work to be performed and which have been prepared or approved by the Engineer.

“Engineer” shall mean an individual, partnership, or corporation performing professional Engineering services for the Implementation Manager as an independent contractor.

“Equipment” shall mean Equipment incorporated or to be incorporated in the Work.

“Field Order” or “Field Change” shall mean a written order effecting a change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer to the Contractor during construction.

“Final Acceptance” shall mean the date as certified by the Engineer when the project is complete, all Work is complete, and all requirements in accordance with the contract documents are complete.

“GDOT” shall refer to the Georgia Department of Transportation.

“Implementation Manager” shall mean the legally authorized representative of the City, a private contractor, or other concerned agency performing Work under a direct Agreement with the City. For this project the Implementation Manager shall refer to Midtown Business Association, Inc., d/b/a “Midtown Alliance.”

“Inspector” shall mean the authorized representative of the Implementation Manager, the City or GDOT assigned to make detailed inspection of any or all portions of the Work or materials thereof.

“Materials” shall mean Materials incorporated or to be incorporated in the Work unless otherwise clearly

indicated.

“Notice of Award” shall mean the written notice of the acceptance of the Bid from Implementation Manager to the successful Bidder as evidenced by return receipts of registered or certified letters.

“Notice to Proceed” (“NTP”) shall mean written communication issued by the Implementation Manager to the Contractor authorizing it to proceed with the Work and establishing the date of commencement of the Contract Time on which the Contractor shall start to perform its obligations in accordance with the Contract Documents.

“Owner” shall mean City of Atlanta, Georgia.

“Permanent Easement” shall mean any space or area dedicated to the City or other entity for the purpose of constructing and/or maintain existing or future utilities.

“Project” is identified in the Implementation Manager-Contractor Agreement and is the total construction of which the Work performed under the Contract Documents is a part.

“Public Space” or “Public Right-of-Way” shall mean the area between private property lines under the jurisdiction of the City, county, state or federal government, including, but not limited to, an alley, roadway, median, sidewalk, public way, or any combination thereof.

“Punch List” shall mean the lists prepared by the Implementation Manager prior to Final Completion indicating items of Work not in accordance with the requirements of the Contract Documents and which must be performed, corrected and accomplished prior to acceptance of the Work.

“Samples” shall mean physical examples furnished by Contractor, which illustrate materials, equipment or workmanship. Approved samples in conformance with the Contract Documents established the standards of the Work.

“Shall” is mandatory; “may” is permissive.

“Shop Drawings” shall mean all drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the Contractor, a Subcontractor, manufacturer, Supplier, or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

“Site” shall mean the areas required for the performance of the Work.

“Special Conditions” shall mean a part of the Contract Documents consisting of supplements or modifications to the General Conditions and Supplementary Conditions.

“Specifications” or “Technical Specifications” shall mean a part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship specified for this Project.

“State” shall mean the State of Georgia.

“Subcontractor” shall mean an individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

“Substantial Completion” shall mean that date determined by the Implementation Manager when the

construction of the Project or an expressly stipulated part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or stipulated part can be fully utilized for the purposes for which it is intended. The date of Substantial Completion shall constitute the contract time for purposes of liquidated damages.

“Supplementary Conditions” shall mean a part of the Contract Documents consisting of modifications to the General Conditions.

“Superintendent” shall mean the Contractor’s authorized on-job representative designated in writing by the Contractor prior to commencement of any work.

“Suppliers” shall mean any person, supplier, or organization who furnishes materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

“Utility” shall mean and include all public, private, or cooperatively owned lines, facilities and systems for producing, transmitting or distributing communications, power, electricity, heat, gas, oil, crude products, water, steam, waste, storm water, and other similar commodities, such as public owned fire and police signal systems, which directly or indirectly serve the public or any part thereof.

“Work” of the Contractor or Subcontractor shall include all labor, material, equipment, transportation, skill, tools, machinery and other equipment, and things useful or necessary in order to complete the Contract.

“Working Days” shall generally mean Monday, Tuesday, Wednesday, Thursday, and Friday; however, on some projects, Saturday and/or Sunday may be considered working days, if specified as working days by the Implementation Manager. Holidays are not considered Working Days.

**04****APPLICABLE REQUIREMENTS**

The work shall comply with the Contract Documents and with all applicable codes, laws, and regulations of the City, State, or Federal agencies which may have cognizance of any part of the Work. In the event of any conflict between the terms of this Contract and such codes, laws, and regulations, the codes, laws, and/or regulations shall prevail. If the Contractor performs any work knowing it to be contrary to such codes, laws, or regulations, and without such notice to Implementation Manager, he shall assume full responsibility therefore and shall bear any and all costs necessary to correct the Work. All codes, Specifications, regulations, laws, ordinances, and standards referred to in the Contract Documents shall mean, and are intended to be, the latest editions, amendment, and revisions of such reference standard in effect as of the date of the Invitation to Bid for this Contract, and as may be updated or amended to be applicable to the Project.

**05****EXAMINATION OF WORK BY CONTRACTOR**

It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the Work, the conformation of the ground, the character, quality, and quantity of the facilities needed preliminary to and during the prosecution of the Work, the general and local conditions, and all other matters which can in any way affect the Work or the cost thereof under this Contract. No verbal agreement or conversation with any officer, agent, or employee of Implementation Manager or the Engineer, either before or after the execution of the Contract, shall affect or modify any of the terms or obligations herein contained.

## 06

**ADEQUACY OF DESIGN**

Before placing its Bid to the Implementation Manager, and continuously after the execution of the Agreement, Contractor shall carefully study and compare the Contract Documents and shall at once report any error, ambiguity, inconsistency or omission that may be discovered, including any requirement which may be contrary to any law, ordinance, rule, regulation, or order of any public authority bearing on the performance of the Work. By submitting its Bid for the Contract and the Work under it, Contractor agrees that the Contract Documents, along with any supplementary written instructions issued by or through the Engineer that have become a part of the Contract Documents, appear accurate, consistent, and complete. Contractor shall perform no portion of the Work at any time without Contract Documents or, where required, approved shop Drawings, product data, or samples for such portion of the Work.

No claims shall be made by Contractor based on claims of defects, errors, omissions, ambiguities or inconsistencies in the Contract Documents which were reasonably discoverable by a review of the Contract Documents and correlation thereof with the actual conditions at the Project Site. No observation of the Implementation Manager, Engineer or City, and no inspections, tests or approval shall relieve Contractor from its obligation to perform the Work in strict conformity with the Contract Documents.

Contractor has determined, by its own investigation and research, all the conditions affecting the work to be done and materials to be furnished and does not rely upon any representation by the Implementation Manager in connection therewith.

**The Implementation Manager or City, its agents and employees make no representation or warranty of any nature whatsoever to Contractor concerning the Contract Documents.** By the execution hereof, 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 Contractor has not, does not, and will not rely upon any representations or warranties by the Implementation Manager and City concerning such documents as no such representations or warranties have been or are hereby made.

Prior to execution of the Contract, Contractor has evaluated and satisfied itself as to the condition and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project Site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, (iv) availability and cost of materials, tools and equipment, and (v) other similar issues. With the exception of any differing site conditions clause, if any, that may be included in the Contract Documents, the Implementation Manager and City assumes no responsibility or liability for the physical condition of the Project Site, or any improvements located on the Project Site. Contractor shall be solely responsible for providing a safe place for the performance of the Work.

Contractor acknowledges and agrees that its obligation to construct the Work in accordance with the Contract Documents is not in any way altered or affected by the observations or inspections of the City, Implementation Manager, or the Engineer. Further, Contractor acknowledges and agrees that any warranty periods included herein merely set forth the time period during which Contractor is contractually required to specifically perform corrective work and that these warranty periods are not and shall not be construed to be exclusive remedies of the Implementation Manager and City. Instead, Contractor acknowledges and agrees that it shall be liable to the Implementation Manager and City for the cost of correcting Work not performed in accordance with the Contract Documents for the full period of the applicable statute of limitations.

The Contractor shall take no advantage of any apparent error or omission in the plans or specifications but if such error or omission does occur, the Engineer shall have the authority to make corrections and

interpretations deemed necessary to fulfill the intent of the plans and specifications; nor shall such corrections or interpretations, if any, be construed as a waiver of any Contract provision.

**07****NOTICE AND SERVICE THEREOF**

Any notice to Contractor from Implementation Manager or the Engineer relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted by mail, to the said Contractor at his last given address or delivered in person to said Contractor or his authorized representative on the work site.

**08****LIENS**

Contractor acknowledges that neither it nor any of its Subcontractors or Suppliers have lien rights on public property. Contractor will furnish the Implementation Manager and City with evidence, satisfactory to the Implementation Manager and City that all persons who have done Work or furnished materials in performance of this Agreement have been fully paid before it shall demand final payment due or unpaid under this Agreement. In case such evidence is not furnished, an amount necessary to meet the lawful claims of the persons aforesaid may be retained from any monies due or that may become due the said Contractor under this Agreement until the lawful claims aforesaid shall be fully discharged, and it is understood and agreed that the Implementation Manager and City assumes no obligation nor in any way undertakes to pay such lawful claim out of any funds due or that may become due the said Contractor out of the Implementation Manager or City's own funds.

If, in their discretion, the Implementation Manager and City wishes to make joint payment to Contractor and any of its Subcontractors or Suppliers, Contractor agrees that the Implementation Manager and City may do so, and Contractor agrees to cooperate with the Implementation Manager and City in identifying the amounts due Subcontractors and Suppliers to facilitate the making of said joint payment.

**09****SPECIFICATIONS**

- .01 The Specifications, the Drawings accompanying them, and the other Contract Documents shall be supplementary to each other, and any material, workmanship, and/or service which may be in one, but not called for in the others, shall be as binding as if indicated, called for, or implied by all.
- .02 The General Contractor will be held responsible to furnish all labor and materials necessary to complete the Work as indicated by the Drawings and Specifications.
- .03 Unless otherwise stipulated, the General Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary for the execution and completion of the Work. He shall be responsible for entire Work and every part thereof.
- .04 Each section or type of work is described separately in the Technical Specifications; however, should any item of material, equipment, work, or combinations of such be required in one section, and not be described in that section and a similar item described in another section, that description shall apply regardless of the section under which it is described.



- .05 Upon award of the Contract, upon request the Contractor will be supplied, free of charge, up to three complete sets of the Contract Drawings and Specifications. Any prints and Specifications in excess of these shall be furnished at cost at the Contractor's expense.

**10****DRAWINGS AND SPECIFICATIONS**

- .01 The intent of the Drawings and Specifications is that the Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental work necessary to complete the Project in an acceptable manner, ready for use, occupancy, or operation by the City.
- .02 In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings.
- .03 If existing utilities or structures are indicated by the Contract Documents, no warranty is made as to the accuracy or completeness of such indication.
- .04 Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the Contractor's risk.
- .05 The Engineer may (without changing the scope of the Work) furnish the Contractor additional instructions and detail drawings, as necessary to carry out the Work required by the Contract Documents. The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.
- .06 Abridging: Attention is directed to the fact that the detailed Specifications and separate sections may be written in short or abridged form. In regard to every section of the Specifications and all parts thereof, mention therein, or indications on the Drawings of articles, materials, operations, or methods requires that the Contractor:
- A. Provide each item mentioned and indicated, of quality or subject to qualifications noted.
  - B. Perform according to conditions stated, each operation prescribed.
  - C. Provide therefore all necessary labor, equipment, and incidentals.
- .07 Wording: Whenever in these Specifications or on the Drawings the words "directed," "required," "permitted," "ordered," or words of like import are used, it shall be understood that the direction, requirement, permission, or order of Implementation Manager is intended, and similar words, "approved," "acceptable," "satisfactory," or words of like import shall mean approved by, acceptable to, or satisfactory to Implementation Manager.
- .08 Specification Sections: For convenience of reference and to facilitate the letting of contracts and subcontracts, these Specifications are separated into titled sections. Such separation shall not, however, operate to make Implementation Manager an arbiter to establish limits to the contracts

between the Contractor and Subcontractors, nor shall such separation be interpreted as superseding normal union jurisdictions.

- .09 Language: Notwithstanding the appearance of such language in the various sections of the Specifications as, "The Paving Contractor," "The Grading Contractor," etc., the Contractor is responsible to Implementation Manager for the entire Contract and the execution of all work referred to in the Contract Documents.

**11****PRESENT DOCUMENTS GOVERN**

The Contractor shall in no case claim a waiver of any specification requirements on the basis of previous approval of material or workmanship on other jobs of like nature or on the basis of what might be considered "standard" for material or workmanship in any particular location. The Contract Documents for this job shall govern the Work.

**12****CONTRACTOR'S SHOP DRAWINGS**

- .01 The approved Drawings will be supplemented by such Shop Drawings as are needed to adequately control the Work. It is mutually agreed that all authorized alterations affecting the requirements and information given on the approved Drawings shall be in writing.
- .02 Shop Drawings to be furnished by the Contractor for any structure shall consist of such detailed drawings as may be required for the prosecution of the Work.
- .03 Shop Drawings must be approved by the Engineer before the work in question is performed. Drawings for false work, centering, and form work may also be required, and in such cases shall be likewise subjected to approval unless approval be waived. It is expressly understood, however, that approval of the Contractor's Shop Drawings does not relieve the Contractor of any responsibility for accuracy of dimensions and details. It is mutually agreed that the Contractor shall be responsible for agreement and conformity of his Shop Drawings with the approved Drawings and Specifications.
- .04 It is the responsibility of the Contractor to check all Shop Drawings before they are submitted to the Engineer for approval. Shop Drawings which have not been checked and approved by the Contractor will not be approved.
- .05 Shop Drawings shall be submitted only by the Contractor who shall indicate by a signed stamp on the drawings that he has checked the Shop Drawings and that the work shown on them is in accordance with Contract requirements and has been checked for dimensions and relationship with work of all other trades involved. Under no conditions shall Shop Drawings be accepted from anyone other than the Contractor.
- .06 The Contractor shall furnish the Engineer with at least six (6) copies of all Shop Drawings for approval. Two finally approved copies will be returned to the Contractor for his use.
- .07 The Contract Price shall include the cost of furnishing all Shop Drawings and the Contractor will be allowed no extra compensation for such drawings.
- .08 The approval of such Shop Drawings shall not relieve the Contractor from responsibility for

deviations from Drawings or the Specifications unless he has in writing called attention to such deviations, and the Engineer has approved the changes or deviations in writing at the time of submission, nor shall it relieve him from the responsibility for errors of any kind in Shop Drawings. When the Contractor does call such deviations to the attention of the Engineer, he shall state in his letter whether or not such deviations involve any extra cost. If this is not mentioned, it will be assumed that no extra cost is involved for making the change.

**13****INSTRUCTIONS, CHANGES, ETC.**

- .01 All changes, alterations, or instructions in regard to any feature of the Work that differ from the Drawings and Specifications must be approved in writing by Change Order in all cases, and no verbal orders will be regarded as a basis for claims for extra work.
- .02 If the Contractor claims that any instruction by Drawings or otherwise involves extra cost or an extension of time, he shall notify the Engineer in writing within ten (10) days after the receipt of such instructions and in any event before proceeding to execute the Work. Thereafter, the procedure shall be the same as that described for changes in the Work. No such claim shall be valid unless made in accordance with the terms of this section.
- .03 No claims for extra cost will be considered based on an escalation of material prices throughout the period of the Contract.
- .04 No extra work is to be performed or any changes made that involves any extra cost or extension of time unless approved by the Engineer and authorized by Change Order.

**14****MATERIALS, SERVICES, AND FACILITIES**

- .01 The Contractor shall at all times employ sufficient labor and equipment for prosecuting the Work to full completion in the manner and time specified. Failure of the Contractor to provide adequate labor and equipment may result in default of the Contract. The labor and equipment to be used in the Work by the Contractor shall be sufficient to meet the requirements of the Work and shall be such as to produce a satisfactory quality of work, in accordance with accepted industry practices within the time specified in the Contract.
- .02 Materials and equipment shall be so stored and handled as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection. No product which has in any way become unfit for the intended purpose shall be incorporated into the Work.
- .03 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, cleaned, and conditioned as directed by the manufacturer.
- .04 Materials, supplies, and equipment to be incorporated into the Work shall be new and unused unless otherwise specifically stated in the Contract Documents. The source of supply for all such products shall be submitted to the Engineer, together with detailed descriptions thereof in the form of samples, Shop Drawings, tests, or other means necessary to adequately describe the items proposed. If, after trial, it is found that sources of supply, even though previously approved by the Engineer, have not furnished products meeting the intent of the Contract Documents, the Contractor shall thereafter furnish products from other approved sources, and shall remove

completed Work incorporating products which do not meet Contract requirements.

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### **REQUESTS FOR SUBSTITUTIONS**

Requests for substitutions of proprietary products or of a particular manufacturer or vendor must be accompanied by documentary proof of equality, and difference in price and deliveries, if any, in form of certified quotations from Suppliers of both specified and proposed equipment. The item proposed for substitution shall be equal to or superior to the specified item or items, in construction, efficiency, and utility in the opinion of the Engineer. The opinion of the Engineer shall be final and no substitute material or article shall be purchased or installed without such written approval.

In case of a difference in price, Implementation Manager shall receive all benefits of the difference in cost involved in any substitution, when lower, and the Contract altered by Change Order to credit Implementation Manager with any savings to be obtained. However, Implementation Manager shall not be charged for any additional cost in case of a price difference.

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### **RIGHT OF ENTRY**

The Implementation Manager and City reserves the right to enter the Site of the Work herein contracted for, by such agent or agents as they may elect, for the purpose of inspecting the Work, or for the purpose of installing such collateral Work as the Implementation Manager and City may desire. Contractor shall cooperate and coordinate with other contractors prosecuting other phases of the construction. Furthermore, if deemed necessary by the Engineer, Contractor will incorporate work activities of other Implementation Manager and City contractors directly into the schedule such that no phase of the Project(s) is delayed or impacted. The City maintains ultimate control of the City right of way and reserves the right to stop work for any reason deemed appropriate by the ATLDOT commissioner.

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### **INSPECTION AND TESTING OF MATERIALS**

Unless otherwise specifically provided for, the inspection and testing of materials and finished articles to be incorporated in the Work at the site shall be made by bureaus, laboratories, or agencies approved by the Engineer. The cost of such inspection and testing shall be paid by Implementation Manager. The Contractor shall furnish evidence satisfactory to the Engineer that the material and finished articles have passed the required tests prior to the incorporation of such materials and finished articles in the Work.

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### **INSPECTION OF WORK**

- .01 The Contractor shall, at all times, permit and facilitate inspection of the Work by authorized representatives of the Engineer and public authorities having jurisdiction in connection with the Work of this Contract. The presence or observations of the Engineer or its representative at the site of the Work shall not be construed to, in any manner, relieve the Contractor of this responsibility for strict compliance with the provisions of the Contract Documents.
- .02 If the specifications, laws, ordinances, or a public authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for observation or inspection. If the inspection is by another authority, then the Engineer shall be advised of the date fixed for such inspection. Required certificates of inspection shall be

secured by the Contractor. Contractor having secured all certificates of inspection will deliver same to the Engineer upon completion. If any work should be covered up without approval or consent of the Engineer, it shall, if required by the Engineer, be uncovered for examination at the Contractor's expense.

- .03 Should any disagreement or difference arise as to the estimate, quantities, or classifications or as to the meaning of the Drawings or Specifications, or any point concerning the character, acceptability, and nature of the several kinds of work, any materials and construction thereof, the decisions of the Engineer shall be final and conclusive and binding upon all parties to the Contract.

**19****AUTHORITY OF THE ENGINEER**

- .01 The Contractor shall perform all of the Work herein specified under the general direction, and to the entire satisfaction, approval, and acceptance of the Engineer. The Engineer shall decide all questions relating to measurements of quantities, the character of the Work performed, and as to whether the rate of progress is such that the Work will be completed within the time limit of the Contract. All questions as to the meaning of these Specifications will be decided by the Engineer.
- .02 The approval of the Engineer of any materials, plants, equipment, Drawings, or of any other items executed, or proposed by the Contractor, shall be construed only to constitute an approval of general design. Such approval shall not relieve the Contractor from the performance of the Work in accordance with the Contract Documents, or from any duty, obligations, performance guarantee, or other liability imposed upon him by the provisions of the Contract.

**20****REJECTIONS OF WORK AND MATERIALS**

- .01 All materials and equipment furnished and all work done that is not in accordance with the Drawings or Specifications or that is defective will be rejected. All rejected materials, equipment, or work shall be removed immediately. If rejected materials, equipment, or work is not removed within forty-eight (48) hours from the date of letter of notification, the Engineer shall have the right and authority to stop the Contractor and his work immediately, and/or shall have the right to arrange for the removal of said rejected materials, equipment, or work at the cost and expense of the Contractor. All rejected materials, equipment, or work shall be replaced with other material, equipment, or work which conforms with the Drawings and Specifications at no additional cost to Implementation Manager.
- .02 Inspection of the Work shall not relieve the Contractor of any of his obligations to fulfill his Contract and defective work shall be made good regardless of whether such work, material, or equipment has been previously inspected by the Engineer and accepted or estimated for payment. The failure of the Engineer to condemn improper materials or workmanship shall not be considered as a waiver of any defect which may be discovered later, or for work actually defective.

**21****WEATHER CONDITIONS**

The Contractor will be required to protect all work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure to protect such, all such materials or work shall be removed and replaced at the expense of the Contractor.

**22****ROYALTIES AND PATENTS**

The Contractor shall hold and save Implementation Manager and the City and its officers, agents, servants, and employees, harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by Implementation Manager, unless otherwise specifically stipulated in the Contract Documents.

**23****CONTRACTOR'S PERSONNEL**

- .01 The Contractor will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. An experienced Superintendent and necessary assistants competent to supervise the particular types of work involved shall be assigned to the Project by the Contractor, and shall be available at all times when work is in progress. The name of the Superintendent shall be submitted with qualifications of same prior to start of the Work and shall be approved by the Engineer prior to start of the Work. The Superintendent so named by the Contractor shall be employed by the Contractor and shall have served in a supervisory capacity on at least one Project of like description and size performed by the Contractor during the previous twelve months. Under no circumstances shall an employee of any Subcontractor serve as Project Superintendent. The Superintendent shall represent the Contractor, and all directions given to the Superintendent shall be as binding as if given to the Contractor.
- .02 Only persons skilled in the type of work which they are to perform shall be employed. The Contractor shall, at all times, maintain discipline and good order among his employees, and shall not employ on the Work any unfit person or persons or anyone unskilled in the work assigned him.

**24****LINES, GRADES, AND MEASUREMENTS**

- .01 Such stakes and markings as the Engineer may set for either its or the Contractor's guidance shall be preserved by the Contractor. Failure to protect such stakes or markings, or gross negligence on the Contractor's part resulting in loss of same, may result in the Contractor being charged for their replacement.
- .02 The Contractor must exercise proper care and caution to verify the grades and figures given him before proceeding with the Work, and shall be responsible for any damage or defective work caused by his failure of such care and caution. He shall promptly notify the Engineer of any errors or discrepancies he may discover in order that the proper corrections may be made.

**25****PERMITS AND INSPECTION FEES**

Permits shall be secured by the Contractor and inspections will be required. The Contractor shall secure and pay for any permits and inspection fees required. Contractor shall give all notices and comply with all permits, laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If any permit, license or certificate expires or is revoked, terminated or suspended as a result of any action on the part of Contractor or any person or entity for which Contractor is responsible, it shall neither be entitled to any additional compensation, nor to an extension of Agreement Time.

**26****LAWS AND REGULATIONS**

The Contractor's attention is directed to the fact that all applicable Federal, State, and City laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the Contract Documents the same as though herein written out in full. The Contractor shall keep himself fully informed of all laws, ordinances, and regulations of the Federal, State, and City in any manner affecting those engaged or employed in the Work or the materials used in the Work or in any way affecting the conduct of the Work and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency should be discovered in this Contract, or in the Drawings or Specifications herein referred to, in relation to any such law, regulation, ordinance, order, or decree, he shall herewith report the same, in writing, to the Engineer. He shall at all times himself observe and comply with all such laws, ordinances, and regulations, and shall protect and indemnify the City, Midtown Alliance, and the Midtown Improvement District and its agents against any such law, ordinance, regulation, order, or decree, whether by himself or by his employees.

**27****CONTRACTOR'S OBLIGATIONS**

The Contractor shall, in good workmanlike manner, do and perform, all work and furnish all supplies and materials, machinery, equipment, facilities, and means, except as herein otherwise expressly specified, necessary, or proper to perform and complete all the Work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and said Specifications and in accordance with the Drawings of the Work covered by this Contract and any and all supplemental drawings of the Work covered by this Contract. He shall furnish, erect, maintain, and remove such construction, plants, and such temporary works as may be required. He alone shall be responsible for the safety, efficiency, and adequacy of his plants, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of the Contract and Specifications, local ordinances, and State and Federal laws; and shall do, carry on, and complete the entire Work.

**28****ASSIGNMENTS**

The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of Implementation Manager.

**29****CONTRACTOR'S HOLD HARMLESS AGREEMENT**

The General Contractor shall be responsible from the time of signing the Contract, or from the time of the beginning of the first work, whichever shall be the earlier, for all injury or damage of any kind resulting from this work, to persons or property, including employees and property of the City. The Contractor shall exonerate, indemnify, and save harmless the City, Midtown Alliance, and the Midtown Improvement District from and against all claims or actions, and all expenses incidental to the defense of any such claims, litigation, and actions, based upon or arising out of damage or injury (including death) to persons or property caused by or sustained in connection with the performance of this Contract or by conditions created thereby or arising out of or any way connected with work performed under this Contract and shall assume and pay for, without cost to the City, Midtown Alliance, and the Midtown Improvement District, the defense of any and all claims, litigation, and actions suffered through any act or omission of the Contractor, or any Subcontractor, or anyone directly or indirectly employed by or under the supervision of any of them. The Contractor expressly agrees to

defend against any claims brought or actions filed against the City, Midtown Alliance, and the Midtown Improvement District, where such claim or action involves, in whole or in part, the subject of the indemnity contained herein, whether such claims or actions are rightfully or wrongfully brought or filed.

**30****LAND AND RIGHTS-OF-WAY**

- .01 Prior to entering on any land or right-of-way, the Contractor shall ascertain the requirements of applicable permits or easements obtained by Implementation Manager, and shall conduct his work in accordance with requirements thereof including the giving of notice. The Contractor shall be fully responsible for performing work to the requirements of any permit or easement granting entity even though such requirements may exceed or be more stringent than that otherwise required by the Contract Documents, and shall compensate Implementation Manager fully for any loss or expense arising from failure of the Contractor to perform as required by such entity.
- .02 The Contractor shall provide at his own expense and without liability to Implementation Manager any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

**31****PROTECTION OF WORK, PROPERTY, AND PERSONS**

- .01 The Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, lakes, drainage ways, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction.
- .02 The Contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the Work, all necessary warning safeguards for devices and safety and protection of the Work, the public, and adjoining property. He will notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.
- .03 The Contractor shall, prior to commencing other on-site work, accurately locate above and below ground utilities and structures which may be affected by the Work, using whatever means may be appropriate. The Contractor shall mark the location of existing utilities and structures, not otherwise readily visible, with flagging, stakes, barricades, or other suitable means, and shall preserve and protect all utilities and structures not designated for removal, relocation, or replacement in the course of construction. He shall notify the Implementation Manager promptly on discovery of any conflict between the Contract Documents and any existing facility.
- .04 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, or unanticipated conditions where delay would substantially impact the time or cost of work, the Contractor, upon notification to the Engineer, shall act to prevent threatened damage,



injury, or loss. Any claim for compensation or extension of time by the Contractor due to such extra work shall be submitted to the Engineer within ten (10) days of the date of performing such work or deviations in the manner prescribed for a Change Order.

- .05 All existing utilities, both public and private, including sewer, gas, water, electrical, and telephone services, etc., shall be protected and their operation shall be maintained through the course of the Work. Any temporary shutdown of an existing service shall be arranged between the Contractor and the responsible agency. The Contractor shall assume full responsibility and hold the City, Midtown Alliance, and the Midtown Improvement District harmless from the result of any damage that may occur as a result of the Contractor's activities.

**32****PRIOR USE BY CITY**

Prior to completion of the Work, the City may take over operation and/or use of the incomplete Project or portions thereof. Such prior use of facilities by the City shall not be deemed as acceptance of any work or relieve the Contractor from any of the requirements of the Contract Documents.

**33****CLEANING UP**

The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by Contractor's employees or work. Upon completion of the Work, the Contractor shall remove all his plants, tools, materials, and other articles from the property of the City.

**34****CHANGES IN THE WORK**

- .01 Implementation Manager may at any time, as the need arises, order changes within the scope of the Work without invalidating the agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the Work, an adjustment may be authorized by Change Order.
- .02 The Engineer, also, may at any time, by issuing a Field Order make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the Work so ordered by the Engineer unless the Contractor believes that such Field Order entitles him to a change in Contract Price or Time, or both, in which event he shall give the Engineer written notice thereof within fifteen (15) days after the receipt of the ordered change, and the Contractor shall not execute such changes pending the receipt of an executed Change Order or further instruction from Implementation Manager.
- .03 The Contract Price may be changed only by a Change Order. The value of any work covered by a Change Order or of any claim for increase or decrease in the Contract Price shall be determined by one or more of the following methods in the order of precedence listed below.
- A. Unit prices previously approved.
  - B. An agreed lump sum.
  - C. The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the Work. In addition, there shall be added an amount agreed upon

but not to exceed eight percent (8%) of the actual cost of such work to cover the cost of general overhead and profit.

- D. Agreement on any Change Order constitutes a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including, but not limited to, all direct or indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule. In the event that a Change Order increases the Contract Sum, Contractor must include the Work covered by such Change Orders in Applications for Payment as if such Work were originally part of the Contract Documents.

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**TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

- .01 It is hereby understood and mutually agreed, by and between the Contractor and Implementation Manager, that the date of beginning, rate of progress, and the time for completion of the Work are essential conditions of this Contract; and it is further mutually understood and agreed that the Work embraced in this Contract shall be commenced on a date to be specified in the Notice to Proceed.
- .02 The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterrupted at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and Implementation Manager, that the time for the completion of the Work described herein is a reasonable time for the completion of the same, taking into consideration the average climate range and usual industrial conditions prevailing in this locality.
- .03 If the said Contractor shall neglect, fail or refuse to complete the Work within the time herein specified, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to Implementation Manager, the amount specified herein, not as a penalty, but as liquidated damages.
- .04 It is further agreed that time is of the essence of each and every portion of this Contract and of the Specifications wherein a definite portion and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be the essence of this Contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor including, but not restricted to, acts of God, or to the public enemy, acts of Implementation Manager, acts of another contractor in the performance of the contract with Implementation Manager, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather exceeding the average climatic conditions in the area of the Work.
- .05 Provided further, that the Contractor shall within ten (10) days from the beginning of such delay, notify Implementation Manager, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be supported by the attachment of records of the National Oceanic and Atmospheric Administration showing meaningful variances from historic trends thereby substantiating the fact that weather conditions were abnormal for the relevant period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction activities. The

Contractor shall be entitled to an extension of the Contract Time only for extraordinary adverse weather conditions, and then only for the number of days which are due solely to such extraordinary adverse weather conditions. The Contractor is not entitled to any costs associated with extraordinary adverse weather conditions.

- .06 Where the City has beneficial occupancy of a usable facility prior to the expiration of the specified Contract Time, but where contract work items remain outstanding, Implementation Manager, at its option, may, in lieu of all or a portion of liquidated damages owed by the Contractor, charge the Contractor for actual cost of administering the Contract for the period subsequent to expiration of the Contract completion date (not to exceed the total amount which could be assessed under liquidated damages).

**36****PAYMENTS TO CONTRACTOR**

- .01 Cost Breakdown - The Contractor shall be prepared to submit a cost breakdown immediately after the opening of Bids. Cost breakdown shall be based on values of parts of the Work as divided according to sections of the Specifications, and shall be further subdivided into labor and materials.
- .02 Equipment, Materials, and Work Covered by Partial Payments - All equipment, materials, and work covered by progress payments shall, upon payment thereof, become the sole property of the City, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of equipment, materials, and work upon which payments have been made, or the restoration of any damaged work.

**37****SCHEDULES, REPORTS, AND RECORDS**

- .01 The Contractor shall submit to the Engineer such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records, and other data as the Engineer may request concerning work performed or to be performed.
- .02 Prior to the first partial payment estimate, the Contractor shall submit schedules showing the order in which he proposes to carry on the Work, including dates at which he will start the various parts of the Work, estimated date of completion of each part; and, as applicable, the dates at which special detail drawings will be required, and respective dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.
- .03 The Contractor shall also submit a schedule of payments that he anticipates he will earn during the course of the Work.
- .04 In the event Implementation Manager determines that the performance of the Work, or a Milestone Date, has not progressed or reached the level of completion required by the Contract Documents, Implementation Manager shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, but not limited to: (1) working additional shifts or overtime; (2) supplying additional manpower, equipment and/or facilities; and (3) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures must continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Implementation Manager's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the

construction schedule. The Contractor is not entitled to an adjustment in the Contract Sum for additional work, equipment or facilities supplied in connection with Extraordinary Measures required by the Implementation Manager. Implementation Manager may exercise its rights pursuant to this Paragraph as frequently as Implementation Manager deems necessary to ensure that the Contractor's performance of the Work will comply with any Milestone Date or completion date set forth in the Contract Documents.

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**IMPLEMENTATION MANAGER'S RIGHT TO SUSPEND OR TERMINATE WORK**

- .01 If the Contractor is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the Contractor or for any of his property, or if he files a petition to take advantage of any debtor's act or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workers or suitable materials or equipment, payments to Subcontractors or for labor, materials or equipment, or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the Work, or if he otherwise violates any provision of the Contract Documents, then Implementation Manager may, without prejudice to any other right or remedy and after giving the Contractor and his surety a maximum of seven (7) days from delivery of a written notice, declare the Contract in default, take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and call upon the surety to finish the Work by whatever method deemed expedient.
- .02 Where Contractor's services have been so terminated by Implementation Manager, the termination will not affect any rights or remedies of Implementation Manager against Contractor then existing or which may therefore accrue. Any retention or payment of moneys due Contractor by Implementation Manager will not release Contractor from liability. If the Contractor can establish or it is otherwise determined that the Contractor was not in default or that the failure to perform is excusable, a termination for default will be considered to have been a termination for the convenience of the Implementation Manager and the rights and obligations of the parties governed accordingly.
- .03 Upon seven (7) days' written notice to Contractor, Implementation Manager may, for its own convenience and at its sole option, without cause and without prejudice to any other right or remedy of Implementation Manager, elect to terminate the Contract. In such case, Contractor shall be paid (without duplication of any items):
  - A. For completed and acceptable work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such work;
  - B. For expenses sustained in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with Uncompleted Work;
  - C. For amounts paid in settlement of terminated contracts with Subcontractors and Suppliers;
  - D. Reasonable expenses directly attributable to termination including, but not limited to, fees and charges of engineers, Engineers, attorneys and other professionals, and court costs;
  - E. Contractor shall not be paid on account of anticipatory profits or overhead or consequential damages.

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**ACCEPTANCE OF WORK AND FINAL PAYMENT**

- .01 Before final acceptance of the Work and payment to the Contractor of the percentage retained by Implementation Manager, the following requirements shall be complied with:
- A. **Final Inspection:** Upon notice from the Contractor that his work is completed, the Engineer shall make a final inspection of the Work, and shall notify the Contractor of all instances where his work fails to comply with the Drawings and Specifications, as well as any defects he may discover. The Contractor shall immediately make such alterations as are necessary to make the Work comply with the Drawings and Specifications.
  - B. **Final Payment:** When the Work under this Contract is completed, a final payment request shall be submitted representing the original Contract Price and Change Orders to the Contract. The final payment shall not be due until the Contractor shall have completed all work necessary and reasonably incidental to the Contract, including final clean-up.
- .02 Acceptance of the Work and the making of final payment shall not constitute a waiver of any claims by Implementation Manager. Payments otherwise due the Contractor may be withheld by Implementation Manager because of defective work not remedied and unadjusted damage to others by the Contractor or Subcontractors, vendors, or laborers.
- .03 All claims for final payment must be submitted within sixty (60) days after the Work has been completed and accepted by Implementation Manager. Failure to present said claims within that period shall constitute a waiver of the claim by the Contractor. All claims are subject to final approval and audit by Implementation Manager.

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**VENUE**

The law of the State of Georgia shall govern the construction of this Contract. The courts of Fulton County, Georgia shall have exclusive jurisdiction to try disputes arising under or by virtue of this Contract.

END OF SECTION

## SUPPLEMENTAL GENERAL CONDITIONS

### 1. SUPPLEMENTS AND CONFLICTING PROVISIONS

The supplements contained in these Supplemental General Conditions modify, change, delete from, or add to the General Conditions of these Contract Documents. In all cases in which the provisions of the General Conditions conflict with the provisions of the Supplemental General Conditions, the provisions of the Supplemental General Conditions shall prevail. Where any article of the General Conditions is modified or any paragraph, subparagraph, or clause thereof is modified by these supplements, the unaltered provisions of that article, paragraph, subparagraph, or clause shall remain in effect.

### 2. GENERAL CONDITIONS

The General Conditions are general in scope and may refer to conditions not encountered on the work covered by these Contract Documents. Any provision of the General Conditions which pertains to a non-existent condition and is not applicable to the work to be performed hereunder, or which conflicts with any provision of the Supplemental General Conditions or Specifications, shall have no meaning in these Contract Documents and shall be disregarded.

### 3. DEFINITIONS

- A. DEPARTMENT – Shall refer to the Department of Transportation.
- B. PROJECT MANAGER – Shall refer to the entity named by the Implementation Manager.
- C. SPONSOR – Shall refer to the City of Atlanta, Georgia.

### 4. INTENT OF CONTRACT DOCUMENTS

It is the intent of these Contract Documents to prescribe a complete work program and that the Contractor shall (a) furnish all labor, materials, products, supplies, tools, equipment, transportation, and all incidental work necessary for the successful execution and completion of the work in accordance with these Contract Documents and to complete the project in an acceptable manner, ready for use by the City of Atlanta within the time specified herein; and (b) carry out all duties and obligations imposed by these Contract Documents.

The Contractor shall provide all work and materials not shown in detail but necessary for completion of the project as indicated or specified including a proper and suitable foundation preparation, base, or support and a reasonable finish consistent with adjacent work that is shown or specified. The Contractor shall make plural and complete all work which, to avoid needless repetition or for the sake of brevity, has been shown singly or partially indicated.

All of the work shall be done and all materials furnished according to the provisions of the Specifications and in conformity with the dimensions, cross-sections, alignment, grades, tolerances and all other details and notations shown on the plans and approved shop and working drawings, except that deviations from the plans, approved shop and working drawings, and specifications may be permitted by the Engineer when in his opinion such deviations are immaterial and are not detrimental to the overall quality of the Work. The

decision of the Engineer, in these respects, shall be final and conclusive; nor shall the Contractor claim extra compensation.

Allowable deviations, other than specified tolerances from the plans and working drawings, as may be required by the exigencies of construction, will in all cases be determined by the Engineer. The dimensions shown on the plans shall be attained within the limits of precision that good construction practices will permit.

The applicable provisions of the Contract Documents shall apply with equal force to all work, including extra work, performed under these Contract Documents, whether performed either directly by the Contractor or by any Subcontractor.

It is understood and agreed that the work shall be performed according to the intent of these Contract Documents.

#### 5. SUBSTITUTE EQUIPMENT, "OR EQUAL" CLAUSE

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturers' or vendors' names, trade names, catalogue; numbers, etc., and is accompanied by the phrase "or equal," or "or approved equal," it is intended to establish a standard; and, materials, articles, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be: considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's name, trade name, catalogue number, etc. and is accompanied by the phrase "or equal," "or approved equal," or the like, it is intended for, the specified material, article, or piece of equipment to be furnished as specified. If after Contract award, the Contractor wants to substitute an alternate material, or piece of equipment for that specified when no "or equal" has been allowed, the Engineer may approve its use, if in the opinion of the Engineer, such material, article, or piece of equipment is of equal function to that specified. Any cost savings for use of the substitute will be deductible from the Contract Price and the use of the substitute will be approved by a Change Order to the Contract Documents.

#### 6. ERRORS AND OMISSIONS

The Contractor shall take no advantage of any apparent error or omission in the plans or specifications but if such error or omission does occur, the Engineer shall have the authority to make corrections and interpretations deemed necessary to fulfill the intent of the plans and specifications; nor shall such corrections or interpretations, if any, be construed as a waiver of any Contract provision.

#### 7. AUTHORITY OF THE IMPLEMENTATION MANAGER

The inspection of the performance and execution of the work under these Contract Documents is vested wholly in the Implementation Manager or in his authorized representative or agent, acting in any and all capacities assigned to him in these Contract Documents. The Implementation Manager may authorize a person to act as the Implementation Manager's authorized representative or agent in carrying out the duties

specified in these Contract Documents. The instructions of the Implementation Manager, or authorized representative, shall decide any and all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance of the Contract and rate of progress of the work; all questions which may arise as to the interpretation of the Drawings, Specifications, and other Contract Documents; all questions as to the intent of these Contract Documents; all questions as to the acceptable completion of the work covered by these Contract Documents; and all questions as to compensation. Upon written request from the Contractor, written instructions will be furnished on any important item.

The decision of the Implementation Manager, or authorized representative, shall be final and binding on all questions concerning the execution of the work and interpretation of the Drawings, Specifications, and other Contract Documents, and he shall have the authority to enforce and make effective such decisions and orders which the Contractor fails to carry out promptly.

The Implementation Manager, or authorized representative, shall have authority to suspend operations at any time, without additional cost to the Implementation Manager, when the work, in the Implementation Manager's opinion, is not being carried out in conformity with the Drawings, Specifications, and other Contract Documents.

The Implementation Manager, or authorized representative, shall have the authority to make, without prior notice to the Surety, from time to time, such alterations in the Drawings or in the character of the work as he may consider necessary or desirable to complete the proposed work to his satisfaction and consistent with the general intention of the Contract Documents. Notice of every such alteration or change shall be given in writing to the Contractor, and no such alteration or change shall be considered as constituting a waiver of any of the provisions of the Contract Documents, or as nullifying or invalidating any of such provisions.

The Implementation Manager, or authorized representative, may appoint Inspectors as are necessary to observe the performance of the work under these Contract Documents and the amount, character, and quality of materials supplied.

## 8. AUTHORITY AND DUTIES OF PROJECT MANAGER

The Project Manager is authorized to observe all work done and materials furnished under these Contract Documents. Such observation will extend to all or to any part of the work and to the preparation, fabrication, or manufacture of the materials, or products to be incorporated in the work.

The authority and duties of the Project Manager, under authorization from the Implementation Manager, are to examine the materials and products furnished; observe the work done; call to the attention of the Contractor any deviation from these Contract Documents and; report the results of the examinations and observations to the Engineer.

The Project Manager will not be authorized to revoke, alter, enlarge, or relax any requirements of these Contract Documents, nor to approve or accept any portion of the work, nor will they be authorized to issue instructions contrary to these Contract Documents. They will in no case act as foremen nor will they interfere with management of the work.



## 9. EMERGENCY PROTECTION

Whenever, in the opinion of the Implementation Manager, the Contractor has not taken sufficient precaution for the safety of the public or the protection of the work to be constructed under these Contract Documents or of adjacent structures or property, and whenever, in the opinion of the Implementation Manager, an emergency has arisen and immediate action is considered necessary, then the Implementation Manager, with or without notice to the Contractor, may provide suitable protection by causing work to be done and material to be furnished and placed. The cost of such work and material shall be borne by the Contractor, and, if the same is not paid on presentation of the bills therefore, such costs may be deducted from any amounts due or to become due the Contractor. The performance of such emergency work shall not relieve the Contractor of responsibility for any damage that may occur.

## 10. INSURANCE & BONDING REQUIREMENTS

The following requirements apply to any and all work under this Agreement and/ or any agreement between the Implementation Manager and any Contractor. Compliance is required by Contractor and/or subcontractor(s) of any tier. Insurance and bonding requirements are based on information received as of the date of execution of this Agreement. The Implementation Manager reserves the right to adjust or waive any or all requirements based on receipt of additional information pertinent to this Agreement.

- A. Contractor shall follow and meet all City requirements described in **Appendix B – Insurance & Bonding Requirements**, attached hereto and made a part hereof.
- B. Construction services are excluded from the Professional Liability Insurance requirement of **Appendix B**.
- C. Evidence of Insurance Required Before Work Begins

Contractor and subcontractor(s) of any tier may commence any services of any kind under this Agreement or any agreement with the Implementation Manager until all insurance and bonding requirements of this Agreement have been complied with and until evidence of compliance satisfactory to the Implementation Manager as to form and content has been filed with the Implementation Manager. Prior to starting work, all Contractor(s) and subcontractor(s) of any tier shall deliver to the Implementation Manager, a certificate of insurance as evidence that policies providing such coverage and limits of insurance are in full force and effect. Certificates shall be in the form provided by the Implementation Manager or if none is provided in a form acceptable to the Implementation Manager. The policy will provide that advance written notice will be given to the Sponsor and Implementation Manager thirty (30) days prior to cancellation for other than nonpayment; termination; or material alteration, of said policies of insurance. Termination for non-payment shall require ten (10) days' notice. Certificates shall identify on their face the project name, any applicable contract number, notice of termination requirements and additional insured. The Acord Certificate of Insurance or a pre-approved substitute is the required form in all cases where reference is made to a Certificate of Insurance or an approved substitute.

- D. Minimum Financial Security Requirements

All bonding and insurance companies providing insurance or bonds required by this Agreement or any agreement between the Implementation Manager and any Contractor must meet certain minimum financial security requirements. These requirements conform to the rating published by

A.M. Best & Co. and a current Best's Key Rating Guide-Property-Casualty. All companies providing bonds or insurance under this Agreement or any agreement between the Implementation Manager and any Contractor must meet the requirements per **Appendix B**.

E. Failure to Meet Minimum Financial Security Requirements.

If the issuing company does not meet these minimal requirements, or for any other reason is unsatisfactory to the Implementation Manager, the Contractor or subcontractor of any tier covered under said policy or bond must promptly obtain a new policy or, bond issued by an insurer / surety acceptable to the Implementation Manager and to submit evidence of that satisfaction to the Implementation Manager. Upon failure of Contractor or subcontractor of any tier to furnish, deliver and maintain such insurance and bonds as provided in this Agreement, the Implementation Manager may at its election declare this Agreement suspended, or terminated. Failure of any Contractor or subcontractor of any tier to obtain and keep in force any required insurance or bonding shall not relieve the Contractor or subcontractor of any tier from any liability under the terms of this Agreement or any agreement with the Implementation Manager, nor shall these requirements be construed to conflict with or supersede any obligation relating to indemnification.

F. Insurance and Bonding Required for Duration of Contract

Any and all bonds and insurance required by this Agreement or any agreement between the Implementation Manager and any Contractor shall be maintained during the entire length of the Agreement, including any extension thereto and until all work has been completed to the satisfaction of the Implementation Manager. The Implementation Manager shall have the right to inquire into the adequacy of the insurance coverages and bonds set forth in this Agreement or any agreement between any Contractor and to negotiate such adjustments as reasonable and necessary.

G. Duty to Investigate and Report All Claims

Contractor and subcontractors must promptly investigate all accidents and claims for damages relating to the subject matter of this Agreement or any agreement between the Implementation Manager and any Contractor, and must file a full and timely written report to the appropriate insurance company (with a copy to the Implementation Manager) All reports must be timely filed with the appropriate insurance company under the terms of the applicable insurance policy.

H. Others as Additional Insured

The Sponsor, Project Manager and the Midtown Improvement District must be covered as additional insured under all insurance required by this Agreement or any agreement between the Implementation Manager and the Contractor, and that insurance must be primary with respect to the additional insured, insuring the Implementation Manager for its own actions and the actions of the Implementation Manager as well as all Contractor or subcontractor(s) of any tier under this Agreement or any agreement between the Implementation Manager and any Contractor and not simply vicariously through the actions of the Contractor or subcontractor(s) of any tier. Confirmation of this must appear on the Accord Certificate of Insurance and on all applicable insurance policies.

I. Mandatory Notices of Cancellation or Material Change

The Sponsor and the Implementation Manager must, without exception, be given not less than thirty (30) days prior written notice of cancellation for other than non-payment of premium or for material changes of any insurance or bond required by the Agreement or any agreement -between the Implementation Manager and any Contractor. Non-payment of premium must require 10 Days prior written notice of cancellation. Confirmation of these mandatory notices of cancellation requirements must appear on the Accord Certificate of Insurance and all insurance policies required by this Agreement.

J. Insurance Policies

Contractor must cause to be placed and kept in force all forms of insurance required by law or needed to adequately protect the Sponsor and the Implementation Manager with respect to the this Agreement or any agreement between the Implementation Manager and Contractor, including, but not limited to the amounts per **Appendix B**.

K. Bonding Requirements

Bonds furnished shall meet the requirements of the law of the State of Georgia including, but not limited to, O.C.G.A. § 13-10-1 and § 36-91-21 et seq. The surety on each Bond shall be a surety company satisfactory to Implementation Manager and listed in the Federal Register and licensed to write surety insurance in the State of Georgia.

1. Performance Bond. General Contractor who enters into an agreement with the Implementation Manager to perform work under this Agreement must furnish a Performance Bond to the Implementation Manager and City in an amount of at least 100% of the total amount payable under said agreement.
2. Payment Bond. General Contractor who enters into an agreement with Implementation Manager to perform work under this Agreement must furnish a Payment Bond to the Implementation Manager and City in an amount of at least 110% of the total amount payable under said agreement and shall be for the use and protection of all subcontractors of any tier and all persons supplying labor, materials, machinery and equipment in the prosecution of the work provided for in said agreement.
3. Bond Forms; Power of Attorney; Financial Security. General Contractor must furnish the Performance and Payment Bond required in a form acceptable to the Implementation Manager. The individual executing the bonds on behalf of the surety must file with the bonds a general power of attorney unlimited as to amount and type of bonds covered by such power of attorney and certified by an official of the surety. Each surety shall meet the minimum financial security requirements set forth in this Agreement.

## 11. LABOR

The Contractor shall employ only workmen who are competent to perform the work assigned to them and, in the case of skilled labor, who are adequately trained and experienced in their respective trades and who do satisfactory work.

If any person employed by the Contractor on the work appears to the Engineer to be incompetent or to act in a disorderly or improper manner, the person shall be discharged immediately on the request of the Engineer, and such person shall not again be employed on the work.

All labor described in these Contract Documents or indicated on the Drawings and the work specified or indicated, shall be executed in a thoroughly professional workmanlike manner and by persons skilled in the applicable trade. All materials, fixtures, and apparatus shall be installed in an undamaged condition.

The Contractor shall, at all times, enforce strict discipline and good order among his employees. No intoxicating liquor will be allowed on the project.

The Contractor and all Subcontractors shall comply with all ordinances, laws, and regulations applicable to the work regarding labor and mechanics.

## 12. IMPLEMENTATION MANAGER'S RIGHT TO WITHHOLD CERTAIN AMOUNTS AND MAKE APPLICATION

The Contractor shall, at the Implementation Manager's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived.

If the Contractor fails to do so, then the Implementation Manager may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Implementation Manager has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this paragraph be construed to impose any obligations upon the Implementation Manager to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Implementation Manager shall be deemed the agent of the Contractor, and any payment so made by the Implementation Manager shall be considered as a payment made under the contract by the Implementation Manager to the Contractor, and the Implementation Manager shall not be liable to the Contractor for any such payments made in good faith.

## 13. FINAL PAYMENT AND RETAINAGE

Upon Final Completion of the Work in accordance with the Contract Documents, the Contractor will be authorized to prepare a final estimate of the work and a Final Payment request. The Engineer will review the final payment request and will, if all items are satisfactory, recommend approval to the Implementation Manager. The Engineer will submit to the Implementation Manager the final estimate and the final payment request, together with a certification stating that the work is complete and in substantial conformance with these Contract Documents. The entire balance found to be due the Contractor, except such sums as may be lawfully withheld by the Implementation Manager, will be paid to the Contractor.

#### 14. SUBSTANTIAL COMPLETION OF THE WORK

Upon receipt of written notice from the Contractor that the work, or acceptable portion thereof, is substantially complete in conformance with these Contract Documents and submission of a list of items to be completed or corrected, the Engineer, in company with the Implementation Manager's authorized representative, will promptly make an inspection for substantial completion of the work, including any tests of operation, performance tests, material tests, and such other tests as specified or as the Engineer deems necessary, desirable, or proper. After completion of the inspection and tests and preparation of a detailed list of items to be completed or corrected, as determined by the inspection, the Engineer, if in his professional judgment and opinion the Contractor's statement appears correct, will inform the Implementation Manager's in writing that he has examined the work, that it is substantially in conformance with these Contract Documents, and that he recommends the work be accepted as substantially complete. The written recommendation of acceptance of the work as substantially complete from the Engineer shall be accompanied by the list of minor items to be completed or corrected. It is understood and agreed that such notice from the Engineer does not in any way relieve the Contractor from any duties, responsibilities, and obligations of these Contract Documents.

Should the Engineer consider that the work is not substantially complete, he will immediately notify the Contractor, in writing, stating the reasons for his determination. The Contractor shall complete the work and send another written notice to the Engineer certifying that the work or designated portion thereof is substantially complete. The Engineer, in company with the Implementation Manager's authorized representative, will re-inspect the work.

The Implementation Manager may withhold an amount equal to 200 percent (200%) of the value of any remaining incomplete work until final payment.

If the Engineer's recommendation is acceptable to the Implementation Manager, the Implementation Manager will notify the Contractor in writing that the work is accepted as substantially complete and will establish the date of substantial completion after which time any liquidated damage charges shall cease. This date so established shall be construed as completion of the contract time. It is understood and agreed that said notice from the Implementation Manager shall not in any way be construed to relieve the Contractor from any duties, responsibilities, or obligations of the Contract Documents or from his responsibility to deliver a complete work in accordance with the intent of these Contract Documents. Prior to or immediately after the substantial completion date, the Contractor shall submit the following:

- a. Any remaining Operation and Maintenance data or manuals.
- b. Project Record Documents.
- c. Contractor's Affidavit of Payment of Debts and Claims.
- d. Contractor's Affidavit of Release of Liens.
- e. Consent of Surety Company to Final Payment.
- f. All required warranties

#### 15. FINAL COMPLETION

Upon receipt of written notice from the Contractor that all items listed for completion or correction during the inspection for substantial completion have been performed and that the work has been completed in conformity with the Contract Documents, the Engineer shall schedule the final inspection. The Engineer will examine the work, in company with the Implementation Manager authorized representative, making

additional tests and investigations as he may deem proper and using all of the care and judgment normally exercised in the examination of the completed work by a properly qualified and experienced professional Engineer and shall satisfy himself that the Contractor's statement appears to be correct.

Should the Engineer determine that the work is not finally complete; he will notify the Contractor in writing stating reasons for his determination. The Contractor shall take immediate steps to remedy the stated deficiencies and/or conditions and, after correction of the deficiencies and/or conditions, send another written notice to the Engineer certifying that the work is complete. The Engineer, in company with the Implementation Manager's authorized representative, will re-inspect the work.

After a satisfactory final inspection, the Engineer shall notify the Implementation Manager in writing that he has examined the work and that, in his opinion, it appears to conform to these Contract Documents and therefore recommends the work be accepted for final completion. It is understood and agreed that such statement by the Engineer does not in any way relieve the Contractor or his Sureties from any duties, responsibilities, and obligations under these Contract Documents.

After the Engineer recommends the work for final completion, the Implementation Manager will, if he concurs in the Engineer's recommendation, promptly notify the Contractor in writing. If the Implementation Manager does not concur in the Engineer's recommendation, the Implementation Manager will promptly notify the Contractor in writing that he does not accept the work as complete and stating the deficiencies and/or conditions that shall be corrected or resolved before final completion will be issued. After the deficiencies and/or conditions are corrected or resolved and the Implementation Manager is satisfied that the work is complete, the Implementation Manager will issue to the Contractor notice of final completion. The guarantee period(s), as specified, shall begin on the date the Contractor is notified by the Implementation Manager of final completion.

It is understood and agreed that said notice of final completion or final payment by the Implementation Manager shall not in any way be construed to relieve the Contractor, or his Sureties from any duties, responsibilities or obligations under or in connection with these Contract Documents.

#### 16. GEORGIA SALES TAX

The Contractor shall furnish the Implementation Manager with certified copies of paid invoices (or other proof) indicating Georgia Sales Tax paid on items for which the Implementation Manager is eligible for tax refunds. Tax refunded will be to the Implementation Manager, with none credited to the Contractor.

#### 17. MAINTENANCE OF CONTRACT COST RECORDS

The Contractor shall maintain, and shall cause by contract it's sub-contractors to maintain all books, documents, papers, accounting records and other evidence pertaining to costs incurred on the project and used in support of its bid, shall make such material available at all reasonable times during the period of the Agreement between the Implementation Manager and the Department and for three years from the date of final payment under the Agreement between the Implementation Manager and the Department, for inspection by the Department, FHWA or the Sponsor and any reviewing agencies, and copies thereof shall be furnished upon request.

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**18. WORK STOPPAGE**

In the event of the discovery of significant archaeological remains, construction shall be stopped and the SPONSOR shall notify the Georgia Department of Natural Resources of the discovery. In this context, to be "significant," such remains would have to be able to provide important and non-redundant information that could not be obtained from other sources. The Sponsor shall notify the Georgia Department of Natural Resources of the discovery of intact cultural features such as, but not limited to, foundations and wells. The construction shall remain stopped until the Georgia Department of Natural Resources has completed their evaluation of the remains.

**19. AMERICANS WITH DISABILITIES ACT**

Contractor will comply with all applicable requirements of the Americans 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.

**20. DAVIS-BACON ACT OF 1931**

Contractor(s) and subcontractor(s) will 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 per the wage determination rates in this Project Manual. Contractor(s) and subcontractor(s) will also comply with 29 CFR part 5 "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction." Contractor(s) and subcontractor(s) will use Optional Form WH-347 that includes the required statement for compliance (OMB No.1215-0149). This form can be found at the following web site: <http://www.dol.gov/esa/forms/whd/wh347.pdf>.

END OF SECTION

APPENDIX B  
**INSURANCE & BONDING REQUIREMENTS**

A. Preamble

The following requirements apply to all work under the agreement. Compliance is required by all Contractors/Consultants. **To the extent permitted by applicable law, the City of Atlanta (“City”) reserves the right to adjust or waive any insurance or bonding requirements contained in this Appendix B and applicable to the agreement.**

1. Evidence of Insurance Required Before Work Begins

**No work under the agreement may be commenced until all insurance and bonding requirements contained in this Appendix B, or required by applicable law, have been complied with and evidence of such compliance satisfactory to City as to form and content has been filed with City.** Contractor/Consultant must provide City with a Certificate of Insurance that clearly and unconditionally indicates that Contractor/Consultant has complied with all insurance and bonding requirements set forth in this Appendix B and applicable to the agreement. If the Contractor/Consultant is a joint venture, the insurance certificate should name the joint venture, rather than the joint venture partners individually, as the primary insured. In accordance with the solicitation documents applicable to the agreement at the time Contractor/Consultant submits to City its executed agreement, Contractor/Consultant must satisfy all insurance and bonding requirements required by this Appendix B and applicable by law, and provide the required written documentation to City evidencing such compliance. In the event that Contractor/Consultant does not comply with such submittal requirements within the time period established by the solicitation documents applicable to the agreement, City may, in addition to any other rights City may have under the solicitation documents applicable to the agreement or under applicable law, make a claim against any bid security provided by Contractor/Consultant.

2. Higher Limits to Apply

If the contractor maintains broader coverage and/or higher limits than the minimums requested in this document, the City of Atlanta requires and shall be entitled to the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City of Atlanta.

3. Minimum Financial Security Requirements

All companies providing insurance required by this Appendix B must meet certain minimum financial security requirements. These requirements must conform to the ratings published by A.M. Best & Co. in the current Best's Key



Rating Guide - Property-Casualty. The ratings for each company must be indicated on the documentation provided by Contractor/Consultant to City certifying that all insurance and bonding requirements set forth in this Appendix B and applicable to the agreement have been unconditionally satisfied.

For all agreements, regardless of size, companies providing insurance or bonds under the agreement must meet the following requirements:

- i) Best's rating not less than A-,
- ii) Best's Financial Size Category not less than Class VII, and
- iii) Companies must be authorized to conduct and transact insurance contracts by the Insurance Commissioner, State of Georgia.
- iv) All bid, performance and payment bonds must be underwritten by a U.S. Treasury Circular 570 listed company.

If the issuing company does not meet these minimum requirements, or for any other reason is or becomes unsatisfactory to City, City will notify Contractor/Consultant in writing. Contractor/Consultant must promptly obtain a new policy or bond issued by an insurer acceptable to City and submits to City evidence of its compliance with these conditions.

Contractor/Consultant's failure to comply with all insurance and bonding requirements set forth in this Appendix B and applicable to the agreement will not relieve Contractor/Consultant from any liability under the agreement. Contractor/Consultant's obligations to comply with all insurance and bonding requirements set forth in Appendix B and applicable to the agreement will not be construed to conflict with or limit Contractor/Consultant's/Consultant's indemnification obligations under the agreement.

3. Insurance Required for Duration of Contract

All insurance and bonds required by this Appendix B must be maintained during the entire term of the agreement, including any renewal or extension terms, and until all work has been completed to the satisfaction of City.

4. Notices of Cancellation & Renewal

Contractor/Consultant must, notify the City of Atlanta by email or in writing at the address listed below by mail within 2 days of any notices received from any insurance carriers providing insurance coverage under this Agreement and Appendix B that concern the proposed cancellation, or termination of coverage.

**Email: [RiskCOI@AtlantaGa.Gov](mailto:RiskCOI@AtlantaGa.Gov)  
Enterprise Risk Management  
68 Mitchell St. Suite 9100  
Atlanta, GA 30303**

Confirmation of any mailed notices must be evidenced by return receipts of registered or certified mail.

Contractor/Consultant shall provide the City with evidence of required insurance prior to the commencement of this agreement, and, thereafter, with a certificate evidencing renewals or changes to required policies of insurance at least fifteen (15) days prior to the expiration of previously provided certificates.

5. Electronic Submission of Proof of Insurance Required Upon Renewal

Proof of current insurance coverage is required upon each insurance renewal term. Sixty days prior to your Certificate of Insurance expiration, you will receive an automated email (to the contact email you provided to the City of Atlanta Department of Procurement) from [notifications@origamirisk.com](mailto:notifications@origamirisk.com) which contains a personalized link that will be used to upload your proof of insurance documents. Per your contract, it is required that you upload your proof of insurance prior to the expiration date of your insurance coverage. Please contact your contract specialist with the Department of Procurement should you have any questions or need any further assistance regarding this requirement.

6. Agent Acting as Authorized Representative

Each and every agent acting as Authorized Representative on behalf of a company affording coverage under this contract shall warrant when signing the Accord Certificate of Insurance that specific authorization has been granted by the Companies for the Agent to bind coverage as required and to execute the Accord Certificates of Insurance as evidence of such coverage. City of Atlanta coverage requirements may be broader than the original policies; these requirements have been conveyed to the Companies for these terms and conditions.

In addition, each and every agent shall warrant when signing the Accord Certificate of Insurance that the Agent is licensed to do business in the State of Georgia and that the Company or Companies are currently in good standing in the State of Georgia.

7. Certificate Holder

The **City of Atlanta Office of Enterprise Risk Management at 68 Mitchell Street, Suite 9100, Atlanta, Georgia 30303** must be named as certificate holder. All notices must be emailed to: [RiskCOI@AtlantaGa.Gov](mailto:RiskCOI@AtlantaGa.Gov).

8. Project Number & Name

The project number and name must be referenced in the description section of the insurance certificate.

9. Additional Insured Endorsements Form CG 20 26 07 04 or equivalent

The City must be covered as Additional Insured under all insurance (except worker's compensation and professional liability) required by this

Appendix B and such insurance must be primary with respect to the Additional Insured. **Contractor/Consultant must submit to City an Additional Insured Endorsement evidencing City's rights as an Additional Insured for each policy of insurance under which it is required to be an additional insured pursuant to this Appendix B. Endorsement must not exclude the Additional Insured from Products - Completed Operations coverage. The City shall not have liability for any premiums charged for such coverage.**

10. Mandatory Sub-Contractor/Consultant Compliance

Contractor/Consultant must require and ensure that all subContractor/Consultants/subconsultants at all tiers to be sufficiently insured/bonded based on the scope of work performed under this agreement.

11. Self Insured Retentions, Deductibles or Similar Obligations

Any self-insured retention, deductible or similar obligation will be the sole responsibility of the contractor.

B. Workers' Compensation and Employer's Liability Insurance

Contractor/Consultant must procure and maintain Workers' Compensation and Employer's Liability Insurance in the following limits to cover each employee who is or may be engaged in work under the agreement.

Workers' Compensation. . . . . **Statutory**

Employer's Liability:

Bodily Injury by Accident/Disease    **\$1,000,000 each accident**  
Bodily Injury by Accident/Disease    **\$1,000,000 each employee**  
Bodily Injury by Accident/Disease    **\$1,000,000 policy limit**

C. Commercial General Liability Insurance

Contractor/Consultant must procure and maintain Commercial General Liability Insurance on form (CG 00 00 01 or equivalent) in an amount not less than **\$1,000,000 per occurrence subject to a \$2,000,000 aggregate.** The following indicated extensions of coverage must be provided:

- Contractual Liability
- Broad Form Property Damage
- Premises Operations
- Personal Injury
- Advertising Injury
- Fire Legal Liability
- Medical Expense
- Independent Contractor/Consultants/SubContractor/Consultants
- Products – Completed Operations

- Pesticide or Herbicide Applicator Coverage
- Explosion, Collapse and Underground (XCU) Liability
- Additional Insured Endorsement\* (primary & non-contributing in favor of the City of Atlanta)
- Waiver of Subrogation in favor of the City of Atlanta

D. Commercial Automobile Liability Insurance

Contractor/Consultant must procure and maintain Automobile Liability Insurance in an amount not less than **\$1,000,000** Bodily Injury and Property Damage combined single limit. The following indicated extensions of coverage must be provided:

- Owned, Non-owned & Hired Vehicles
- Waiver of Subrogation in favor of the City of Atlanta

If Contractor/Consultant does not own any automobiles in the corporate name, non-owned vehicle coverage will apply and must be endorsed on either Contractor/Consultant's personal automobile policy or the Commercial General Liability coverage required under this Appendix B.

E. Property Coverage/Inland Marine

Contractor/Consultant shall procure and maintain all risk property coverage in an amount equal to replacement value for all equipment, furniture, fixtures, machinery and/or personal property.

F. Professional Liability Insurance

Contractor/Consultant shall procure and maintain during the life of this contract Professional Liability Insurance in an amount of **\$1,000,000** per occurrence and annual aggregate. The policy will fully address the Contractor/Consultant's professional services associated with the scope of work contained in this document. The policy will include at least a three-year Extended Reporting Provision.

G. Performance Bond and Payment Bond

Contractor/Consultant shall furnish a Payment Bond and a Performance Bond to the City in an amount equal to **100 percent of the total contract value** and for the duration of the entire term.

The person executing the Bonds on behalf of the surety shall file with the Bonds a general power of attorney unlimited as to amount and type of bonds covered by such power of attorney and certified by an official of said surety. **Be a U.S. Treasury Circular 570 listed company.**

H. Railroad Liability Insurance (If project work takes place within 50 feet of Railroad)

Contractor/Consultant must procure and maintain Railroad Liability Insurance in an amount not less than **\$5,000,000 per occurrence subject to a \$10,000,000 aggregate** with an SIR of no larger than **\$100,000**.

I. Primary and Non-Contributory

Contractor/Consultant coverage shall be Primary and Non-Contributory where permissible.

J. Higher Limits to Apply

If the contractor maintains broader coverage and/or higher limits than the minimums requested in this document, the City of Atlanta requires and shall be entitled to the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City of Atlanta.

**END OF DOCUMENT**

## SPECIAL CONDITIONS

### 1.0 GENERAL

#### 1.0 DESCRIPTION OF WORK

- A. The project generally includes streetscape improvements.
- B. The limits of work are as defined on the Drawings and in the Specifications and other Contract Documents.
- C. It is the intent of these Specifications that the Contractor shall perform all incidental items of Work and furnish all items of incidental material and equipment required to construct the completed Project even though such items are not covered in detail in the Contract Documents.
- D. Each section of type of work is described separately in the General Requirements and Technical Specifications. However, should any item of material, equipment, work or combinations of such be required in one section and not be described in that section and a similar item is described in another section, that description shall apply regardless of the section under which it is described.
- E. The scope of work includes constructing a new road, storm drainage, streetlighting, bike lanes, sidewalks, landscaping, traffic signals in coordination with existing and proposed driveways, and proposed new utilities services to adjacent property owners. Work is to be planned for and scheduled with the Implementation Manager as outlined in Series 19 Staging Plans and Traffic Control Specification 150.
- F. The Contractor shall be responsible for maintaining the access road and for providing an alternate as per the notes within the Staging plans.
- G. The Contractor shall be responsible for procuring and satisfying the requirements of Special Provisions 154 – Construction Vibration Monitoring.
- H. The contractor shall utilize minimally invasive excavation techniques when installing Signal Pole foundations and Street Light Foundations. Minimally intrusive excavation method - A method of excavation that minimizes the potential for damage to the structure being uncovered. Factors such as utility material and condition may influence specific techniques. Typical techniques for utility exposures include air-entrainment/vacuum-extraction systems, water-jet/vacuum-extraction systems, and careful hand tool usage.
- I. The Contractor shall afford Georgia Power the same inspection rights to the streetlighting foundation and conduit system as described in the contract City of Atlanta Streetlighting Check Lists.
- J. Georgia Power shall support shop drawing review of the contractor's foundation submittal to verify anchor bolt and conduit arrangements.
- K. The Contractor shall protect Street light anchor bolts for a period of 8 months from installation

and work with Implementation Manager and Georgia Power in support of pole, fixture and wiring by Georgia Power.

1.02 SITE OF THE WORK

- A. The site of the proposed Work is located in the City of Atlanta, GA within the GDOT right-of-way.
- B. Work Schedule - Furnish to the Implementation Manager and the Engineer, for review, a construction progress schedule as specified in Section 01326 of these Specifications.

1.03 MATERIALS

- A. All materials, unless otherwise specified, will be furnished new and installed by the Contractor. The following materials will be either salvaged or supplied by the Implementation Manager and installed by the Contractor:
  - 1. None.
- B. Except as otherwise specified as indicated on the Drawings all materials to be removed shall be the property of the Contractor and shall be removed from the site and disposed by the Contractor.

1.04 OBSTRUCTIONS

- A. All known obstructions are shown on the Drawings. However, the Contractor shall verify these on the ground and provide for all obstructions encountered and shall use utmost caution in all operations to avoid damage to existing pipes, sewers, conduits, cables, pole lines, structures, etc., whether or not shown on the Drawings. Any damage to any existing structures or utilities shall be repaired or made good by the Contractor at no expense to the Implementation Manager.
- B. The Implementation Manager will obtain the necessary easements for construction across public and private property, streets, railroads, telephone lines, power lines, etc. The Contractor shall abide by all rules, regulations, and requirements of the Owner of such property in regard to the construction under this Contract, including the giving of notices, provisions for inspections, and employment of such methods of construction as may be required. Wherever additional costs are incurred due to such requirements, all such costs shall be included in the prices bid. No additional compensation will be allowed for such costs after award of the Contract.

1.05 ENVIRONMENTAL PROTECTION

- A. During construction the Contractor shall provide rows of hay bales, silt fences, and/or other preventive measures as may be required by governing laws or ordinances to prevent siltation and soil erosion. All such work shall be done without additional cost to the Implementation Manager.
  - 1. Contractor is responsible for the installation and maintenance of all temporary erosion and sediment control measures throughout the extent of the contract period. All such

measures will comply with the Manual for Erosion and Sediment Control in Georgia, 2016 Edition, published by the Georgia Soil and Water Conservation Commission.

2. Silt fence shall meet the requirements of Section 171- Silt Fence, of the Department of Transportation, State of Georgia Standard Specifications Construction of Transportation Systems 2013 Edition.
  3. Erosion control measures will be inspected at least weekly and after each rain and repaired by the Contractor. Additional erosion and sediment control measures will be installed by the Contractor if deemed necessary by on-site inspection.
- B. The Contractor will restore all disturbed areas to their present or better condition upon completion of the construction.
- C. The Contractor shall obtain such permits as required in accordance with the Georgia Erosion and Sedimentation Control Act, and other applicable laws and ordinances.

#### 1.06 NATIONAL SAFETY CODE PROVISIONS

- A. The Contractor shall be responsible for keeping the Engineer advised of any conflicts due to any provisions or changes in the Safety Code that affect the Work as shown on the Drawings, and as described in the Specifications. It shall be the Contractor's responsibility to observe all provisions of the National Safety Code, keeping current with changing requirements, in all phases of the Work at all times.

#### 1.07 CONTRACTOR'S RESPONSIBILITY FOR WORK

- A. All work under this Contract shall be under the care of the Contractor and he/she shall take every necessary precaution against injury or damage to the same, until final written acceptance is received. The Contractor shall rebuild, repair, restore and make good, at his/her own expense, all damage or injury occasioned by the action of the elements, or any other cause whatsoever, before its final completion or acceptance.

#### 1.08 OTHER CONTRACTS

- A. The Implementation Manager may award other contracts for additional work and the Contractor shall fully cooperate with other contractors and carefully fit his/her own work to that provided under other contracts as may be directed by the Implementation Manager. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor.

#### 1.09 USE OF CHEMICALS

- A. All chemicals used during the Project construction or furnished for Project operation, whether, pesticide, herbicide, disinfectant polymer, reactant or of other classification, must show approval of either the EPA or USDA. Use of all such chemicals and disposal of residues shall be in conformance with instructions.



1.10 SUBSTITUTIONS

- A. Contractor may offer substitution to the above-named manufacturers by written request only.
- B. The Implementation Manager reserves the right to accept or reject any and all substitutions that may be offered.
- C. The item proposed for substitution shall be equal to or superior to the specified item or items, in construction, efficiency, and utility in the opinion of the Engineer.

1.12 DRAWINGS AND DETAILS

- A. By reference the project documents includes Department of Transportation, State of Georgia Standard Specifications Construction of Transportation Systems, 2013 Edition.
- B. Following in Section 00850 is a list of Drawings, which accompany and form part of these Contract Documents. These Drawings have been prepared by Jacobs.
- C. Additional details will be supplied if necessary during the progress of the work for further clarification of the Plans. Such additional drawings shall be as binding upon the Contractor as the Original Drawings.

1.13 NOTICE OF COMMENCEMENT

- A. The contractor shall post on the public works construction site and file with the clerk of the Superior Court in the county in which the site is located a notice of commencement no later than 15 days after the Contractor physically commences work on the project and supply a copy of the notice to any subcontractor, materialman, or person who makes written request of the Contractor. Failure to supply a copy of the notice of commencement within ten (10) calendar days of receipt of the written request from the subcontractor, materialman, or person shall render the provisions of paragraph (1) of subsection (a) of Georgia Code Section 36-91-73 inapplicable to the subcontractor, materialman, or person making the request. The notice of commencement shall include:
  - 1. The name, address, and telephone number of the Contractor.
  - 2. The name and location of the public work being constructed or a general description of the improvement.
  - 3. The name and address of the governmental entity that is contracting for the public works construction.
  - 4. The name and address of the surety for the performance and payment bonds, if any.
  - 5. The name and address of the holder of the security deposit provided, if any.
- B. Failure to file a notice of commencement shall render the notice to contractor requirements of paragraph (1) of subsection (a) of Georgia Code Section 36-91-73 inapplicable.

END OF SECTION

**NOTICE OF AWARD**

To: \_\_\_\_\_

Project: \_\_\_\_\_

The IMPLEMENTATION MANAGER has considered the BID submitted by you for the above described WORK in response to its Notice to Bid dated \_\_\_\_\_, 20\_\_\_\_, and Information for Bidders.

You are hereby notified that your BID has been accepted in the amount of \$ \_\_\_\_\_

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND, and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from, the date of this notice, said IMPLEMENTATION MANAGER will be entitled to consider all your rights arising out of the IMPLEMENTATION MANAGER'S acceptance of your BID, as abandoned and as a forfeiture of your BID BOND, the IMPLEMENTATION MANAGER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the IMPLEMENTATION MANAGER,

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

By (signature) \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE OF AWARD is hereby acknowledged by \_\_\_\_\_  
this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

By (signature) \_\_\_\_\_

Title \_\_\_\_\_

**NOTICE TO PROCEED**

To: \_\_\_\_\_

Project: \_\_\_\_\_

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_, 20\_\_\_\_, on or before \_\_\_\_\_, 20\_\_\_\_. You are to complete the WORK within \_\_\_\_\_ consecutive calendar days thereafter. The date of completion of all WORK is therefore \_\_\_\_\_.

Dated this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By (signature) \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED is hereby acknowledged and agreed to by \_\_\_\_\_ this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

By (signature) \_\_\_\_\_

Title \_\_\_\_\_

PROJECT NAME: **15th Street Extension**  
PROJECT NO.: **0015019**

DRAWING NO.	DESCRIPTION
01-0001	COVER
02-0001	INDEX
03-0001	REVISION SUMMARY
04-0001 TO 4-0004	GENERAL NOTES
05-0001 TO 5-0004	TYPICAL SECTIONS
06-0001 TO 06-0003	SUMMARY OF QUANTITIES
07-0001	QUANTITIES BY AMENDMENT
08-0001	QUANTITIES (CONSTRUCTION)
10-0001 TO 10-0003	TRAFFIC DIAGRAMS
11-0001	CONSTRUCTION LAYOUT
13-0001 TO 13-0002A	MAINLINE PLANS
15-0001	MAINLINE ROADWAY PROFILE
17-0001	DRIVEWAY PROFILES
19-0001 TO 19-0009	STAGING PLANS
21-0001 TO 21-0003A	DRAINAGE AREA MAPS
22-0001 TO 22-0002	DRAINAGE PROFILES
23-0001 TO 23-0005	CROSS SECTIONS
24-0000 TO 24-0002A	UTILITY PLANS
25-0001 TO 25-0007	LIGHTING PLANS
26-0001 TO 26-0002A	SIGNING AND MARKING PLANS
27-0001 TO 27-0011	TRAFFIC SIGNAL PLANS
28-0001 TO 28-0004	ITS PLANS
29-0001 TO 29-0003	LANDSCAPING PLANS AND DETAILS
31-0001	RETAINING WALL ENVELOPES
32-0001 – 32-0003	RETAINING WALL PLANS
38-0001	TYPE "C" CATCH BASIN
38-0002	MODIFIED TYPE "C" CATCH BASIN
38-0003	EXTENDED BOX 1033F CATCH BASIN
38-0004	DECORATIVE FENCE DETAIL
38-0005	GRANITE CURB AT DRIVEWAY
38-0006 TO 38-0007	DRIVEWAY DETAILS
38-0008	MIDTOWN ATLANTA GUIDELINES
40-0001	A-1 DRIVEWAYS WITH TAPERED ENTRANCES-CONCRETE VALLEY GUTTERS (7-11)
40-0002	A-2 CONCRETE VALLEY GUTTER AT STREET INTERSECTION; 6" OR 8" CONCRETE AT DRIVE PLACING PAVEMENT ADJACENT TO GUTTER ADDITIONAL PAVING AT STREET INTERSECTION 4' CORRUGATED CONCRETE MEDIAN (7-11)
40-0003	A-3 CONCRETE SIDEWALK DETAILS; CURB CUT (WHEELCHAIR) RAMPS (9-16)
40-0004	A-4 DETECTABLE WARNING SURFACE TRUNCATED DOME SIZE, SPACING AND ALIGNMENT REQUIREMENTS (6-09)

40-0005	T-1 SIGN PLATES (1-00)
40-0006	T-2 DETAILS FOR TYPICAL FRAMING (3-00)
40-0007	T-3A TYPE 7, 8 AND 9 SQUARE TUBE POST INSTALLATION DETAIL (7-02)
40-0008	T-3B DETAILS OF SQUARE TUBE POST (BREAKAWAY SIGN SUPPORT) (7-02)
40-0009	T-4 DETAILS OF CARDINAL DIRECTION SIGNS (1-00)
40-0010	T-5A DETAILS OF REGULATORY SIGNS SHEET 1 OF 2 (1-03)
40-0011	T-5C DETAILS OF WARNING SIGNS (1-00)
40-0012	T-11A DETAILS OF PAVEMENT MARKING PLACEMENT NON-LIMITED ACCESS ROADWAY (9-16)
40-0013	T-12A DETAILS OF PAVEMENT MARKING ARROW LOCATION (1-00)
40-0014	T-12B DETAILS OF PAVEMENT MARKINGS - ARROWS (11-20)
40-0015	T-14 DETAIL OF PAVEMENT MARKING HATCHING (11-08)
40-0016	T-15A DETAILS OF RAISED PAVEMENT MARKER LOCATION NON-LIMITED ACCESS ROADWAY (9-16)
40-0017	T-15C DETAILS OF RAISED PAVEMENT MARKERS (9-11)
40-0018	T-16 DETAILS OF BICYCLE LANE PAVEMENT MARKINGS (3-16)
40-0019	T-16A DETAILS OF SHARED BICYCLE LANE (3-16)
40-0020	T-21 TRAFFIC CONTROL PEDESTRIAN ACCESSIBILITY AROUND WORKZONE-SIDEWALK DETOUR (10-08)
40-0021	TS-01A INDUCTIVE-LOOP DETECTOR INSTALLATION (11-20)
40-0022	TS-01B INDUCTIVE-LOOP DETECTOR INSTALLATION (11-20)
40-0023	TS-2 PULLBOX ASSEMBLY AND INSTALLATION (4-10)
40-0024	TS-02 PREFABRICATED CABINET BASE (11-20)
40-0025	TS-03 PEDESTRIAN FACILITIES INSTALLATION (11-20)
40-0026	TS-04A TRAFFIC SIGNAL SUPPORT STRUCTURES (11-20)
40-0027	TS-04B TRAFFIC SIGNAL SUPPORT STRUCTURES (11-20)
40-0028	TS-05 STRAIN POLE AND MAST ARM FOUNDATIONS (11-20)
40-0029	TS-06 GROUNDING FOR TRAFFIC SIGNAL SUPPORT STRUCTURES (11-20)
40-0030	TS-07 UTILITY CLEARANCE (11-20)
40-0031	TS-08 GUYING (11-20)
40-0032	TS-09 FIBER OPTICS INSTALLATION (11-20)
41-0001	1011-A BRICK MANHOLES (10-81)
41-0002	1011-AP PRECAST REINFORCED CONCRETE MANHOLE (6-75)
41-0003	1013 CATCH BASINS WITH CASTINGS (8-99)
41-0004	1019-A DROP INLETS (8-99)
41-0005	1019-AP PRECAST DROP INLETS (8-99)
41-0006	1401 PAVEMENT PATCHING DETAILS (STORM DRAIN OR UTILITY INSTALLATIONS BY OPEN CUT ACROSS EXISTING PAVEMENT) (8-99)
41-0007	3626 ONE PIPE ALUMINUM HANDRAILING FOR BRIDGES (10-85)
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41-0011	9031R PLACING ROOF DRAIN PIPE UNDER SIDEWALK - RAMP TYPE BARRICADE - PIPE HANDRAIL FOR RETAINING WALL PIPE HANDRAIL FOR CONCRETE STEPS (10-88)
41-0012	9100 TRAFFIC CONTROL GENERAL NOTES, STANDARD LEGEND AND MISCELLANEOUS DETAILS (3-06)
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44-0000 TO 44-0006	UTILITY RELOCATION PLANS
50-0001	EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN COVER
51-0001 TO 51-0003	ESPCP GENERAL NOTES
52-0001	EC-L1 EROSION CONTROL LEGEND AND UNIFORM CODE SHEETS- SHEET 1 OF 7 (03/17)
52-0002	EC-L2 EROSION CONTROL LEGEND AND UNIFORM CODE SHEETS- SHEET 2 OF 7 (11/18)
52-0003	EC-L3 EROSION CONTROL LEGEND AND UNIFORM CODE SHEETS- SHEET 3 OF 7 (03/17)
52-0004	EC-L4 EROSION CONTROL LEGEND AND UNIFORM CODE SHEETS- SHEET 4 OF 7 (03/17)
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52-0006	EC-L6 EROSION CONTROL LEGEND AND UNIFORM CODE SHEETS- SHEET 6 OF 7 (11/18)
52-0007	EC-L7 EROSION CONTROL LEGEND AND UNIFORM CODE SHEETS- SHEET 7 OF 7 (03/17)
53-0001 TO 53-0003	EROSION CONTROL DRAINAGE AREA MAP
54-0001 TO 54-0010A	BMP LOCATION DETAILS
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60-0001	RIGHT OF WAY COVER (NOT INCLUDED)
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## SUMMARY OF WORK

### PART 1 GENERAL

#### 1.01 SCOPE:

- A. The intent and meaning of these Contract Documents is that the Contractor, under the terms of the Contract, shall take all actions necessary and require to provide all labor, plants, materials, supplies, equipment, transportation, permits, facilities, and items which are indicated or implied by each drawing and each section of the specifications, all of which are collectively necessary and required for the construction of the described Project. The project consists of the construction of a new road in Midtown Atlanta.
- B. Definitions: Specific definitions related to terminology of this section include, but are not limited to the following:
  - 1. Work: Refers to the General Conditions of Implementation Manager / Contractor Agreement.
  - 2. Project: Refers to the General Conditions: the terms "Work" and "Project" have substantially the same meaning in these Contract Documents; because, substantially, the Work of the Contract is recognized to be the complete project.
  - 3. Project Description: The name of the project is as listed on the title page of the drawings and project manual.
- C. Summary: The Project includes the complete construction of a new road in Midtown Atlanta, Georgia. The improvements include the placement of Erosion Control measures, Rock excavation, Utility Coordination, Waterline relocations, Storm Sewer, Streetlight, Traffic Signals, CIP and Modular retaining walls, complete Roadway sections, Landscaping, Hardscaping and traffic control; repair and reconstruction of manholes and drainage structures; demolition, replacement, and repair of curbs; demolition and replacement of concrete valley gutters; modification of travel lane striping; demolition and replacement of roadway signage and steel posts; demolition and reconstruction of pedestrian sidewalks.

Contractor shall expect the 15<sup>th</sup> St. Extension corridor to have active projects both Private and Public in nature in which to coordinate with. Notable Private projects that will require coordination around include the blocks of West Peachtree St to Spring St.. Terms for this coordination are found in drawing Series 19 – Staging. The implementation manager will endeavor to inform the contractor of other corridor activities as they are able to.

- D. The Work of this contract includes Drawings and Specifications referred to in the Contract Documents as prepared by Jacobs

#### 1.02 SUMMARY BY REFERENCE:

- A. The Work can be summarized by reference to the requirements of the various Contract Documents, which in turn make references to the requirements of other applicable provisions which control or influence the Work and these references can be summarized but are not necessarily limited to the following:
  - 1. Unexecuted Implementation Manager/Contractor Agreement (included).

2. General and Supplementary Conditions (included).
3. Drawings as listed in the "Index of Drawings" located in the Implementation Manager/Contractor Agreement.
4. Addenda and modifications to the Contract Documents (distributed by transmittal subsequent to the binding thereof).
5. Governing regulations which have a bearing on the performance of Work. Copies can be obtained from or reviewed at the Local, State or Federal Agencies responsible for the regulation in each case.
6. Submittals: Copies shall be retained by the Contractor at the Site.
7. Miscellaneous elements: Information having a bearing on the performance of the Work, such as weather forecasts and reports of general trade union negotiations; copies must be obtained by the Contractor through normal channels of information.

PART 2 - EXCLUDED

PART 3 - EXCLUDED

END OF SECTION



**APPLICATION FOR PAYMENT**

PART 1 - GENERAL

1.01 SCOPE:

- A. This Section covers procedures for the Contractor to follow to apply for progress payment and final payment under the Contract.
- B. Related Work:
  - 1. Documents affecting work of this Section include, but are not limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. The Contract Sum and the Schedule of Values are described in the Implementation Manager/Contractor Agreement.
  - 3. The Schedule of Values shall mirror the Detailed Cost Estimate line items as shown on the drawings including number of units and price per unit.
  - 3. The Implementation Manager's approval of applications for progress payment and final payment may be contingent upon the Implementation Manager's and Engineer's approval of the Project Record Documents as described in Section 01720 of these Specifications.

1.02 SUBMITTAL

- A. Formal submittal: Unless otherwise directed by the Implementation Manager, the Contractor shall perform the following.
  - 1. Make formal submittal of request for payment by filling in the agreed data, by typewriter or neat hand lettering in ink, on AIA Document G702, "Application and Certificate for Payment," plus continuation sheet or sheets.
  - 2. Sign and notarize the Application and Certificate for Payment.
  - 3. Submit the original of the Application and Certificate for Payment, plus two (2) copies of the Application for Certificate for Payment to the Implementation Manager for review.
  - 4. The Implementation Manager shall, upon approval, sign the Application and Certificate for Payment, and will distribute:
    - a. One copy to Contractor.
    - b. One copy to Implementation Manager.
    - c. Other copies as required by the Implementation Manager.
    - d. The Implementation Manager will disburse payments to the Contractor.

PART 2 - EXCLUDED

PART 3 - EXCLUDED

**END OF SECTION**

## PROJECT COORDINATION

### PART 1 - GENERAL

#### 1.01 SCOPE:

- A. This section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
  - 1. Drawings and Project Manuals to be supplied by Implementation Manager
  - 2. Documentation of existing conditions.
  - 3. Tasks and Contractor Coordination.
  - 4. Administrative and supervisory personnel.
  - 5. General installation provisions.
  - 6. Cleaning and protection.

#### 1.02 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplemental Conditions and other Division 1 Specification sections, apply to this section.

#### 1.03 COORDINATION:

- A. The Implementation Manager shall supply to the Contractor five (5) sets of the drawings and Project Manual free of charge. Should the Contractor wish additional sets, the Contractor must purchase them from the printer.
- B. Coordinate construction activities included under various Sections of these Specifications in order to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different sections of the Specifications with all other Contractors involved with the Project who are dependent upon those operations to assure proper installation, connection and operation.
- C. Communicate effectively with all other Contractors in order to ensure smooth completion of the work so as to avoid damaging previously installed work done by another Contractor. Contractor shall bear all costs associated with correcting any damage or other such rejected work, including compensation for the Implementation Manager, Project Manager and Engineer, due to failure to properly coordinate or install work under this Contract.
- D. Protect completed or partially installed work so as not to impede the work of the other Contractors or Subcontractors.
- E. Where installation of one part of the work is dependent on installation of other components or other Contractors, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
- F. Communicate effectively with all other Subcontractors in order to ensure that work coincides and does not interfere with the scheduling needs of the other Subcontractors. Contractor shall bear all cost of delay and damage claims by other Prime or Subcontractors, including compensation for the Implementation Manager, caused by a failure to perform the work under this Contract.

- G. Confirm with General Contractor when specific work to be done by another Prime or Subcontractor has been satisfactorily completed before work under this Contract is started.
- H. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
- I. Make adequate provisions to accommodate items scheduled for later installation.
- J. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
- K. Prepare similar memoranda for the Implementation Manager, Project Manager, Engineer, and separate Contractors where coordination of their Work is required.
- L. Inform General Contractor's Site Representative, Implementation Manager, Project Manager, and Engineer when other Contractor's work is in non-compliance or incomplete and prohibits efficient and orderly completion of work under this Contract.
- M. Administrative procedures:
  - 1. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
    - a. Preparation of schedules.
    - b. Installation and removal of temporary facilities.
    - c. Delivery and processing of submittals.
    - d. Progress meetings.
    - e. Project Close-out activities.
- N. Documentation of existing conditions.
  - a. Before the Contractor mobilizes the Contractor shall take digital photographs (still and moving) of all existing conditions and label them by station number and physical address.
  - b. It is required that detailed photographs be taken of all areas where new material will about existing material.
  - c. Detailed pictures of every building, structure, or parking lot that is within 10-feet of the work zone be taken. Identify the subject in the photographs by station number and address.
  - d. Detailed pictures are required of any item that may be damaged during construction.
  - e. Supply a copy of the labeled digital photographs to the Implementation Manager within five (5) calendar days of mobilizing.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION PROVISIONS:

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for pavement expansion and building movement.
- D. Visual Effects: Provide uniform plant spacing and joint widths in exposed work. Arrange plants and joints in exposed work.
- E. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose. Enclosures around holes shall be well marked, surrounded with a 4' barrier, or safely capped until permanent backfill.
- F. Mounting Heights: Where mounting heights are not indicated, refer to the Engineer for final decision.
- G. Installation: When possible, perform Work and install materials to prevent conflict with other Subcontractors. When materials are damaged by other Subcontractors after installation, notify the General Contractor, Implementation Manager, and Engineer immediately. The Subcontractor takes full responsibility for all repairs and replacement of materials, at no additional cost to the Implementation Manager.

END OF SECTION

## FIELD ENGINEERING

### PART 1 - GENERAL

#### 1.01 REQUIREMENTS INCLUDED

- A. Surveying services.
- B. The Contractor shall identify control points, property line corner stakes, and construction stakes.

#### 1.02 RELATED REQUIREMENTS

- A. Information Available to Bidder: Construction Plans

#### 1.03 SUBMITTALS

- A. On request, submit documentation verifying accuracy of survey work, or a duplicate copy of surveyor's field notes.
- B. Submit certificate signed by Surveyor, certifying that locations of improvements are in conformance with Contract Documents.

#### 1.04 PROJECT RECORD DOCUMENTS

- A. Maintain complete, accurate log of control and survey work as it progresses.

### PART 2 - PRODUCTS - Not Used.

### PART 3 - EXECUTION

#### 3.01 INSPECTION

- A. Verify locations of existing utilities prior to starting work. Promptly notify Implementation Manager and Engineer of any discrepancies discovered.
- B. Any work performed by the Contractor before Contractor's field engineering has been performed and/or before any discrepancies are reported to the Engineer, will be at the Contractor's risk.

#### 3.02 CONSTRUCTION STAKING

- A. Perform construction staking as required by the Contractor. The Bid Documents contain all information available to the Implementation Manager concerning the project. The Contractor must develop whatever additional information they feel necessary to properly conduct construction staking.
- B. Contact Implementation Manager and Engineer to verify location of stakes for curbs and storm drain inlets prior to starting construction of relocation.

#### 3.03 AS-BUILT PLANS

- A. Perform survey necessary to provide as-built drawings of storm sewer line location (horizontally and vertically), any site walls installed, and any other information that may be required for the record set of drawings.
- B. Two (2) sets of redline mark-up construction plans may be used as as-built submittal.

END OF SECTION

## REFERENCE STANDARDS AND DEFINITIONS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.02 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Approved: The term approved, when used in conjunction with the Engineer's action on the Contractor's submittals, applications, and requests, is limited to the Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. Engineer, Engineer, Engineer/Engineer: Wherever the terms "Engineer", "Engineer", or "Engineer/Engineer" are used, it shall refer to the design professional that holds the prime contract with the Implementation Manager for the applicable portion of the work being described. In general, these terms are used interchangeably in the context that the design professional is to be consulted at various times for submittal reviews, approvals, pre-construction reviews, work progress reviews, and other functions as defined in the contract documents.
- D. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no choice or option. However, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

- E. Day: A day is a calendar day beginning and ending at 12:00 midnight.
- F. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Engineer, requested by the Engineer, and similar phrases.
- G. Furnish: The term furnish means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- H. Indicated: The term indicated refers to graphic representations, notes, or schedules on the Drawings, Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. There is no limitation on location.

- I. Install: The term install describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- J. Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

The term experienced, when used with the term Installer, means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.

- K. Not-In-Contract: Not-in-contract (NIC) indicates work not included in this contract.
- L. Project site is the space available to the Contractor for performing construction activities either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- M. Provide: The term provide means to furnish and install, complete and ready for the intended use.
- N. Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- O. Testing Agencies: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- P. Trades: Using terms such as carpentry is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

### 1.03 OVERLAPPING AND CONFLICTING ASSIGNMENTS

- A. Specifications and Drawings: Where there appear to be overlapping or conflicting requirements in the drawings and specifications, the specifications shall govern.
- B. Industry Standards: Where compliance with 2 or more industry standards or sets of requirements are specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, most stringent requirement shall govern.
- C. Contractor's Options: Except for overlapping or conflicting requirements, where more than one set of requirements are specified for a particular unit of work, option is intended to be Contractor's regardless of whether or not it is specifically indicated as such.

1.04 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on GDOT Specifications, Special Provisions, Supplemental Specifications and Shelf Special Provisions.
- B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained below.
- C. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words that are implied, but not stated, shall be interpolated, as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
- D. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
- E. The words "shall be" are implied wherever a colon (:) is used within a sentence or phrase.

1.05 MINIMUM QUALITY/QUANTITY:

- A. In every instance, the quality level or quantity shown or specified is intended to be the minimum for the work to be performed or provided. Except as otherwise specifically indicated, the actual work may either comply exactly with that minimum (within specified tolerances), or may exceed that minimum within reasonable limits. In complying with requirements, indicated numeric values are either minimums or maximums as noted or as appropriate for context of requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.

1.07 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents, unless otherwise indicated.
- C. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Engineer for a decision before proceeding.



- D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
- E. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
- F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

**INCORPORATION OF GEORGIA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS**

PART 1 - GENERAL

1.01 GENERAL SCOPE:

- A. Georgia Department of Transportation specifications as published in the Department of Transportation, State of Georgia Standard Specifications Construction of Transportation Systems, 2013 Edition are incorporated by reference into the Project Manual and contract documents.
- B. It is the responsibility of the Contractor to become familiar with these specifications before bidding and to adhere to them during construction. A copy of the manual can be obtained from GDOT.

END OF SECTION

## PROJECT MEETINGS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION:

- A. Work described in this Section defines the requirements for project meetings as related to the Intersection Improvements.
- B. Related Work: Pre-construction conferences relating to a specific trade or specific construction process or sequence are specified in the applicable Specification Sections.

#### 1.02 CONTRACTOR'S DUTIES:

- A. Scheduling and notification:
  - 1. Notify all invited parties of meeting time and place at least 36 hours prior to meeting.
  - 2. Coordinate timing of weekly progress meetings with the Implementation Manager, Engineer, DOT, and the Implementation Manager.
- B. Administration:
  - 1. Prepare and distribute minutes for each meeting within 72 hours of any project meeting.
  - 2. Prepare and distribute copies of construction progress schedules as originally issued or subsequently approved, marked to show current progress.
  - 3. Update construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue a revised schedule concurrently with minutes of each meeting.

#### 1.03 PRE-CONSTRUCTION CONFERENCE:

- A. Scheduling: A pre-construction conference shall be held prior to commencement of Work at a location to be announced. Additionally, a pre-construction conference for the pavement striping shall also be held prior to commencement of Work.
- B. Attendance:
  - 1. The Implementation Manager
  - 2. The City of Atlanta.
  - 3. Project Manager
  - 4. The Engineer and invited Consultants.
  - 5. The Contractor.
  - 6. Selected DBE Firms
  - 7. GDOT Area Engineer
  - 8. GDOT Project Manager
  - 6. Major subcontractors as requested by the Implementation Manager.
  - 7. Representatives of separate Contractors, when applicable.
- C. Minimum agenda:
  - 1. List of major Subcontractors and material suppliers to be distributed and discussed.
  - 2. Insurance submittals to be distributed and reviewed

3. Tentative construction progress schedule and submittals schedule to be distributed, with discussion of critical work sequencing.
4. Identification and designation of responsible personnel.
5. Processing and distribution of field decisions, change orders and other contract documents
6. Processing of required submittals, including shop drawings, samples, and product data.
7. Procedures for maintaining required Project Record Documents and Maintenance Manuals.
8. Use of Site, including temporary offices, storage areas, erosion control and Site use limitations or restrictions.
9. Material and equipment deliveries, storage, protection and priorities.
10. Safety and first-aid procedures and responsibilities.
11. Security procedures and methods.
12. Introduction of Company Quality Control and Safety Manager.
13. Housekeeping procedures and methods.
14. Construction Schedule.

1.04 PROGRESS AND COORDINATION MEETINGS:

- A. Scheduling: Unless otherwise requested by the Implementation Manager, a progress and coordination meeting shall be held weekly on the job site.
- B. Attendance:
  1. The Implementation Manager
  2. City of Atlanta.
  3. Project Manager.
  4. The Contractor, represented by the Project Manager or Principal.
  5. The Sub-contractors and material suppliers contributing to or affected by construction progress delays, including those potentially involved in regaining anticipated schedules and others as requested by the Implementation Manager as applicable to the progress of the work.
  6. The Engineer and invited consultants.
  7. Representatives of separate Contractors, when applicable.
  8. Georgia Department of Transportation.
- C. Minimum agenda:
  1. Review minutes of previous meeting with review of follow-up and Work progress since previous meeting.
  2. Review field observations, problems and decisions.
  3. Identify problems and potential problems affecting project construction or anticipated progress.
  4. Review problems of materials delivery, off-site fabrication and Subcontractor scheduling.
  5. Develop corrective measures and procedures to regain planned schedule.
  6. Revise construction progress and submittals schedule to reflect actual progress.
  7. Review details of anticipated construction progress prior to next meeting.
  8. Review workmanship and maintenance of quality standards.
  9. Review proposed changes, including effect on construction progress schedule and completion date.

END OF SECTION

**SUBMITTALS**

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.02 SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following

1. Submittal schedule
2. Shop Drawings
3. Product Data
4. Samples
5. Certifications
6. Quality assurance submittals
7. Miscellaneous submittals

- B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits
2. Applications for Payment
3. Performance and payment bonds
4. Insurance certificates
5. List of subcontractors
6. GDOT QPL Materials & Products: **Note: While GDOT retains records of Materials & Products previously approved through the GDOT QPL program, submittals showing GDOT approval of GDOT QPL Materials & Products must be submitted as described in this section for this project's file**

## 1.03 RELATED SECTIONS: The following Sections contain requirements that relate to this Section:

- A. Division 1 Section "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
- B. Division 1 Section "Materials and Equipment" specifies requirements for listing of principle products to be submitted with the Submittal Schedule.
- C. Division 1 Section "Product Substitutions" specifies requirements for administrative and procedural requirements for product substitutions.
- D. Division 1 Section "Contract Closeout", and "Project Record Documents" specifies requirements for submittal of Project Record Documents, maintenance manuals and warranties at project closeout.

#### 1.04 DEFINITIONS

- A. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- B. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.
- C. Certified test (or inspection) reports are documents attesting that a product meets a specified level of performance or quality when a specimen is tested or inspected in accordance with a specified procedure, and consist of a certified statement by the product supplier or Contractor accompanied by a complete report of the inspection or test. These types of reports do not require and Engineer's approval.
- D. Miscellaneous submittals related directly to the work (non-administrative) include, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, copies of industry standards, record drawings, quality testing and certifying reports, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work and not processed as shop drawings, product data samples, certificates of conformance or compliance, or certified test reports, and similar information, devices and materials applicable shall be submitted solely for informational purposes. Providing these types of submittals are sufficient and adequate; they will not be responded to.

#### 1.05 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, required visual and performance mock-ups, delivery, other submittals and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
  - 3. Package submittals to cover complete assemblies or systems. Partial or incomplete submittals will be returned rejected without review.
  - 4. The Implementation Manager reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
- B. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals.
  - 1. Allow a minimum of ten (10) working days for initial review.

2. Allow additional time if processing must be delayed to permit coordination with subsequent submittals.
  3. The Implementation Manager will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
- C. Shop Drawings: Ten (10) consecutive working days will be required for the review of any shop drawings and other submittals requiring review by the Engineer if received in quantity equal to or less than fifty (50) sheets during five (5) consecutive working days. For each sheet or other item in excess of over fifty (50) sheets received in five (5) consecutive working days, additional time will be required for review time. The Engineer will advise the Contractor of additional time required.
- D. Re-submittals: Allow ten (10) consecutive working days for reprocessing each submittal.
1. No extension of Contract Time will be authorized because of:
    - a. Failure to comply with approved Submittal Schedule.
    - b. Failure to transmit submittals to the Implementation Manager and Engineer sufficiently in advance of the Work to permit processing.
- E. The Engineer will review the submittals of shop drawings, product data and samples and one (1) re-submittal.
1. For submittals in excess of the one (1) re-submittal, the Contractor shall reimburse the Implementation Manager, Engineer, and Engineer's consultants for additional services required of the Implementation Manager, Engineer, and Engineer's consultant by these additional re-submittals.
  2. No additional time will be allowed the Contractor for delays caused by excess number of re-submittals.
- F. Submittal Preparation:
1. Submittals shall be neat and legible, of uniform scale, responsive to requirements, with all sheets of similar information of same size.
  2. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
  3. Provide 2 spaces approximately 4 by 5 inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Engineer's and Contractor's review stamp and approval markings and the action taken. Include the following information on the label for processing and recording action taken.
    - a. Project name.
    - b. Date.
    - c. Name and address of the Implementation Manager.
    - d. Name and address of the Engineer.

- e. Name and address of the Contractor.
  - f. Name and address of the subcontractor.
  - g. Name and address of the supplier.
  - h. Name of the manufacturer.
  - i. Number and title of appropriate Specification Section.
  - j. Contractor's submittal number.
  - k. Drawing number and detail references, as appropriate.
4. Acceptance Criteria:
- a. Submittal item conforms to approved Submittal Schedule.
  - b. Submittal package is complete.
  - c. Submittal does not include Substitution Request.
  - d. Deviations from the Documents or revisions from previous submissions are clearly indicated.
5. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Implementation Manager and Engineer using Project Transmittal Form. Submittals received from sources other than the Contractor will be returned without action. Information on Submittal Sheets:
- a. Record relevant information and requests for data.
  - b. Record deviations from Contract Document requirements, including minor variations and limitations.
  - c. Include Contractor's certification that information complies with Contract Document requirements.
6. Transmittal Form: Prepare a draft of transmittal form for project and submit to the Implementation Manager and Engineer for acceptance. Include the following:
- a. List submittal number on each submittal as part of Contractor's review stamp and on transmittal.
  - b. Send submittals separately based on Specification Division and Section numbers, with transmittal form for each submittal.
  - c. Do not include more than a single Specification section on a submittal transmittal form. Each specification section is required to have its own transmittal from the Contractor.
  - d. Identify each proper Section number followed by sequential submittal number.
7. Establish and maintain a Submittal Log. Place submittal number on each shop drawing as part of Contractor's stamp and at top of Submittal Form. Submittal number shall consist of applicable Specification Section number followed by the sequential Submittal number, for example:
- Example: 05500-1, 05500-2, 05500-3, etc.
8. Resubmission Requirements: Number resubmissions using original submittal number plus a suffix, for example:
- 05500 - 2 for original submittal.



05500 - 2A for first re-submittal.  
05500 - 2B for second re-submittal.

9. Re-submittals: After the Engineer's review of submittal, revise and resubmit as required. Identify changes made since previous submittal by clouding changes.

G. Submittal Schedule

1. Prepare a complete schedule of submittals. Unless otherwise required in the Summary of Work, submit the schedule within 10 days of the date required for submittal of the Contractor's Construction Schedule.
  2. Coordinate the Submittal Schedule with the list of subcontracts, Schedule of Values and the list of products as well as the Contractor's Construction Schedule.
  3. Coordinate the Submittal Schedule with the Contractor's Construction Schedule. Submit the Submittal Schedule with the Products List Schedule specified elsewhere in Division 1.
  4. Prepare the schedule in chronological order. Provide the following information:
    - a. Scheduled date for the first submittal.
    - b. Related Section number.
    - c. Submittal category (Shop Drawings, Product Data, or Samples).
    - d. Name of the subcontractor.
    - e. Description of the part of the Work covered.
    - f. Scheduled date for re-submittal.
    - g. Scheduled date for the Engineer's final release or approval is needed.
  5. Lead time.
    - a. Submittals submitted out of sequence with Submittal Schedule requires additional review time; the Engineer will inform the Contractor when this will occur.
    - b. Review of sample submittals will require that all samples of adjacent materials will also have been submitted and received.
- H. Engineer's Action: The Engineer will advise the Contractor when additional time will be required to review a submittal and which sample submittals will be required to be submitted simultaneously for proper review and approval.
- I. Distribution: Following responses to the submittal, print and distribute copies to the Implementation Manager, Engineer, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- J. Submittal Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1. Do not schedule submittals out of sequence with the schedule for work except as required for products requiring long lead times between order and delivery. Submittals for long lead time items shall be accompanied by verification of the required lead time from the supplier.

#### 1.06 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report recording the following information concerning events at the site and submit duplicate copies to the Implementation Manager at weekly intervals.
  1. The daily report shall contain the following:
    - a. List of subcontractors at the site.
    - b. Approximate count of each contractors and subcontractors personnel at the site.
    - c. High and low temperatures, general weather conditions.
    - d. Accidents and unusual events.
    - e. Meetings and significant decisions.
    - f. Stoppages, delays, shortages, and losses.
    - g. Emergency procedures.
    - h. Orders and requests of governing authorities.
    - i. Change Orders received, implemented.
    - j. Services connected, disconnected.
    - k. Equipment or system tests and startups.
    - l. Partial Completions, occupancies.
    - m. Substantial Completions authorized.
    - n. List of deliveries received at site.
    - o. Work performed by contractor and subcontractor this day.
    - p. Building department or other regulatory inspectors at site.
    - q. Other visitors at site.

#### 1.07 SHOP DRAWINGS

##### A. Submittals

1. Submit newly prepared information drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
2. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
  - a. Dimensions.
  - b. Identification of products and materials included by sheet and detail number.
  - c. Compliance with specified standards.
  - d. Notation of coordination requirements.
  - e. Notation of dimensions established by field measurement.
  - f. Copy of Engineer's letter indicating acceptance of deviations indicated on the submittal.
  - g. All deviations, from the Contract Documents, clearly indicated.

- h. When detailing shop drawings, reference shop drawings details with correct document details. If applicable, provide manufacturers system detail number.
3. Sheet Size: Except for templates, patterns and similar full- size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 36 by 48 inches.
4. If the Contractor prepares shop drawings, the System Manufacturer must approve them. The shop drawings shall include reference to contract documents and to manufacturer details and require a letter from the manufacturer certifying that the shop drawing details are consistent with manufacturer's detailing practice.
5. Submittal: Submit one correctable translucent reproducible copy and three blue- or black-line prints for the Engineer's review; only the reproducible copy will be returned. For all layout submittals required as part of Division 16, submit CAD files.
6. Do not use Shop Drawings without an appropriate final stamp from the Contractor and Engineer indicating action taken in connection with construction.
7. Deviations from Contract Documents require specific written acceptance by the Implementation Manager and Engineer of the noted deviation and clear indication on the submittal.

#### 1.08 PRODUCT DATA AND NON-REPRODUCIBLE SHOP DRAWINGS

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
  1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, that are not required, mark copies to indicate the applicable information. Include the following information:
    - a. Manufacturer's printed recommendations.
    - b. Compliance with trade association standards.
    - c. Compliance with recognized testing agency standards.
    - d. Application of testing agency labels and seals.
    - e. Notation of dimensions verified by field measurement.
    - f. Notation of coordination requirements.
  2. Modify Product Data sheets to delete information which is not applicable to the Work. Edit all material to conform to job requirements and to clearly show model number, type or size proposed. Provide additional information if necessary to supplement standard information. Product data sheets that are submitted with extraneous information not deleted and/or modified will be returned to the Contractor without review.
  3. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed by the Contractor.

- B. Submittals: Submit seven (7) copies of each required submittal. The Engineer will retain one and will return the others marked with action taken and corrections or modifications required.
  - 1. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
- C. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
  - 1. Do not proceed with installation until a copy of Product Data applicable is in the Installer's possession.
  - 2. Do not permit use of unmarked copies of Product Data in connection with construction.

#### 1.09 SAMPLES

- A. Limits of Samples: Samples are required only for substitutions (alternate manufacturers) and for custom fabricated items, unless specifically required by the individual Section.
  - 1. Where a specified item is being provided, samples will not be required or reviewed.
  - 2. Where a specified item is no longer available, manufacturer's current catalog numbers vary from those specified, named manufacturer's product data differs from requirements, or where custom colors require evaluation, samples are required.
  - 3. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
  - 4. Mount, or display, Samples in the manner to facilitate review of qualities indicated. Prepare Samples to match the Implementation Manager's sample. Include the following:
    - a. Specification Section number and Submittal Number
    - b. Generic description of the Sample
    - c. Sample source
    - d. Product name or name of the manufacturer
    - e. Compliance with recognized standards
    - f. Availability and delivery time
  - 5. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements, and comparison of these characteristics between the final submittal and the actual component as delivered and installed.
  - 6. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) sets that show approximate limits of the variations. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, and details of assembly, connections, operation, and similar construction characteristics.

7. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
  8. Samples not incorporated into the Work, or otherwise designated as the Implementation Manager's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
  9. Preliminary submittals: When individual Sections call for initial selection samples to allow selection of color, pattern, texture or similar characteristics from a complete range of manufacturer's available offerings, submit a full set of choices for the material or product.
  10. Preliminary submittals will be reviewed and returned with the Engineer's mark indicating selection and other action.
- B. Sample Submittals: When required by individual Specification Section:
1. Submit one (1) sample of standard manufactured items and for initial selection of colors and finishes.
  2. Submit two (2) samples for custom fabricated items.
  3. When color/finish sample is approved, furnish one (1) additional sample of approved color/finish for Engineer's use.
  4. One of the custom fabricated samples will be returned with the Engineer's comments.
  5. For single samples retained by the Engineer, photographs of problem areas will be returned with the Engineer's comments for Contractor's action.
  6. Maintain sets of Samples for custom fabricated items, as returned, at the Project site, for quality comparisons throughout the course of construction.
  7. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
  8. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- C. Distribution of Samples: When necessary for Contractor's convenience, prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
1. Field Samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.

2. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.
3. Miscellaneous submittals (as defined under paragraph "DEFINITIONS" herein) will not be processed as shop drawings, product data, or samples. These types of miscellaneous submittals are submitted solely for informational purposes. Provided they are sufficient and adequate, they will not be responded to.

#### 1.10 QUALITY ASSURANCE SUBMITTALS

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
  1. Certifications shall be dated, identified to the project, work category listed and carry Contractor's signature.
- C. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
  1. When professional certification of performance characteristics of materials, systems, or equipment is required by the Contract Documents, the Engineer shall be entitled to rely upon such certification to establish that the materials, systems or equipment will meet the performance criteria required by the Contract Documents.
- D. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Contractor's Quality Control and Safety Program."

#### 1.11 ENGINEER'S ACTIONS:

- A. General
  1. Except for submittals for the record or information where action and return is required, the Engineer will review each submittal, mark to indicate action taken, and return promptly.
  2. Compliance with specified characteristics is the Contractor's responsibility.
  3. Submittals will be reviewed by the Engineer for design conformity and general conformance with the Contract Documents only. The Contractor is responsible for confirming and correlating dimensions at job sites for tolerances, clearances, quantities, fabrication processes and techniques of construction, coordination of their Work with other trades and full compliance with the Contract Documents.
  4. Review of submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities or for substantiating

instructions for installation or performance of equipment or systems designed by the Contractor, all of which remain the responsibility of the Contractor to the extent required by the Contract Documents. Review by the Engineer shall not constitute approval of safety precautions or, unless otherwise specifically stated, of construction means, methods, techniques, sequences of procedures.

5. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- B. Action Stamp: The Engineer will stamp each submittal with a uniform, action stamp. The Engineer will mark the stamp appropriately to indicate the action taken, as follows:
1. Approved: The Work covered by the submittal may proceed provided it complies with requirements of Contract Documents. Final payment depends on that compliance.
  2. Approved as Noted: The Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
  3. Revise as Noted and Resubmit: Do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
  4. Rejected/Resubmit as Specified: Do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. The work covered by the submittal does not conform to the design concept or meet the contract document requirement.
  5. Do not use, or allow others to use, submittals marked "Revised as Noted and Resubmit" or "Rejected/Resubmit as Specified" at the Project Site or elsewhere where Work is in progress.
  6. Reviewed: Where a submittal is the responsibility of a consultant to the Engineer, the Engineer's stamp will indicate that the submittal has been reviewed by the Engineer for design intent. The Engineer's consultant shall stamp the submittal with an appropriate action stamp that will define the action to be taken by the Contractor.
  7. No Action Required: Submittal is for information or record purposes or special processing or other activity. The submittal will not be returned and the Contractor will be so notified.
- C. Unsolicited Submittals: The Implementation Manager and Engineer will not take action on unsolicited submittals and will inform Contractor of its disposition
- D. Other Action: Where a submittal is primarily for information or record purposes, special processing, quality assurance or other activity, the submittal will not be returned, and Contractor will be so notified.

1.12 SUBMITTALS FOR IMPLEMENTATION MANAGER RECORDS

- A. Permits, Licenses, and Certificates: For the Implementation Manager's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION



**CONSTRUCTION SCHEDULING AND TRAFFIC CONTROL**

## PART 1 - GENERAL

## 1.01 GENERAL SCOPE:

- A. This section covers the minimum standards of traffic control.
- B. This section covers the minimum standards of creating a working Construction Schedule for Contract Work using the standard bar chart method.
- C. This section covers the minimum standards for working with the public right-of-way.

## 1.02 PROJECT SCHEDULING

- A. The contractor shall comply with all City of Atlanta Ordinances concerning working hours. One specific ordinance is the "Noise" Ordinance 03-0-0119 concerning it to be unlawful to operate power tools or construction equipment between certain hours without a variance. A second specific ordinance is Sec. 150-293 concerning the construction or repairs on streets during peak traffic hours.
- B. The Contractor shall not disturb more than 300 linear feet of the construction limits at any time. Thus, the Contractor shall be required to complete the project using a 300-foot Sequence of Operations. **The Contractor shall also sequence the work in accordance with Technical Special Provision section 150.6.**
- C. The Contractor shall not schedule the work such that all street accesses to a single property are within the same 300-foot section.
- D. The Contractor shall work on all drive access aprons during off hours of the establishment. Should the closing of an access be scheduled for more than 12 hours, temporary measures must be taken to maintain vehicular access after the 12-hour period.
- E. Intentionally left blank
- F. It is the responsibility of the Contractor to coordinate the temporary "closing" of bus stops with MARTA. If this includes the temporary re-location of bus stops or other work, this work shall be the responsibility of the contractor.
- G. The Contractor is to keep ADA public access to at least one door of every establishment at all times.
- H. The Contractor shall work on only one ADA ramp per intersection at a time. Thus only one quadrant of an intersection can be closed to pedestrian traffic simultaneously.
- I. For day work the Contractor shall barricade the sidewalk such that the public can safely use the concrete section of the sidewalk while the paver section is being constructed and vice versa.

- J. For night work the Contractor will be allowed full sidewalk closure (pre-approved by the City of Atlanta) providing at least a 4-foot section of the sidewalk is available for safe public passage by 6:00 AM the following morning and there is ADA public access to all establishments.
- K. The Contractor will be allowed (if pre-approved by the City of Atlanta) to saw-cut and pave during night hours providing all City of Atlanta ordinances are followed.
- L. Saw cutting and paving operations do not have to follow the 300-foot Sequence of Operations providing they are accomplished at night and providing the work plan is pre-approved by the Project Manager and the City of Atlanta.
- M. It is anticipated that the traffic control plan for night work will be less demanding than a traffic plan for day work.
- N. There are several business establishments and residences that are affected by this work and disruption to these must be kept to a minimum. The Contractor shall take this into account when formulating the schedule.
- O. To help facilitate the schedule, the Implementation Manager will be the main contact between the Contractor and the local community.

#### 1.03 SPECIAL CONSTRUCTION CONSIDERATION FOR CERTAIN PUBLIC EVENTS

There are certain public events that will occur within the project limits and construction period that the Contractor should become aware of by contacting the City of Atlanta. The Contractor is to schedule and perform the work so that during these events:

- All sidewalks are to be either the final product or the existing condition.
- All curbing is to be either the final product or the existing condition.
- All pavement shall be the final product or the existing condition. Except that the final asphalt "patch" between the curb and existing pavement does not need to be installed.
- The Contractor shall cooperate with the event organizers and public authorities concerning public safety for these events. This would include the removal, relocation, and/or securing of any construction materials, equipment, temporary fencing, or any other public safety issues in the control of the Contractor.

#### 1.04 TRAFFIC CONTROL AND WORKING WITHIN THE PUBLIC RIGHT-OF-WAY

- A. Incorporated into this specification by reference is a document prepared by the City of Atlanta titled "City of Atlanta Department of Public Works, Public Right-of-Way Field Manual" dated December 2019. The contractor is to adhere to the conditions in this document and any other conditions enforced by the City of Atlanta or any other governmental authority. A copy of this manual can be obtained from the Department of Public Works.
- B. Right to Restrict Construction - The Project Manager and the City of Atlanta reserves the right to restrict construction operations when, in their opinion, 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 Project Manager and/or City of Atlanta deems that conditions are unfavorable for continuing the Work.

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

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

- D. If the work is suspended, the Contractor may submit a request for additional contract time as allowed under the contract. The Project Manager 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, overhead, profit, remobilization, and 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.
- E. 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 traffic control plans. All signs shall meet the requirements of the MUTCD.
2. Arrow Panels Portable sequential or flashing arrow panels for use for all lane closures, shall be a minimum size of 30" high by 60" wide with not less than 15 lamps used for the arrow. The arrow shall occupy virtually the entire size of the arrow panel. 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 B panel as shown in the MUTCD. 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 for all type of arrow panels 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. The Contractor shall notify the Project Manager, in writing, when any non-specification arrow display panel(s) is being used in the work.

1.05 DIRECTIONAL BORING PERMIT SUBMITTALS

- A. The City of Atlanta has published the following requirement as of November 10, 2003.

*Permit Submittals*

*DEPARTMENT OF PUBLIC WORKS David E. Scott, P.E Commissioner*

*In order to expedite the review and subsequent approval of permit requests, you should submit four copies your company letterhead specifying your intended construction method. If directional boring is used forward CAD drawings to us showing the horizontal and vertical locations of all utility mains and laterals in the immediate area of the proposed running line. Delineate the running line as a thick bold line on the plans and the profiles.*

*If open trenching will be your method of construction, a horizontal plan showing all the utility mains and laterals will be sufficient for review and approval. A profile will not be necessary if the utilities will be exposed.*

*Open trenching will require additional restoration including milling and resurfacing of the road surface to a satisfactory condition. Regardless of the chosen method of operation, all sewer mains and laterals are to be shown with your CAD drawings. Cable pulls should be requested separately from excavation permits, after construction aspects of a job are completed.*

*The excavation permit entitles you to: 1] Pull duct 2] Place all man holes/hand holes 3] Proof duct 4] Restoration.*

*We will facilitate vertical locates of existing utilities by issuing your contractors a "Qualified Contractor Permit."*

*This permit requires each contractor provide us a copy of their Certificate of Liability Insurance with a minimum of \$3,000,000 in general liability coverage and name the City of Atlanta as certificate holder.*

*If I can be of further assistance, please give me a call at 404-330-6087.*

*Respectfully, Larry Carter*

*Construction Inspector, Principal Street Operations Division Department of Public Works*

#### 1.06 TRAFFIC CONTROL PLANS:

- A. The Contractor shall develop detailed staging and traffic control plans for performing each 300-foot Sequence of Operations of the Work including but not limited to all traffic shifts, detours, paces, lane closures or other activities that disrupt traffic flow. These plans shall be submitted for approval at least two weeks prior to the scheduled date of the activity to the Project Manager and City of Atlanta. Activities that have not been approved by the Project Manager and the City of Atlanta at least seven (7) days prior to the scheduled date shall be rescheduled.
- B. Where traffic is permitted through the work area under stage construction, the Contractor may choose to construct, at no additional expense to the Implementation Manager, temporary on-site bypasses or detours in order to expedite the work. Plans for such temporary bypasses or detours shall be submitted to the Project Manager and the City of Atlanta 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 Project Manager and/or City of Atlanta, they are no longer necessary for the satisfactory progress of the Work.
- C. As an option to the 300-foot Sequence of Operations in Section 01326 Part 1.02.B of the Project Manual, the Contractor may submit an alternative Sequence of Operations for review and approval. A twenty-calendar day lead-time for the Project Manager's review shall be given to this submission so that a decision on its acceptability can be made. However, if the alternate plan is not approved, the Contractor shall be required to construct per the 300-foot Sequence of Operations outlined in Section 01326 Part 1.02 B. of the Project Manual.
- D. The Implementation Manager 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 Project Manual or from an approved Contractor alternate.
- E. The Contractor shall secure the Project Manager and/or City of Atlanta'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 traffic control plan, proposed by the Contractor, shall be submitted to the Project Manager for approval.
- F. Concerning the Traffic Control Plan some additional traffic control details will be required prior

to any 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. Drainage details for temporary and permanent alignments.
  6. Location, length, and/or spacing of channelization and protective devices (temporary barrier, guardrail, barricades, etc.
  7. Starting time, duration and date of planned change.
  8. 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.
- F. A minimum of three (3) copies of the above details shall be submitted to the Project Manager and the City of Atlanta for approval not more than 14 days but at least 10 days prior to the anticipated traffic shift. The Contractor shall have traffic control details for a traffic shift which has been approved by the Project Manager and/or City of Atlanta and all necessary permits from the City of Atlanta 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 Project Manager and the Contractor's representative will verify that all conditions have been met prior to the Contractor obtaining materials for the actual traffic shift.
- H. The Contractor shall obtain from the City of Atlanta a lane closure permit for each 300-foot Sequence of Operations if a lane closure is needed.
- I. The Contractor shall obtain from the City of Atlanta all other necessary permits required to work in the public right-of-way.

#### 1.07 PROJECT SCHEDULING:

- A. Submit initial construction schedule minimum five calendar days prior to preconstruction meeting. Monthly, resubmit revised and updated schedules accurately depicting progress to first day of each month.
1. Submit one reproducible transparency for the Implementation Manager's Representative's information.
  2. Distribute reviewed schedules to:
    - a. Implementation Manager and Project Manager
    - b. Engineer
    - c. Subcontractors
- B. Prepare complete and comprehensive computer generated "Critical Path Method" schedule for all portions of Work using the Microsoft Project format.
- C. Provide separate horizontal breakdown of each trade or operation in chronological order of beginning of each item of Work.

- D. Identify each item of Work by specification section number and by logically grouped activities.
- E. The Contractor shall have a person on staff that is fluent with the construction scheduling computer program.
- F. Identify first workday of each week on horizontal time scale. Provide adequate spacing on schedule for updating.
- G. Provide complete sequence of construction by activity:
  - 1. Shop Drawings, Product Data and Samples submittal data and status of each submittal relative to Contractor's submittal schedule.
  - 2. Decision dates for selection of finishes.
  - 3. Product procurement and delivery dates, including products furnished by the Implementation Manager.
  - 4. Dates for beginning and completion of each element of construction.
  - 5. Indicate project percentage of completion for each item of Work.
  - 6. Provide sub-schedules to define critical portions of Work.

#### 1.08 SCHEDULE UPDATING:

- A. Show all changes since previous submittal of updated schedule.
- B. Indicate progress of each activity, show completion dates. Include:
  - 1. Major changes in scope and activities modified since previous updating.
  - 2. Revised projections due to changes, and other identifiable changes.
- C. Provide narrative report, including:
  - 1. Discussion of problem areas, including current and anticipated delay factors and their impact.
  - 2. Corrective actions taken, or proposed, and its effect.
  - 3. Description of revisions:
    - a. Effect on schedule to change of scope.
    - b. Revisions in duration of activities and other changes that may affect schedule.

#### 1.09 DISCREPANCY WITH DOCUMENTS:

- A. If section 01326 Construction Scheduling and Traffic Control conflicts with section 150 Traffic Control, Section 150 Traffic Control shall govern.

END OF SECTION

## CONTRACTOR'S QUALITY CONTROL AND SAFETY PROGRAM

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

#### 1.02 SUMMARY

- A. This Section describes the requirements for implementation of a Quality Control and Safety Program by the Contractor to assure performance of the Work in conformance with the requirements of the Contract Documents.

#### 1.03 QUALITY CONTROL AND SAFETY PROGRAM

- A. The Contractor shall prepare and submit within ten (10) days after the issuance of Notice to Proceed, the Quality Control, and Safety Program he intends to implement for the Work for approval by the Implementation Manager. This Program shall be tailored to the specific requirements of the Work and shall become an active part of the construction procedures. The Quality Control and Safety Program shall include the procedures, instructions, reports, and forms to be used throughout the performance of the Work. The Implementation Manager reserves the right to review and reject all or part of the Quality Control and Safety Program as proposed by the Contractor. The Contractor shall revise and resubmit as appropriate until satisfactory to the Implementation Manager. The basic objectives of the Quality Control and Safety Program are as follows:

1. To ensure that all Work adheres strictly to all requirements of the Contract Documents and governing agencies.
2. To produce first class workmanship.
3. To prevent deficiencies through pre-construction and safety coordination
4. To detect and correct deficiencies in a timely manner.
5. To provide an auditable record of all tests, inspections, procedures, non-compliance and corrections, and any other pertinent data as required by the Implementation Manager.
6. To ensure all work is performed under the OSHA guidelines, and local and state public health and safety regulations.
7. To confirm that the Contractor is in compliance with the state of Georgia Department of Transportation relative to qualifying to bid the job; being certified through GDOT for traffic control management and acknowledging that it is understood that the Contractor shall maintain such a certified person on the construction site at all times.
8. The Contractor shall notify the Implementation Manager's Representative in writing of any proposed change to his inspection system and changes shall not be permitted if they would, in the opinion of the Implementation Manager's Representative, result in nonconformance with the Contract requirements.
9. The Contractor may select either an outside "agency" or in-house personnel to administer the program. In either case, the quality control and safety staff on-site shall be responsible only for quality control and safety and the quality control and safety manager shall report directly to the Contractor's highest ranking Corporate Officer involved in the Work. The management and/or control of the construction process. Quality control and

safety staff members shall interface with the Implementation Manager, its Inspectors, and Consultants, as required and appropriate.

10. Failure to comply with the Quality Control and Safety Program requirements stated herein may result in the withholding of monthly progress payments and/or termination of the Contractor for cause by the Implementation Manager in accordance with the General Conditions.

#### 1.04 REQUIREMENTS OF THE PROGRAM

A. The Quality Control and Safety Program submittal shall include, as a minimum, the following:

1. The quality control and safety organization chart, beginning with the quality control and safety Manager, shall include quality control and safety personnel as may be necessary to accomplish complete and adequate inspection of the Work.
2. Names and qualifications of personnel and firms selected to implement the Quality Control and Safety Program on-site and off-site.
3. Authority and responsibility of the quality control and safety Staff.
4. Methods of quality control and safety inspection including subcontractor's work and describing name of qualified testing laboratory to be used, if applicable.
5. Documents to be used to record inspections and tests, including those specified in the Contract.

B. Formats for documentation and reports.

1. A letter signed by the Responsible Managing Officer of the Contractor's firm outlining the authority of the quality control and safety Manager to include, among other things, the authority as described herein. Clerical personnel sufficient to accomplish timely submittal of quality control and safety Reports and other required documentation shall be provided.

#### 1.05 QUALIFICATION OF QUALITY CONTROL AND SAFETY MANAGER AND STAFF.

A. The qualifications required of the quality control and safety Manager and staff are as follows:

1. The Manager must have recent 10-years construction experience in projects of similar size and nature.
2. The Manager must have a minimum of ten (10) years construction-related quality control and safety experience.
3. There must be a quality control and safety staff person on site at all times that is a Certified OSHA Safety Engineer.
4. There must be a quality control and safety staff person on site at all times identified as the Work-site Traffic Control Supervisor (WTCS). The WTCS shall have one year experience directly related to work site traffic control in a supervisory or responsible capacity and shall have been certified by the American Traffic Services Association Work Site Traffic Supervisor Certification program or an equal approved by the Department.

#### 1.06 Responsibilities and Duties of the Quality Control and Safety Staff:

A. The quality control and safety Manager shall have the authority to stop work, reject work, order work removed, initiate remedial work, propose solutions, and reject material not in compliance with the Contract. Responsibilities of the Quality control and safety Manager shall include, but are not limited to the following:



1. Present on-site during all working hours and assigned "full time" to this Project. Contractor shall designate alternate individual(s) to assume responsibilities in the temporary absence of the quality control and safety Manager or when overtime work is being performed.
2. Have complete familiarity with the Contract Drawings and Specifications.
3. Establish and implement Quality Control and Safety Programs for the Contractor and with the various Subcontractors and monitor their conformance.
4. Present samples, mock-ups and test panels to be used as standards of quality for review by the Engineer.
5. Inspect existing conditions prior to the start of new work segments.
6. Perform in-progress and follow-up inspections on each work segment to ensure compliance with the Contract Documents. Accompany the Engineer and Implementation Manager on such inspections.
7. Coordinate required tests, inspections, and demonstrations with the City of Atlanta's Testing Agency, County and State inspectors, and any other authority having jurisdiction.
8. Inspect all materials and equipment arriving at the job site to ensure conformance to the requirements of the Contract Documents. Prepare and submit to the Implementation Manager written reports as required by the Contract Documents.
9. Identify, report and reject defective Work or Work not in conformance with the Contract Documents. Monitor the repair or reconstruction of rejected Work.
10. Develop checklists to be used for the inspection of each Division of the Work.
11. Retain specialists or outside firms for inspection of Work in areas where additional technical knowledge is required (mechanical, electrical, electronics, controls, communications, security, welding, structural, security hardware, etc.). Submit qualifications of firms and specialists to the Implementation Manager and Engineer for approval.
12. Schedule and accompany the Implementation Manager and Engineer on any Site visits when requested.
13. Schedule additional Site visits where appropriate.
14. Verify and report that all materials and equipment manufactured off-site are in conformance with the Contract Documents.
15. Prior to the start of each Division, Section and/or major item of Work required by the Contract Documents, conduct a preconstruction quality control and safety meeting with responsible field and office representative and the Implementation Manager and Engineer. Provide the Implementation Manager and Engineer minutes of these meetings within forty-eight (48) hours.
16. Work closely with the Implementation Manager to ensure optimum quality control and safety. Attend Implementation Manager/Contractor meetings as required by the Implementation Manager.
17. Monitor, report, and correct all site activities for compliance with OSHA rules and regulations.
18. Monitor, report, and correct all construction activities that are contrary to local and state traffic codes and regulations.

#### 1.07 REPORTING PROCEDURES

- A. As a minimum, develop forms, logs and reporting procedures consisting of the following:

1. A quality control and safety meeting held every 2 weeks between the Implementation Manager and the quality control and safety Manager during which only Quality related topics will be reviewed.
2. A monthly written report published at month end providing an overview of quality control and safety activities, problems found and/or solved, status of remedial work, status of mock-ups, anticipated problems and planned activities for the coming month, etc.
3. Deficiency reports: Plan of action by the Contractor for correcting any known contract deficiencies including delay in scheduled progress.
4. Weekly reports (including reports from Contractor and Subcontractors) to the Implementation Manager describing:
  - a. Equipment and material received.
  - b. Tests and inspections performed with submittal information.
  - c. Deficiencies noted and/or corrected.
  - d. Quality control and safety concerns and problems.
  - e. Record keeping (as required).

#### 1.08 IMPLEMENTATION

- A. The Contractor's inspection shall be adequate to cover all operations, including both on-site and off-site and will be keyed to the proposed sequence of work and shall include as a minimum at least three (3) phases of inspection for all definable items or segments of work, as follows:
  1. Preparatory Inspection shall be performed prior to beginning any work on any definable segment of the Work and shall include a review of Contract requirements; verification that all materials and/or equipment have been tested, submitted, and accepted; verification that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed; and a physical examination of materials and equipment to assure that they conform to accepted shop drawings or submittal data and that all material and/or equipment are available. As a part of this preparatory work, Contractor's quality control and safety organization will review and verify that all documents, including but not limited to; shop drawings, submittal data, method of quality control and safety, product data sheets, test reports, affidavits, Certification and manufacturer's instructions have been submitted and accepted by the Implementation Manager as required herein. Each submittal to the Implementation Manager shall bear the date and the signature of the Contractor's quality control and safety Manager indicating that he has reviewed the submittal and certified it to be in compliance with Drawings and Specifications or showing the required changes.
  2. Initial Inspection: To be performed as soon as a representative segment of the particular item of work has been accomplished and to include examination of the quality or workmanship and a review of control testing for compliance with Contract requirements, exclusion of defective or damaged materials, omissions, and dimensional requirements.
  3. Follow-up Inspection: To be performed daily or as frequently as necessary to ensure continuing compliance with Contract requirements, including control testing, until completion.

4. The Contractor shall maintain daily current records with information as described above, in an appropriate format of all inspections and tests that the required inspection or tests have been performed. These records must cover both conforming and defective items and must include a statement that all supplies and materials, incorporated in the Work, are in full compliance with the terms of the Contract. Two legible copies must be furnished to the Engineer/ Implementation Manager's Representative. The report will cover all work performed or completed subsequent to the previous report.

END OF SECTION

**CONSTRUCTION FACILITIES**

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.02 SUMMARY

- A. The Contractor will not install, erect, or place any construction facility within the work area in general or connect to any utility without receiving prior approval from the Implementation Manager. The Contractor shall submit to the Implementation Manager a listing of all temporary construction facilities and utilities the Contractor wishes to place on site or connect to. The listing shall include the following:

1. Type of construction facility and/or utility.
2. Exact location of construction facility.
3. Exact location of point of service for any utility.
4. Date of installation (or start of service), length of duration, and date of removal (or termination of utility).

Upon receiving the information the Implementation Manager shall review the request and approve the request whenever possible based upon the impact to the immediate neighborhood and the work area in general.

However, the Implementation Manager may not be able to approve all or any requests. Additionally, the Implementation Manager may grant approval only to have the construction facility and/or utility "disallowed" by a public authority. Thusly, the Contractor will be responsible for all and any costs concerning all construction facilities and temporary utilities including the installation, removal, and any damage to adjacent property and/or the right-of- way.

- B. Should temporary facilities and utilities be installed and/or used this Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- C. Temporary utilities include, but are not limited to, the following:
  1. Water service and distribution.
  2. Temporary electric power and light.
  3. Temporary heat.
  4. Ventilation.
  5. Telephone service.
  6. Sanitary facilities, including drinking water.
  7. Storm and sanitary sewer.
- E. Support facilities include, but are not limited to, the following:
  1. Field offices and storage sheds.
  2. Dewatering facilities and drains.
  3. Temporary enclosures.
  4. Hoists and temporary elevator use.

5. Temporary project identification signs and bulletin boards.
  6. Waste disposal services.
  7. Rodent and pest control.
  8. Construction aids and miscellaneous services and facilities.
- F. Security and protection facilities include, but are not limited to, the following:
1. Temporary fire protection.
  2. Barricades, warning signs, and lights.
  3. Enclosure fence for the site.
  4. Environmental protection.
- G. Portable Construction Sign
1. The Contractor shall construct Six (6) portable construction signs with the face of the sign as detailed on page six of this section. The face of the sign shall be made from vinyl applied over the  $\frac{3}{4}$ " plywood. The specifications of the colors and fonts will be supplied to the Contractor by the Implementation Manager.
  2. The Contractor shall move the signs as work progresses.

### 1.03 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
1. Building code requirements.
  2. Health and safety regulations.
  3. Utility company regulations.
  4. Police, fire department, and rescue squad rules.
  5. Environmental protection regulations.
- B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

### 1.04 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Implementation Manager, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take

necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. General: Provide new materials. If acceptable to the Implementation Manager, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Lumber and Plywood:
  - 1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
  - 2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thickness indicated.
  - 3. For fences and vision barriers, provide minimum 3/8-inch- (9.5-mm-) thick exterior plywood.
  - 4. For safety barriers, and similar uses, provide minimum 5/8-inch- (16-mm-) thick exterior plywood.
- C. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.
- D. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- E. Paint:
  - 1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.
  - 2. For sign panels and applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
  - 3. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- F. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- G. Water: Provide potable water approved by local health authorities.
- H. Open-Mesh Fencing: Provide 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chainlink fabric fencing 6 feet (2 m) high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches (38mm) I.D. for line posts and 2-1/2 inches (64 mm) I.D. for corner posts.

### 2.02 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with

- ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- C. **Electrical Power Cords:** Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
  - D. **Lamps and Light Fixtures:** Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
  - E. **Heating Units:** Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
  - F. **Temporary Offices:** Provide mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
  - G. **Temporary Toilet Units:** Provide self-contained, single-occupant toilet units of the chemical, or aerated recalculation type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
  - H. **Fire Extinguishers:** Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities that are no longer needed or are replaced by authorized use of completed permanent facilities.

#### 3.02 TEMPORARY UTILITY INSTALLATION

- A. Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
  - 1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
  3. Obtain easements to bring temporary utilities to the site where the Implementation Manager's easements cannot be used for that purpose.
- B. Use Charges: Cost or use charges for temporary facilities and utilities are not chargeable to the Implementation Manager. The Implementation Manager will not accept cost or use charges as a basis of claims for Change Orders.

### 3.03 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- B. Construction Site Security: Provide maintenance and cleaning of entire construction site on a daily basis. Secure all construction equipment, machinery and vehicles, park and store only within fenced area, and render inoperable during non-work hours. Contractor is responsible to insure that no construction materials, tools, equipment, machinery or vehicles can be used for unauthorized entry or other damage or interference to activities and security of existing facilities adjacent to and in the vicinity of construction site.
- C. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

### 3.04 OPERATION, TERMINATION, AND REMOVAL

- A. Termination and Removal: Unless the Implementation Manager requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
- B. Materials and facilities that constitute temporary facilities are the Contractor's property. The Implementation Manager reserves the right to take possession of project identification signs.

END OF SECTION



## **MATERIALS AND EQUIPMENT**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### **1.02 SUMMARY**

- A. All materials supplied by the Contractor and its' Sub-contractors shall be listed has approved materials on the Georgia Department of Transportation (GDOT) Qualified Product List (QPL) or as specified by Special Provisions.
- B. The Contractor and its' Sub-contractors cannot provide materials testing. All materials testing shall be conducted in accordance with GDOT's guidelines.

END OF SECTION

## PRODUCTS AND SUBSTITUTIONS

### PART 1 - GENERAL

#### 1.01 SCOPE:

- A. This Section describes administrative and procedural requirements for substitution requests by the Contractor.

#### 1.02 DEFINITION:

- A. Products: Items specified by reference standards, manufacturer's designation such as name, and model, or number, or proprietary specifications.
- B. Substitutions: Products, materials, equipment or construction method changes to the Contract Documents as requested by the Contractor, Implementation Manager, Engineer, or Governing Agencies after Contract Award. When only one manufacturer or trade name is specified, no substitutions will be permitted, except by written authorization from the Implementation Manager and Engineer.
- C. Options: Several products, materials, equipment or Construction methods listed as being equally acceptable in the Contract Documents. The Contractor has the option of choosing among the named.

#### 1.03 SUBSTITUTIONS:

- A. If products indicated in the Contract Documents are unavailable beyond the control of the Contractor or if the particular use of a product is not indicated in the Contract Documents, the Contractor shall make a written Substitution Request.
- B. The burden of proving the quality of a product rests upon the party making the request for substitution.
- C. Substitution Requests: Each request shall be made on Contractor's Letterhead and shall include the following:
  - 1. Original product items and the proposed substitution identification, including manufacturer's name, address, and phone number.
  - 2. Complete schedule of changes in the Contract Documents or work schedule, which must be made to permit use of proposed substitution.
  - 3. Provide reports, technical data, photos, installation data, warranty information, and maintenance requirements for the use and care of the proposed substitution.
  - 4. Name, address, and reference phone number of similar projects at which the product has been installed for a minimum of three years.
  - 5. Installed and projected maintenance cost differences, if any, between original and proposed product.
  - 6. List local source or distributor if not directly serviced or provided by the Manufacturer.
  - 7. Provide samples, as applicable, or upon the Implementation Manager and Engineer's request.
  - 8. Vegetation substitution written requests shall be accompanied by two (2) color photos showing scaled height and width, or an actual example of a typical plant representation,

the nursery name and phone number, availability requirements. Acceptance of the typical plant sample does not alter the Engineer's right-of-rejection as indicated in Section 02950 Landscaping.

- D. If a Proposal Substitution is approved by the Implementation Manager and Engineer, an Addendum will be issued. Unless substitutions are received and approved as described above, the successful Bidder shall be responsible for furnishing materials and products in accord with Contract Documents.
- E. In the event that specified items cannot be delivered to the job site and incorporated into the Work at such time and in such quantities as to not cause delay, then the Contractor may request a substitution. Materials shall not be ordered until the Implementation Manager and Engineer's written approvals are received by the Contractor. The Contractor shall provide any price increase or decrease verification with the submittal.
- F. No increase in the contract unit price will be allowed on substitutions made after receipt of bids. If any Substitution provides a cost savings, the Contract price will be adjusted by the Substitution Change Order, and the Implementation Manager shall be credited the new savings.

PART 2 - EXCLUDED

PART 3 - EXCLUDED

END OF SECTION

## CONTRACT CLOSE-OUT

### PART 1 - GENERAL

#### 1.01 SCOPE:

- A. This Section specifies administrative and procedural requirements for Project Close-Out, including, but not limited to, observation procedures, Project Record Document submittals and Maintenance Manual submittals.
- B. Close-Out requirements for specific construction activities are included in other specification sections and shall be addressed as indicated in those sections.

#### 1.02 DEFINITION:

- A. Close-out: The general requirements near the end of the Contract Time, in preparation for Final Acceptance, Final Payment, acceptance by the Owner, and similar actions evidencing completion of the work. The time of Close-out is recognized to be directly related to "Substantial Completion," and therefore may be a single time period for the entire Work. The time variation, if any, shall be applicable to other provisions of this Section, regardless of whether resulting from "phased completion" originally specified by the Contract Documents or subsequently agreed upon by the Implementation Manager, Engineer, and the Contractor.

#### 1.03 SUBMITTAL PROCEDURES:

- A. After the Contractor receives an executed copy of "A Notice of Substantial Completion" for the Project, it shall, in order to insure an orderly and efficient transfer of the Project to the Owner, prepare, assemble and transmit the documents, brochures and drawings herein required in one package. Piecemeal delivery of separate elements of the documents will not be accepted.
- B. Unless additional quantities are specified elsewhere, submit items in triplicate (3 copies).

#### 1.04 SUBSTANTIAL COMPLETION:

- A. The Implementation Manger and Engineer shall observe the Work for substantial completion acceptance upon written request by the Contractor at least (10) days before the anticipated date of the observation visit.
- B. The Implementation Manager and Engineer shall review the Work and prepare a punch list of items to be repaired or replaced. This shall be issued to the Owner and Contractor.
- C. When the Contractor has stated the Punch List items have been completed, has issued the record drawings to the Implementation Manager and Engineer, and has set a date for an observation visit, the Implementation Manager and Engineer will repeat the observation visit for final acceptance. The Implementation Manager and Engineer will review the Contractor's record drawings set for approved, marked changes and variations from the original contract drawings.
- D. If items on the punch list have not been completed satisfactorily to the Implementation Manager and Engineer, a final punch list will be prepared by the Implementation Manager and Engineer and issued to the Contractor.

1.05 FINAL ACCEPTANCE:

A. Prior to requesting the Implementation Manager and Engineer's final observation visit for Certification of Final Acceptance and Final Payment, the Contractor shall complete the following and list known exceptions:

1. Submit a copy of the Final Punch List, stating that each item has been completed or otherwise resolved for acceptance. The Implementation Manager and Engineer will repeat the observation visit when requested by the Contractor to review completion of Final Punch List. If the Contractor requests an observation visit and previously indicated items to correct have not been addressed, the Contractor will be responsible for the incurred expenses of the Implementation Manager and Engineer for such observation visits.
2. Perform final cleaning as specified in the Site Cleaning section.
3. Submit required Close Out Submittals listed herein.
4. Submit final payment request with final releases and reports not previously submitted and accepted.

B. CLOSE-OUT SUBMITTALS:

1. Statutory Affidavit (Contractor): Before final acceptance of the Work, the Contractor shall furnish a Statutory Affidavit in the exact form as attached to this section.
2. Notice of Substantial Completion and Certificate of Completion (Final): A notice of Substantial Completion for the Project will be prepared by the Implementation Manager and Engineer for the purpose of establishing a date when the Project is sufficiently complete and suitable for the use it is intended, including identification of a Punch-List. Submit a Certificate of Completion (Final) on final observation of the Project verifying that Punch-List items are complete, and that all closing documents are in order, as shown by the accompanying Project Close-Out Check-Off List, that all final payments are in order, and establishing a Date of Final Acceptance.
3. Record Drawings and Specifications: Submit record drawings and specifications as specified in Project Record Documents section. Secure Implementation Manager's and Engineer's review and acceptance of documents.
4. Maintenance and Operations Manuals: Submit organized and assembled bound loose-leaf maintenance and operations manuals for planting, concrete brick pavers, and concrete interlocking pavers, and as otherwise required in the specifications. Bind in individual heavy-duty, two-inch, three-ring binders, with pocket folders for folded sheet information and dividers with labeled index tabs. Label each manual on front and spine of binding indicating name of project, and nature of information. Include in manuals the following:
  - a. Name, address and phone numbers of:
    - i. Contractor
    - ii. Local supplier
  - b. Spare parts list
  - c. Warranties

- d. Inspection procedures
  - e. Recommended maintenance cycles
  - f. Cleaning requirements and instructions
  - g. Shop drawings and product data
5. Material and services lists: Submit list of suppliers who provided materials and services for the project. Indicate company names, addresses, phone numbers and personnel to contact in case of problems or for information. List shall be typed in a legible and organized format.
  6. Any Federal Close Out forms presented and documentation requested.
  7. Contract Close Out Forms Provided: At Project completion, complete the following: Contract Close Out Check-Off List, Contract Close Out Statutory Affidavit, and Contract Close Out Certificate of Completion (Final).

CONTRACT CLOSE-OUT  
CHECK-OFF LIST

<u>DOCUMENTS</u>	<u>COPIES REQD</u>	<u>NO. OF COPIES</u>	<u>DATE RECEIVED</u>
Statutory Affidavit	<u>3</u>	_____	_____
Contract Closeout	<u>3</u>	_____	_____
Record Drawings and Specifications	<u>3</u>	_____	_____
Maintenance Instructions & Manual	<u>3</u>	_____	_____
Punch-List Items Completed	<u>3</u>	_____	_____
Notice of Substantial Completion	<u>3</u>	_____	_____
Certificate of Completion (Final)	<u>3</u>	_____	_____
Certificate of Final Payment to Contractor	<u>3</u>	_____	_____
Contractor's Affidavit of Payment of Debts and Claims, AIA G706	<u>3</u>	_____	_____
GDOT Materials Certification letter	<u>3</u>	_____	_____
Final DBE form	<u>3</u>	_____	_____

I certify that, being familiar with the Contract Documents for this Project, to the best of my knowledge, the items checked off hereinabove constitute all that are applicable to this Project.

Date Submitted to the Implementation Manager \_\_\_\_\_

Date Submitted to the Engineer: \_\_\_\_\_

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Implementation Manager

\_\_\_\_\_  
By

\_\_\_\_\_  
By

\_\_\_\_\_  
Engineer

\_\_\_\_\_  
By

**CONTRACT CLOSE-OUT  
STATUTORY AFFIDAVIT**

STATE OF \_\_\_\_\_ COUNTY OF \_\_\_\_\_

FROM \_\_\_\_\_

(Contractor)

TO: \_\_\_\_\_

RE: Contract entered into the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, between

the abovementioned parties for the construction of \_\_\_\_\_

\_\_\_\_\_ at \_\_\_\_\_

**KNOW ALL BY THESE PRESENTS:**

1. The undersigned hereby certifies that all Work required under the above contract has been performed in accordance with the terms thereof, that all material-persons, subcontractors, mechanics, and laborers have been paid and satisfied in full, and that there are no outstanding claims of any character arising out of the performance of the contract which have not been paid and satisfied in full.
2. The undersigned further certifies that to the best of his or her knowledge and belief there is no unsatisfied claims for damages resulting from injury or death to any employees, subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for other damage of any kind, nature, or description which might constitute a lien upon the property of the Owner.
3. The undersigned makes this affidavit as provided by law and for the purpose of receiving final payment in full settlement of all claims arising under or by virtue of the contract, and acceptance of such payment is acknowledged as a release of the Implementation Manager and Engineer from any and all claims under or by virtue of the contract.

IN WITNESS WHEREOF, the undersigned has signed and sealed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Personally appeared before the undersigned, \_\_\_\_\_ who, after being duly sworn, depose(s) and say(s) that the facts stated in the above affidavit are true.

\_\_\_\_\_  
Notary Public

This \_\_\_\_\_ date of \_\_\_\_\_, 20\_\_\_\_.

My commission expires \_\_\_\_.



**CONTRACT CLOSE-OUT  
CERTIFICATE OF COMPLETION (FINAL)**

PROJECT NAME: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ (Name, Address)

\_\_\_\_\_  
\_\_\_\_\_

TO: (Implementation Manager)

Date of Contract: \_\_\_\_\_ Date  
of This Certificate: \_\_\_\_\_ Source  
of Funds: \_\_\_\_\_

**THIS CERTIFICATE COVERS THE ENTIRE PROJECT UNDER THE INTERSECTION IMPROVEMENT  
CONSTRUCTION CONTRACT**

By execution of this document, the Contractor, Implementation Manager, and Engineer each certify that the work performed under this Contract has been reviewed at a Final Observation on \_\_\_\_\_, and found to be complete as verified by the attached project Close-Out Check-Off list, and the Owner accepts the Project as complete on the last date of this Certificate. Final payment to the Contractor is authorized. Execution and acceptance of this Certificate by the Owner, shall in no way waive or void any conditions of the Contract Documents.

A notice of Substantial Completion has been issued establishing \_\_\_\_\_, as the date of occupancy and the commencement of all Warranties and Guarantees required by the Contract Documents. The Owner assumed responsibility for insurance, utilities and routine maintenance, as of \_\_\_\_\_.

\_\_\_\_\_  
CONTRACTOR BY DATE

\_\_\_\_\_  
IMPLEMENTATION MANAGER BY DATE

\_\_\_\_\_  
ENGINEER BY DATE

END OF SECTION

## SITE CLEANING

### PART 1 - GENERAL

#### 1.01 SCOPE:

- A. This Section covers, as a direct result of Intersection Improvement Construction, the minimum work standards of site cleanliness, cleanup frequency, equipment, materials, and labor needed to maintain site conditions in a neat, tidy, and safe manner.
- B. The Contractor shall refer to other Specification Sections for specific Section cleanup requirements, which supplement this Section.
- C. The Contractor shall be responsible for the proper disposal and related expenses incurred for debris, waste materials, rubbish, and plant trimmings generated by his Work or workers under this Contract.
- D. If Contractor fails to maintain a Project or to clean up prior to date of Substantial Completion, the Implementation Manager may do so after giving written notice to the Contractor and the cost will be charged to the Contractor.

#### 1.02 WORK NOT INCLUDED:

- A. The Contractor's Work shall not include, unless directly soiled by the Contractor or workers:
  - 1. Building interior or exterior surfaces, including windows, floors, and building finishes.
  - 2. Pavement power washing.
  - 3. Debris, rubbish, waste materials, and other trash disposal generated by others.

#### 1.03 DEFINITIONS:

- A. Clean: For the purpose of this Section and except as specifically provided otherwise, clean shall be interpreted as meaning free from dust, soil, rocks, and other debris material capable of being removed by use of reasonable effort, a backpack blower, shovels, rakes, and hand-held brooms.

#### 1.04 QUALITY ASSURANCE:

- A. While Work is being performed, the Contractor shall conduct daily inspections prior to day's end to verify cleanliness requirements are being and have been met.
  - B. The Contractor shall comply with any and all pertinent requirements of governmental agencies having jurisdiction, in addition to the requirements of this Section.
  - C. No site debris, rubbish, rocks, or waste materials shall be buried or burned within the job site. D.
- No cleaning materials, equipment, or vehicles will be permitted that will harm or damage humans, vegetation, animals, the environment, soil, or the Project finishes.

- E. Cleaning, blowing, or washing that will cause damage to adjacent or freshly finished surfaces, such as wet paint, concrete, or caulking, shall be performed only after surfaces have dried or cured.
- F. The Contractor shall be responsible for the repair or replacement of items damaged by his Work's cleanup operations.

## PART 2 - PRODUCTS

### 2.01 MATERIALS AND EQUIPMENT:

- A. The Contractor shall provide brooms, blowers, rakes, shovels, hoses, tools, and all other items necessary for proper execution of cleanup operations described in this and other Specification Sections.
- B. Only cleaning materials, which are compatible with the surface being cleaned, as recommended by the product manufacturer, shall be used for cleanup Work.

## PART 3 - EXECUTION

### 3.01 STORED ITEMS:

- A. The Contractor shall retain stored items in an orderly arrangement, allowing maximum access, not impeding traffic, not altering drainage, and providing required protection of stored items and materials.
- B. The Contractor shall be responsible for adequate containers and storage for all items generated by this Contract awaiting removal from the job site.
- C. No items shall be stored or left uncontained that will cause fire, or harm in any way humans, the environment, equipment, other Project Work, or items on or off site.
- D. The Contractor shall at least twice a week, or more often if necessary, completely remove all dead vegetation, debris, scrap, and waste material from the job site.

### 3.02 PROGRESS CLEANING:

#### A. Task-to-Task Cleaning:

- 1. As required preparatory to installation of succeeding materials or tasks, the Contractor shall clean the structures, surfaces, areas, or pertinent portion thereof to the degree of cleanliness as not to hinder or harm Work or workers.

#### B. Daily Cleaning:

- 1. During on-site Work, the Contractor shall on a daily basis or more frequently pick-up all tools, scrap, equipment, debris, and waste material generated by Work in this Contract.
- 2. The Contractor shall neatly stack or deposit equipment, materials, and tools that remain on-site in the area designated by the Implementation Manager for their storage. At the time of bidding this project, there are no provisions for on-site storage.

3. Debris and waste materials shall be removed from any area, which prevents or hinders pedestrians and the Work of another Contractor.

C. Weekly Cleaning:

1. On a weekly basis, or more frequently if necessary, the Contractor shall inspect materials installed or stored on the job site.
2. The Contractor shall sweep first, then blow by backpack blower, paved surfaces within and adjacent to his Work.
3. The Contractor shall properly dispose off site all debris, dead or damaged plants, and scrap material collected during the week, or more frequently if necessary.

3.03 FINAL CLEANING:

- A. Prior to completion of Work and Preliminary Project Walk-through, the Contractor shall remove from the job site all temporary tags, tools, unnecessary labels, surplus material, equipment, scrap, debris, trimmings and waste generated by Intersection Improvement Construction.
- B. Unless otherwise specifically directed by the Implementation Manager and Engineer, the Contractor shall broom clean paved areas, blow by backpack blower, and completely remove resultant debris resulting from the result of the Intersection Improvement Construction.
- C. The Contractor shall schedule final cleaning, as approved by the Implementation Manager, to enable the Implementation Manager to accept a completely clean Improvement of sidewalks, curbing and street lighting .
- D. Upon completion of the Implementation Manager and Engineer's Punch List items, the Contractor shall repeat Final Cleaning as necessary in areas soiled prior to Implementation Manager and Engineer's Final Site Acceptance.

END OF SECTION

**PROJECT RECORD DOCUMENTS**

## PART 1 - GENERAL

## 1.01 SCOPE:

- A. This Section includes provisions and requirements for maintaining Field and Final Project Record Drawings and specifications for duration of construction.
- B. Project Record Documents shall be maintained by the appropriate Contractor for all Project Construction as described in Section 01010 of these Specifications.

## 1.02 SUBMITTALS:

- A. Project Record Drawings: Submit complete undamaged bound set of prints of Contract Drawings with recorded modifications and As-Built installations as part of Contract Close-Out Documents.
- B. Final Project Record Specifications: Submit complete undamaged bound set Project Manual with recorded modifications as part of Contract Close-Out Documents.
- C. If Final Project Record Sets of Contract Drawings and the Project Manual are damaged, soiled, illegible and unacceptable in the opinion of the Engineer, a new set of documents will be provided to Contractor upon request. Transfer recorded data onto set provided or another complete, undamaged, unsoiled set that Contractor may have in its possession for submittal as specified.

## 1.03 QUALITY ASSURANCE:

- A. Assign responsibility to one person on Contractor's staff, if not the Contractor, to maintain Project Record Documents throughout duration of project.
- B. Prior to submittal of Project Record Documents, enter name and dated signature of person responsible for maintaining project record documents on title sheet on Contract Drawings and cover of Project Manual attesting to the accuracy, completeness and correctness of data recorded.
- C. Prior to submittal of monthly Application for Payment, request the Implementation Manager to review current conditions of Field Record Documents. Failure to maintain Field and Record Documents in a current, up-to-date condition may be considered a justifiable reason for withholding payment until documents are properly updated as required by this Section.

## PART 2 - PRODUCTS

## 2.01 DOCUMENTS:

- A. Field Set: Promptly following receipt of Implementation Manager's Notice to Proceed, request from the Engineer, at no charge to the Contractor, one complete set of all Contract Documents.

- B. Final Record Documents: At a time nearing the completion of Work, request from the Engineer, at no charge to the Contractor, one complete set of electronic files of all Drawings.

### PART 3 - EXECUTION

#### 3.01 GENERAL REQUIREMENTS:

- A. After Award of Contract, secure from Engineer one complete set of Contract Drawings and Project Manual to be established as Field Project Record Documents. Identify documents by stamping each sheet of Contract Drawings and cover of Field Project Manual with the title "RECORD DOCUMENTS - JOB SET" in red.
- B. All changes to the Work shall be duly recorded on a daily or continuous basis to provide accurate information relative to the Work as constructed in the field, both visible and concealed, such as actual below grade depths, location descriptions, and material crossings. Field Record Documents shall be maintained on the jobsite or with the Prime Contractor for reference review at any time by the Implementation Manager and Engineer.
  - 1. The Engineer shall supply one electronic set of the following Project Documents to the Prime Contractor to be maintained for the Field Record Documents:
    - a. Drawings (Full sized set)
    - b. Specifications
    - c. Addenda (if any)
- C. Maintain record documents at job site with accurate record of modifications and as-built conditions. Coordinate modifications and existing conditions in variance with Contract Documents making adequate and proper entries recorded on project record set.
- D. Do not use Field Project Record Document set for construction purposes. Protect Field Record Documents from loss, damage or deterioration in a secure location, safe from potential fire hazard. Provide access to record documents to the Implementation Manager and Engineer for review or reference during normal working hours.
- E. Make entries on Field Record Documents using (a) colored pencil(s) or pen(s). The Contractor may use different colors to distinguish variations in changes as required. Describe modifications, deviations and as-built conditions by clear, concise notes and graphic representations. Date all entries. Make entries as work is being performed or completed throughout duration of construction immediately after receipt of information.
- F. Contact the Implementation Manager and Engineer on a current basis, of all changes in the Work made during the construction affecting the Intersection Improvement Construction.

#### 3.02 FIELD RECORD DRAWINGS:

- A. Maintain complete set of clean, unsoiled and undamaged bound prints of Contract Drawings for recording actual project conditions and installations.
- B. Mark drawings as work progresses to indicate the following:
  - 1. Actual installation of work varying with Contract Documents.
  - 2. Existing conditions in variance with Contract Documents.

3. Construction change directives or written orders issued affecting the Work as related to Contract Drawings.
4. Change Order modifications with corresponding identification number.
5. Addenda issued affecting Contract Drawings.
6. Cross-references to supplemental drawings issued marked at corresponding locations on Contract Drawings.
7. Corrections or changes in dimensions or locations of elements in the Project.
8. Concealed elements that would be difficult to measure and record at a later date.

### 3.03 PROJECT RECORD SPECIFICATIONS:

- A. Maintain complete set of clean, unsoiled and undamaged bound copy of the Field Project Manual, including Addenda, Change Orders, Construction Change Directives and written orders issued, for recording actual project installations and modifications.
- B. Mark in Field Project Manual as work progresses to indicate the following:
  1. Variations in actual work performed in comparison with text of Specifications and Modifications.
  2. Addenda issued affecting Project Manual.
  3. Change Order modifications as applicable with corresponding identification numbers.
  4. Construction change directives or written orders issued affecting the Work as related to the Project Manual.
  5. Actual materials or products installed where selection is required. Enter substitutions if selected, where applicable.
  6. Record actual materials or products installed in appropriate paragraphs in specification sections where specified by reference standard, performance or description.
  7. Cross-references to supplemental drawings issued where applicable.

### 3.04 FINAL RECORD DOCUMENTS:

- A. When the Work is nearing completion, the Contractor shall request from the Engineer an electronic set (DGN preferred) of Project Drawings to be used to transfer all As-Built changes from the Field Record Documents to these Final Record Drawings.
- B. All As-Built changes shall be clearly transferred to the electronic set indicating areas by "clouds" and date of change.
- C. If Field Record Specifications have been kept reasonably clean and in order, they shall be used as the Final Project Record Specifications.
- D. If the Field Record Specifications are reviewed by the Implementation Manager and Engineer and are not in a proper or easily read condition, the Engineer shall issue a clean set of specifications to the contractor for transfer of Field changes into the new copy. The Contractor shall be responsible for the reproduction cost for the clean set.

### 3.05 FINAL REVIEW:

- A. Upon completion of transfer of As-Built information to Final Record Documents, submit Final Drawings (in PDF and DGN format), Specifications, and any other Final Record items, to the Engineer for review. The Contractor shall attend any review meetings as may be required to correct or clarify submitted information.
- B. The Contractor shall make all required corrections and changes to the Final Record

Documents and promptly deliver completed Documents for the Engineer's final review and transfer to the Implementation Manager for his or her final records.

END OF SECTION



## SELECTIVE DEMOLITION

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section

### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Demolition and removal of selected site elements.
  - 2. Repair procedures for selective demolition operations
- B. Related Sections include the following:
  - 1. Division 1 Section "Summary" for use of the premises and phasing requirements.
  - 2. Division 2 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements.
  - 3. Division 16 Sections for demolishing, cutting, patching, or relocating electrical items.
  - 4. GDOT Standard Specifications for Construction of Transportation Systems (2013 Edition) Sections 201, 205, 209, 210, 214, and 215.

### 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

### 1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

### 1.5 SUBMITTALS

- A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.

- B. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
  - 2. Interruption of utility services.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Locations of temporary partitions and means of egress
  - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- D. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- E. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

#### 1.6 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Professional Engineer Qualifications: Comply with Division 1 Section "Quality Requirements."
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.
- E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
  - 1. inspect and discuss condition of construction to be selectively demolished.
  - 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

#### 1.7 PROJECT CONDITIONS

- A. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
  - 1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- B. Owner assumes no responsibility for condition of areas to be selectively demolished.
  - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Legacy Streetcar tracks may be encountered along the corridor. Refer to the following sections for documentation and disposal instruction:

1. Special Provision Section 609 – HABS/HAER Level II Documentation and Photography of Historic Streetcar Tracks
2. Special Provision Section 610 – Creosote Tie Disposal

## PART 2 - PRODUCTS

### 2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
  1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  2. Use materials whose installed performance equals or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

### 3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
  1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.
  1. Arrange to shut off indicated utilities with utility companies.
  2. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
  3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

### 3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
  2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
  3. Protect existing site improvements, appurtenances, and landscaping to remain.
  4. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

### 3.4 POLLUTION CONTROLS

- A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
  2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  5. Dispose of demolished items and materials promptly.
  6. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

- B. Existing Facilities: Comply with construction manager's requirements for using and protecting stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.
- C. Removed and Salvaged Items: Comply with the following:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by owner.
  - 5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items: Comply with the following:
  - 1. Clean and repair items to functional condition adequate for intended reuse.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Protect items from damage during transport and storage.
  - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- F. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

### 3.6 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
  - 1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.
- C. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

### 3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION

**DEPARTMENT OF  
TRANSPORTATION STATE OF  
GEORGIA  
SUPPLEMENTAL SPECIFICATION**

**Section 107 – Legal Regulations and Responsibility to the  
Public**

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*Delete Section 107 and Substitute the following:*

**107.01 Laws to Be Observed**

The Contractor shall keep fully informed of all Federal and State laws, all local laws, ordinances, codes, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on The Work, or which in any way affect the conduct of The Work. The Contractor shall at all times observe and comply with all such laws, ordinances, codes, regulations, orders, decrees, and permits; and shall protect and indemnify the Department and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, code, regulation, order, decrees, and permits, whether by himself, his employees, subcontractors, or agents.

**107.02 Permits and Licenses**

The Contractor shall procure all permits and licenses, pay all charges, taxes, and fees, and give all notices necessary and incidental to the due and lawful prosecution of The Work.

**107.03 Patented Devices**

If the Contractor employs any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the Surety shall indemnify and save harmless the Department from any and all claims for infringement by reason of the use of any such patented design, device, material, or process, or any trademark or copyright, and shall indemnify the Department for any costs, expenses, and damages which it may be obliged to pay by reason of any infringement, at any time during the prosecution or after the completion of The Work.

**107.04 Restoration of Surfaces Opened By Permit**

The right to construct or reconstruct any utility service in the highway or street and to grant permits for the same at any time, is expressly reserved by the Department for the proper authorities of the municipality or county in which The Work is done and the Contractor shall not be entitled to any damages either for the digging up of the street or highway, or for any delay occasioned thereby.

Any individual, firm, or corporation wishing to make an opening in the street or highway must secure a permit from the Department. The Contractor shall allow parties bearing such permits, and only those parties, to make openings in the street or highway. When ordered by the Engineer, the Contractor shall make in an acceptable manner all necessary repairs due to such openings and such necessary work will be paid for as Extra Work, or as provided in the Specifications, and will be subject to the same conditions as original work performed.

**107.05 Federal-Aid Provisions**

When the United States Government pays all or any part of the cost of a project, the Federal laws and the rules and regulations made pursuant to such laws must be observed by the Contractor, and The Work shall be subject to the

inspection of the appropriate Federal agency. Such inspection shall in no sense make the Federal Government a party to this Contract and will in no way interfere with the rights of either party hereunder.

### **107.06 Sanitary Provisions**

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the State Department of Health and other authorities having jurisdiction, and shall permit no public nuisance.

### **107.07 Public Convenience and Safety**

The Contractor shall at all times so conduct The Work as to assure the least possible obstruction of traffic. The safety and convenience of the general public and the residents along the highway and the protection of persons and property shall be provided for by the Contractor as specified under Subsection 104.05, Subsection 107.09, Section 150, the Project Plans, and Special Provisions.

Traffic whose origin and destination is within the limits of the Project shall be provided ingress and egress at all times unless otherwise specified in the Plans or Special Provisions. The ingress and egress includes entrance and exit via driveways at the various properties, and access to the intersecting roads and streets. The Contractor shall maintain sufficient personnel and equipment on the project at all times, particularly during inclement weather, to ensure that ingress and egress are provided when and where needed.

Two-way traffic shall be maintained at all times unless otherwise specified or approved. The Contractor shall not stop traffic without permission granted by the Engineer.

All equipment used on The Work shall come equipped with factory-installed mufflers, or manufacturer's recommended equivalent, in good condition. These mufflers shall be maintained in good condition throughout the construction period.

### **107.08 Railroad-Highway Provisions**

All work to be performed by the Contractor on a railroad company's right-of-way or property shall be done in a manner satisfactory to the chief engineer of the railroad company, or his authorized representative, and shall be performed at such times and in such manner as not to unnecessarily interfere with the movement of trains or traffic upon the track of the railroad company. The Contractor shall use all reasonable care and precaution in order to avoid accidents, damage, or unnecessary delay or interference with the railroad company's trains or other property, or property of tenants of railroad company.

The Contractor shall notify the railroad company and obtain its approval before commencing work on the railroad company's right-of-way or property.

The Contractor shall determine what measures are required by the railroad company to protect its operations and right-of-way or property during construction. Such protection may include the use of a flagger or flaggers provided by the railroad company. The Contractor shall be responsible for ensuring that the required protection is provided and shall pay the railroad company directly for any and all such services which may be required to accomplish the construction unless otherwise specified.

Any temporary grade crossings or other means needed during construction by the Contractor for transporting materials of any nature and/or equipment across the railroad tracks will be the responsibility of the Contractor to handle directly with the railroad company and bear all costs incidental to such crossings including flagging services provided by the railroad company.

A "Special Provisions for the Protection of Railroad Interests" may be included in the proposal to stipulate insurance and other requirements of the railroad company.

### **107.09 Barricades and Danger, Warning, and Detour Signs**

The Contractor shall furnish, install, and maintain all necessary and required barricades, signs, and other traffic control devices in accordance with these Specifications, Project Plans, Special Provisions, and the MUTCD, and take all necessary precautions for the protection of the work and safety of the public.

Unless otherwise specified, all traffic control devices furnished by the Contractor shall remain the property of the Contractor.

## **107.10 Forest Protection**

In carrying out work within or adjacent to State or National Forests, or any other forests, parks, or other public or private lands, the Contractor shall obtain necessary permits and comply with all of the regulations of the appropriate authorities having jurisdiction over such forest, park, or lands. The Contractor shall keep the areas in an orderly condition, dispose of all refuse, obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks, and other structures in accordance with the requirements of the appropriate authority.

The Contractor shall take all reasonable precautions to prevent and suppress forest fires and shall require his employees and subcontractors, both independently and at the request of forest officials, to do all reasonably within their power to prevent and suppress and to assist in preventing and suppressing forest fires; to notify a forest official at the earliest possible moment of the location and extent of any fire seen by them; and to extinguish or aid in extinguishing nearby fires.

## **107.11 Construction Over or Adjacent to Navigable Waters**

### **A. Navigation to Be Protected**

Since navigable waterways are under the jurisdiction of the United States Coast Guard and/or the United States Army Corps of Engineers, all work done in, over, on or adjacent to such waters shall comply with their requirements. Free navigation shall not be impeded, and navigable depths shall be maintained.

The Contractor shall comply with permits issued by the United States Coast Guard and/or the United States Army Corps of Engineers, and the Contractor shall obtain and comply with other permits in accordance with the requirements of Subsection 107.02

Special Provisions for environmental protection may be included in the proposal to stipulate environmental commitments and other requirements.

### **B. Obstructions to be Removed**

When the construction has progressed enough to permit removal, all falsework, piling and other obstructions shall be removed to the satisfaction of the Federal agency having jurisdiction. In all cases such clearing must be done thoroughly before The Work will be accepted by the Department.

## **107.12 Use of Explosives**

When the use of explosives is necessary for the prosecution of The Work, the Contractor shall exercise the utmost care not to endanger life or property, and shall obey all State, Federal and other Governmental regulations applying to transportation, storage, use, and control of such explosives. The Contractor shall be completely responsible for any and all damage resulting from the transportation, storage, use, and control of explosives in the prosecution of The Work by the Contractor, the Contractor's agents, or employees; and shall hold the Department harmless from all claims of damages resulting in any manner therefrom.

The Contractor shall notify each public utility owner having structures or other installations, above or below ground, near the site of The Work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the utility owners to take such steps as they may deem necessary to protect their property from injury. Such notice shall not relieve the Contractor of responsibility for all damages resulting from his blasting operations.

All explosives shall be stored securely in compliance with all laws and ordinances, and all such storage places shall be clearly marked DANGEROUS EXPLOSIVES. Explosives and detonators shall be stored in separate storage facilities in separate areas. Where no laws or ordinances apply, locked storage shall be provided satisfactory to the Engineer, never closer than 1,000 ft (300 m) from any travel-road, building, or camping area.

In all cases where the transport, storage, or use of explosives is undertaken, such activities shall be controlled and directed by fully qualified representatives of the Contractor.

Whenever electric detonators are used, all radio transmitters shall be turned off within a radius of 500 ft (150 m). No blasting supplies shall be transported in vehicles with two-way radio unless the transmitter is turned off, or extra shielding precautions are taken. Appropriate signs shall be placed so as to give ample warning to anyone driving a vehicle equipped with two-way radio. Electrical detonators will not be used within 500 ft (150 m) of a railroad.



Submit a blasting plan to the Engineer a minimum of five working days prior to use of explosives that provides details of the proposed blasting plan, including, but not limited to, the type and amount of explosives, the shot sequence, the description of and distance to the closest inhabitable structure, and other information as requested by the Engineer. Submission of blasting plan does not relieve the contractor of the responsibility for the adequate and safe performance of the blasting.

## **107.13 Protection and Restoration of Property and Landscape**

### **A. General Provisions**

The Contractor shall be responsible for the preservation of all public and private property, crops, fish ponds, trees, monuments, highway signs and markers, fences, grassed and sodded areas, etc. along and adjacent to the highway, and shall use every precaution necessary to prevent damage or injury thereto, unless the removal, alteration, or destruction of such property is provided for under the Contract. The Contractor shall use suitable precaution to prevent damage to all underground structures, whether shown on the Plans or not, and shall protect carefully from disturbance or damage, all land monuments and property marks until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed. The Contractor shall not willfully or maliciously injure or destroy trees or shrubs, and he shall not remove or cut them without proper authority.

The Contractor shall be responsible for all sheet piling, shoring, underpinning, etc., as may be required for the protection of abutting property, nearby buildings, streets, and the like.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of The Work, resulting from any act, omission, neglect, or misconduct in his manner or method of executing The Work, or at any time due to defective work or materials, and said responsibility will not be released until the Project shall have been completed and accepted.

When the Contractor's excavating operations encounter remains of prehistoric people's dwelling sites or artifacts of historical or archeological significance, the operations shall be temporarily discontinued. The Engineer will contact archeological authorities and the Office of Environmental Services to determine the disposition thereof. When directed by the Engineer, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and shall remove them for delivery to the custody of the proper authorities. Such excavation will be considered and paid for as Extra Work.

When the Contractor's normal operations are delayed by such stoppage or extra work, an appropriate time extension will be granted.

The Contractor shall plan, coordinate, and prosecute the work so that disruption to personal property and business is held to a practical minimum.

No resident or business shall be denied vehicular access to their property for any length of time other than as determined by the Engineer is absolutely necessary. Where two or more existing driveways are present for a business, only one existing driveway shall be closed at any time. All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of each drainage structure or section of curb and gutter, sidewalk, or driveway shall be accomplished as soon as adequate strength is obtained. Finishing, dressing, and grassing shall be accomplished immediately thereafter as a continuous operation within each area being constructed with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

Handwork, including raking and smoothing, shall be required to ensure that roots, sticks, rocks, and other debris are removed in order to provide a neat and pleasing appearance. Grassing, when in season, shall immediately follow in order to establish permanent cover at the earliest date. If grassing is not in season, proper erosion control shall be installed and maintained.

The work described above shall be in addition to that required by Subsection 104.07, "Final Cleaning Up" and Subsection 105.16, "Final Inspection and Acceptance".

## **B. Erosion and Siltation Control**

The Contractor shall take all necessary measures throughout the life of the Project to control erosion and silting of rivers, streams, and impoundments (lakes, reservoirs, etc.). Construction of drainage facilities as well as performance of other Contract work which will contribute to the control of erosion and siltation shall be carried out in conjunction with clearing and grubbing, and earthwork operations as stipulated in Section 161.

## **C. Pollution**

The Contractor shall exercise every reasonable precaution throughout the life of the Contract to prevent pollution of rivers, streams or impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage and other harmful waste shall not be discharged into or alongside rivers, streams, and impoundments, or into natural or manmade channels leading thereto. The Contractor shall also comply with the applicable regulations of other State and Federal departments and to all governmental statutes relating to the prevention and abatement of pollution.

## **D. Insect Control Regulations**

The Plant Pest Control Division of the U.S. Department of Agriculture and the Georgia State Department of Agriculture restrict the movement of certain items from areas infested with Japanese Beetles or Imported Fire Ants so as to prevent the spread of these pests to non-infested areas. Where insect infested areas are shown on the Plans, Contractors will control their operations in such a manner as to comply fully with the requirements of Section 155.

## **E. Reclamation of Material Pits and Waste Disposal Areas**

Whenever or wherever the Contractor obtains material from a source or wastes material on an area other than within the Right-of-Way, regardless of the fashion, manner or circumstances for which the source or area is obtained, it shall be reclaimed in accordance with the requirements of Section 160.

## **F. Mailboxes**

The property owner shall have the responsibility for removing and relocating the mailbox to an area outside construction limits.

The Engineer will mark a point for the relocation of the box. The stake should be set so that the location of the box will be convenient to both the mail carrier and the patron, yet not interfering with the proposed work. It may be necessary for the Engineer to confer with the Post Office serving the area.

The Contractor shall notify each affected owner, in writing, that their mailbox is in conflict with the proposed construction, that they have ten days to relocate the box and that, after the expiration of the 10 days' notice, if the owner has not relocated the box, it shall be removed by the Contractor and laid upon the owner's property, clear of the Right-of-Way.

Any cost to the Contractor for removing the mailboxes as stated above shall be included in the price bid for other items.

## **G. Failure to Comply**

Failure of the Contractor to comply with any of the above provisions or to install erosion prevention items included in the Contract at the time specified, will be evidence of omission and neglect, and the Contractor will be liable for damages as outlined in Subsection 107.13.H below. Furthermore, the Engineer shall withhold payment on all Contract Items until such time as the Contractor complies in full with all of the aforesaid provisions.

## **H. Payment for Damages**

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work, or in consequence of the nonexecution thereof by the Contractor, the Contractor shall restore, at his own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring as may be directed, or shall make good such damage or injury in an acceptable manner.

## **I. Compensation**

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

### **107.14 Load Restrictions**

It is hereby agreed between the Department and the Contractor that in the performance of The Work under the Contract, the following load restrictions and stipulations shall be in full force and effect during the life of the Contract:

#### **A. Parties Affected**

The load restrictions and stipulations contained herein shall be applicable to the equipment of the Contractor; each agent or subcontractor employed by the Contractor; and each person or persons, firm, partnership, corporation or any combination thereof, hauling materials, supplies or equipment to or on the Project, by or for the Contractor.

#### **B. Within Project Limits**

No hauling equipment which is loaded beyond those limits provided by State Law shall be permitted on any portion of the new or existing pavement structure except that such loads will be permitted on nonstabilized bases and subbases prior to placing roadway paving subject to the provisions of Subsection 107.17.

Axle loads and gross weight limits will be evaluated in accordance with current Georgia Law.

All damage caused by any equipment to any permanent installation or portion of The Work shall be promptly repaired by the Contractor at his expense. When it becomes necessary to cross existing pavement with excessive loads, the Contractor shall provide and remove, at his own expense, proper cushioning by means of earth blanket or otherwise as directed.

#### **C. Outside Project Limits**

All equipment users included in Subsection 107.14.A, above, operating equipment on roads outside the Project limits shall be governed by the following regulations:

1. No vehicle shall carry any load in excess of that specified by Georgia Law.
2. On County System roads the maximum total gross weight shall not exceed 56,000 lbs. (25,400 kg) unless a vehicle is making a pickup or delivery on such roads.
3. For a specific individual trip the above weight limitations may be exceeded provided a special permit is obtained from the Department for each such movement. A special permit will not relieve the Contractor of liability for damage that may result from such a movement. Refer to O.C.G.A §32-6-26 Weight of Vehicle and Load, SB54 (2011) for compliance with weight limitations and exceptions.
4. Authorized personnel of the Department of Public Safety shall be permitted to weigh each truck hauling material to the Project whenever the Department so desires. The owner of each truck shall instruct his operators to cooperate with and assist the truck weighers in every way possible.
5. A Certified Public Weigher operating under the provisions of Standard Operating Procedure 15 shall not dispatch any vehicle loaded with material to be incorporated into the Project when the gross vehicle weight exceeds the limit established by law.
6. Ready Mix Concrete trucks shall comply with load restrictions as specified in Laboratory Standard Operating Procedure 10, "Quality Assurance for Ready-Mixed Concrete Plants in Georgia."

#### **D. Responsibilities**

It will be the responsibility of the Contractor to advise his personnel, and all equipment users included in Subsection 107.14.A, as to the load restrictions and stipulations contained herein.

#### **E. Excess Loads and Violations**

If multiple violations assignable to a given Certified Public Weigher are occurring, that Certified Public Weigher may be suspended from weighing materials dispatched to Department of Transportation projects.

### **107.15 Responsibility for Damage Claims**

The Contractor shall indemnify and save harmless the Department, its officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the said Contractor; or on account of or in consequence of any neglect in safe-guarding The Work; or through use of unacceptable materials in constructing The Work; or because of any act of omission, neglect or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the Workmen's Compensation Act, or any other law, ordinance, order, or decree; and so much of the money due the said Contractor under and by virtue of his Contract as may be considered necessary by the Department for such purpose may be withheld for the use of the State; or, in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the Department; except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he is adequately protected by public liability and property damage insurance.

### **107.16 Opening Sections of Project to Traffic**

Whenever any bridge or section of roadway is in acceptable condition for travel, the Engineer may direct that it be opened to traffic, whether or not the opening was originally provided for, and such opening shall not be held to be in any way an acceptance of the bridge or roadway, or any part thereof, or as a waiver of any of the provisions of the Contract. Necessary repairs or renewals made on any section of the roadway or bridge thus opened to traffic under instructions from the Engineer, due to defective material or work, or to any cause other than ordinary wear and tear, pending completion and acceptance of the roadway, bridge, or other work, shall be done by the Contractor, without additional compensation. Also, the Contractor shall not receive additional compensation for completing the Work except as specified in Subsection 104.03.

If the Contractor is dilatory in completing shoulders, drainage structures, or other features of work, the Engineer may so notify him in writing and establish therein a reasonable period of time in which the Work should be completed. If the Contractor is dilatory, or fails to make a reasonable effort toward completion in this period of time, the Engineer may then order all or a portion of the Project opened to traffic. On such sections which are so ordered to be opened, the Contractor shall conduct the remainder of his construction operations so as to cause the least obstruction to traffic and shall not receive any added compensation due to the added cost of the Work by reason of opening such section to traffic.

On any section opened to traffic under any of the above conditions, whether stated in the Special Provisions or opened by necessity of Contractor's operations, or unforeseen necessity, any damage to the highway not attributable to traffic which might occur on such section (except slides) shall be repaired by the Contractor at his expense. The removal of slides shall be done by the Contractor on a basis agreed to prior to the removal of such slides.

### **107.17 Contractor's Responsibility for the Work**

From the first day the Contractor begins work, or from the date Contract Time commences, whichever occurs first, until written final acceptance of the project by the Engineer, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of The Work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of The Work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except that the Department may, in its discretion, reimburse the Contractor for the repair of damage to The Work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, of the public enemy or of governmental authorities. The Contractor's responsibility for damages and injuries is defined in Subsection 104.05.A.

In case of suspension of work from any cause whatsoever, the Contractor shall be responsible for the Project and shall take such precautions as may be necessary to prevent damage to the Project, provide for normal drainage and shall erect any necessary temporary structures, signs, or other facilities at his expense.

### **107.18 Acquisition of Right-of-Way**

Rights of Way for the project will be obtained by the Department, in coordination with local governments and others. However, the Contractor's access to the portions of the right-of-way may be restricted. Where such

restrictions are known in advance to the Department they will be listed in the bid proposal. Delays to the progress of the Work may be encountered because of restricted access to portions of the right-of-way. When such delays occur, whether caused by restrictions listed in the bid proposal or restrictions that develop after the Contract is signed, the parties agree in executing the Contract that such delays do not constitute breach of the Contract. Delays in availability of right-of-way beyond those listed in the bid proposal, or that develop after the Contract has been signed, that impact the controlling Item or Items of the Work will not be charged against the Contract Time. Additional compensation for such delays shall not be paid, except as provided in Subsection 105.13, "Claims for Adjustments and Disputes," or Subsection 109.09, "Termination Clause." In the event the Department is unable to acquire right-of-way needed for the project, resulting in delay to or termination of the project, such situation will also be controlled by this Section, and will not constitute a breach of the Contract by the Department.

### **107.19 Personal Liability of Public Officials**

In carrying out any of the provisions of the Contract or in exercising any power or authority granted to the Board, Commissioner, Chief Engineer, their agents and employees, by the Contract, there shall be no liability, either personally or as officials or representatives of the Department, it being understood that in all such matters they act solely as agents and representatives of the Department.

### **107.20 No Waiver of Legal Rights**

Upon completion of The Work, the Department will expeditiously make final inspection and notify the Contractor of acceptance. Such final acceptance, however, shall not preclude or estop the Department from correcting any measurement, estimate, or certificate made before or after completion of The Work, nor shall the Department be precluded or estopped from recovering from the Contractor or his Surety, or both, such over-payment as it may sustain, or by failure on the part of the Contractor to fulfill his obligations under the Contract. A waiver on the part of the Department of any breach of any part of the Contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the Contract, shall be liable to the Department for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Department's rights under any warranty or guaranty.

### **107.21 General Description**

The Contractor shall designate, prior to beginning any work, a Worksite Utility Coordination Supervisor (WUCS) who shall be responsible for initiating and conducting utility coordination meetings and accurately recording and reporting the progress of utility relocations and adjustment work. Also, the WUCS shall prepare an Emergency Response Plan for the purpose of planning, training, and communicating among the agencies responding to the emergency. The WUCS shall be the primary point of contact between all of the Utility companies, the Contractor and the Department. The WUCS shall recommend the rate of recurrence for utility coordination meetings and the Engineer will have the final decision on the regularity for utility coordination meetings. In no case will utility coordination meetings occur less than monthly until controlling items of utility relocations and adjustment milestones are completed. The WUCS shall contact each of the utility companies for the purpose of obtaining information including, but not limited to, a Utility Adjustment Schedule for the controlling items of utility relocations and adjustments. The WUCS shall notify the appropriate utility company and/or utility subcontractors and the Department of the status of controlling items of relocations and adjustment milestones as they are completed. The WUCS shall furnish the Engineer, for approval, a Progress Schedule Chart, immediately following the receipt of the Notice to Proceed unless otherwise specified, which includes the utility companies controlling items of work and other information in accordance with Section 108.03 or elsewhere in the Contract documents.

#### **A. Qualifications**

The WUCS shall be an employee of the Prime Contractor, shall have at least one year experience directly related to highway and utility construction in a supervisory capacity and have a complete understanding of the Georgia Utilities Protection Center operations, and shall be knowledgeable of the High-voltage Safety Act and shall be trained on the Georgia Utility Facility Protection Act (GUFPA). The Department does not provide any training on GUFPA but will maintain a list of the Georgia Public Service Commission certified training programs developed by other agencies. Currently the following companies offer approved GUFPA training programs:

Associated Damage Consultants  
Phone: 706.234.8218 or 706.853.1362  
Georgia Utility Contractors Association  
Phone: 404.362.9995

Georgia Utilities Protection Center  
Phone: 678.291.0631 or 404.375.6209  
H B Training & Consulting  
Phone: 706.619.1669 or 877.442.4282 (Toll Free)

The Prime Contractor is responsible for obtaining the GUFPA training for their employees. Questions concerning the Georgia Public Service Commission GUFPA training program should be directed to:

Georgia Public Service Commission  
244 Washington St. SW  
Atlanta, GA 30334-5701  
404.463.9784

#### **B. Ticket Status**

During the utility coordination meetings the WUCS shall collect and maintain the Ticket Status information to determine the status of all locate requests within the project limits. This information will be used to assure those planning to use mechanized equipment to excavate or work within the project limits are prepared to begin work when they have reported or estimated beginning work. At points where the Contractor's or utility company's operations are adjacent to or conflict with overhead or underground utility facilities, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not commence until all arrangements necessary for the protection thereof have been made.

#### **C. Notice**

The names of known utility companies and the location of known utility facilities will be shown on the Plans, or listed in the Subsurface Utility Engineering Investigation if performed or in the Special Provisions; and the WUCS shall give 24-hour notice to such utility companies before commencing work adjacent to said utility facilities which may result in damage thereto. The WUCS shall further notify utility companies of any changes in the Contractor's work schedules affecting required action by the utility company to protect or adjust their facilities. Notice to the utility companies by the Department of the Award of Contract, under Subsection 105.06, shall not be deemed to satisfy the notice required by this paragraph. Furthermore, this 24-hour notice shall not satisfy or fulfill the requirements of the Contractor as stated in Chapter 9 of Title 25 of the Official Code of Georgia Annotated, known as the "Georgia Utility Facility Protection Act".

#### **D. Agenda**

The WUCS shall cooperate with the companies of any underground or overhead utility facilities in their removal and relocations or adjustment work in order that these operations may progress in a reasonable manner, that duplication of their removal and relocations or adjustment work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted. To promote this effort the WUCS shall prepare an agenda for the utility coordination meetings and circulate same in advance of the meeting to encourage input and participation from all of the utility companies. The agenda will be prepared by an examination of the project site and may include photographs of potential/actual utility conflicts.

#### **E. Emergency Response Plan**

The WUCS shall prepare an Emergency Utility Response Plan (EURP) within 30 days following the receipt of the Notice to Proceed. The EURP shall indicate the project location (which includes street address and or major intersections / major highway route, if possible with a land mark) that would be reported in case of an emergency, WUCS, Emergency Utility Coordinator (EUC), utility company name, utility company emergency contact information to include but not limited to emergency phone number, response time for emergency, working condition of devices needed to facilitate prompt shut off, and primary point of contact name and phone number for the project.

Emergency Utility Coordinator (EUC) shall be an employee of the Prime Contractor and shall notify the appropriate utility company and/or utility subcontractors in case of an emergency. EURP must include the contact details of the EUC, if WUCS is not the primary emergency utility coordinator for this project.

The plan will also include a means of reporting emergencies and the Utility Emergency Response Information for each company. The WUCS/EUC shall post the EURP in an area readily accessible to the Department and project personnel. Also, WUCS shall distribute the copies of EURP by e-mail and hard copy to GA DOT Area Engineer, GA DOT Construction Project Engineer, Contractor's project manager, superintendent, and all approved subcontractors whose work can be in conflict with utilities facilities, personnel of the each facility/owner/ operator who has facilities within the project limits and keep a copy in close proximity to active construction.

In the event of interruption to gas, water or other utility services as a result of accidental breakage or as a result of being exposed or unsupported, the WUCS/EUC shall promptly notify the appropriate emergency officials, the Georgia Utilities Protection Center and the appropriate utility facility company or operator, if known. Until such time as the damage has been repaired, no person shall engage in excavating or blasting activities that may cause further damage to the utility facility.

In order to keep up with the latest / most updated EURP contact information (name and phone numbers); WUCS shall include an item in the agenda of Utility Coordination meeting about the updates / changes in the EURP plan.

The Emergency Utility Response Plan and Emergency Utility Response Information template can be found at the State of Georgia, Office of Utilities Webpage.

#### **F. Submission**

Provisions for reporting all utility coordination meetings, the progress of utility relocation and adjustment work milestones and ticket status information will be reported on a form developed by the WUCS and will be distributed by the WUCS to all of the utility companies as milestones are met and shall be included as part of the project records. These reports shall be delivered to the Engineer for review, on a monthly basis. The WUCS shall immediately report to the Engineer any delay between the utility relocation and adjustment work, the existing Utility Adjustment Schedule, or the proposed Utility Adjustment Schedule so that these differences can be reconciled.

#### **G. Delays**

Delays and interruptions to the controlling Item or Items of The Work caused by the adjustment or repair of water, gas, or other utility appurtenances and property may be considered for an extension of Contract Time as provided in Subsection 108.07.E unless such delays are due to the negligence of the Contractor.

#### **H. Facilities Supported on Bridges**

If the utility facilities are to be supported on bridges, the following provisions shall apply:

1. The Plans will show the location of the facility and the auxiliary items necessary to support the facility.
2. The Contractor constructing the bridge shall install anchor bolts, thimbles, inserts, or other auxiliary items attached to the bridge as a part of the support for the utility facility. The Utility Company shall furnish these auxiliary items, unless the Contract indicates these items are to be furnished by the Contractor as a part of the bridge construction.
3. The Utility or its subcontractor constructing the utility facility shall install hanger rods, pipe rollers, and other attachments necessary for the support of the utility facility as indicated on the Plans. The Utility Company shall furnish these attachments at no cost to the Department or the prime contractor unless otherwise specified. This work shall also include:
  - a. Caulking the openings around the utility where it passes through endwalls to prevent the passage of undesirable materials.
  - b. Painting the exposed portions of utility supports unless such supports are corrosion resistant. Painting shall be done in accordance with the applicable portions of Section 535, unless otherwise specified.
4. The sequence of bridge construction work may be set forth in the Plans and/or the Special Provisions and will show at what stage of the Work a utility company will be allowed to make the utility installation. Further, all or any portion of The Work under Subsection 107.21.H.3 may be included in the bridge Contract by the Plans and/or the Special Provisions.

5. Any damage to the bridge structure caused by the utility installation shall be repaired to the satisfaction of the Engineer at the expense of the Utility or its subcontractor installing the utility facility.

#### **I. Clearances**

The Plans provide for at least minimum clearance of utilities as required by the National Electrical Safety Code, U.S. Department of Commerce, and National Bureau of Standards. Any additional clearance the Contractor may desire or require in performing The Work shall be arranged by the Contractor with the utility company. The Department will pay no extra compensation for such additional clearances.

#### **J. Utility Relocation Progress Schedule**

The purpose of the Utility Adjustment Schedule is to provide the Contractor with the pertinent information, including any utility staging required, dependent activities, or joint-use coordination that is required for the creation of a feasible progress schedule. A suitable Utility Adjustment Schedule form is available from the Department for the WUCS to circulate to utility companies for any proposed project construction staging or should a utility company not duly file a Utility Adjustment Schedule to the Department during the preconstruction phase of the project. The WUCS shall submit a Utility Relocation Progress Schedule showing together the Progress Schedule Chart referenced in Section 108.03 and the proposed Utility Adjustment Schedules from all utility companies to the Engineer for review and approval. Copies of existing Utility Adjustment Schedules with utility companies having facilities on this project will be made available at the Georgia Department of Transportation, Office of Construction Bidding Administration, located at One Georgia Center, 600 West Peachtree Street, NW, Atlanta, GA 30308, for examination by the Contractor. The Utility Adjustment Schedules are available on-line at: [www.dot.ga.gov/partner\\_smart/contractors/bidding\\_letting/bidx/default.aspx](http://www.dot.ga.gov/partner_smart/contractors/bidding_letting/bidx/default.aspx)

#### **K. Compensation**

There will be no separate measurement or payment for this Work. The cost associated with this Work shall be included in the overall Bid submitted.

### **107.22 Hazardous and/or Toxic Waste**

When the Contractor's operations encounter or expose any abnormal condition which may indicate the presence of a hazardous and/or toxic waste, such operations shall be discontinued in the vicinity of the abnormal condition and the Engineer shall be notified immediately. The presence of barrels, discolored earth, metal, wood, or visible fumes, abnormal odors, excessively hot earth, smoke, or anything else which appears abnormal may be indicators of hazardous and/or toxic wastes and shall be treated with extraordinary caution as they are evidence of abnormal conditions.

The Contractor's operations shall not resume until so directed by the Engineer.

Disposition of the hazardous and/or toxic waste will be made in accordance with the requirements and regulations of the Department of Human Resources and the Department of Natural Resources. Where the Contractor performs work necessary to dispose of hazardous and/or toxic waste, payment will be made at the unit prices for pay items included in the contract which are applicable to such work or, where the contract does not include such pay items, payment will be as provided in Subsection 109.05, "Extra Work."

### **107.23 Environmental Considerations**

#### **A. Construction**

Erosion control measures shall be installed, to the greatest practical extent, prior to clearing and grubbing. Particular care shall be exercised along stream buffers, wetlands, open waters and other sensitive areas to ensure that these areas are not adversely affected.

Construction equipment shall not cross streams, rivers, or other waterways except at temporary stream crossing structures shown on the plans or as allowed by permit.

Construction activities within wetland areas are prohibited except for those within the construction limits as shown on the Plans and as specified in Subsection 107.23.E.



All sediment control devices (except sediment basins) installed on a project shall, as a minimum, be cleaned of sediment when one half the capacity, by height, depth or volume, has been reached. Sediment basins shall be cleaned of sediment when one-third the capacity by volume has been reached.

## **B. Bridge Construction Over Waterways**

Construction waste or debris, from bridge construction or demolition, shall be prevented from being allowed to fall or be placed into wetlands, streams, rivers or lakes.

Excavation, dewatering, and cleaning of cofferdams shall be performed in such a manner as to prevent siltation. Pumping from cofferdams to a settling basin or a containment unit will be required if deemed necessary by the Engineer.

Operations required within rivers or streams, i.e. jetting or spudding, shall be performed within silt containment areas, cofferdams, silt fence, sediment barriers or other devices to minimize migration of silt off the project.

## **C. Environmental Clearance of Local Material or Disposal Sites**

Specific written environmental approval from the Engineer will be required for any local material or disposal sites not included in the Plans. No work shall be started at any potential local material or waste site not shown on the plans prior to receiving said environmental approval from the Engineer. Local material sites are defined as borrow pits, common borrow, base, embankment, sand clay base, topsoil base, soil cement base, granular embankment, asphalt sand, maintenance pits, or stockpiled borrow sources. Disposal sites, as defined in Standard Specification 201.3.05.E.3, may be defined as excess material, common fill, or inert waste.

The Contractor may obtain environmental approval on a site with one of two methods: 1) GDOT provided environmental surveys or 2) environmental surveys obtained by the Contractor at no cost to the Department. The Contractor must choose one method for review and approvals, which will apply to all sites required for a given project, and submit an Environmental Review Notification indicating their chosen method.

1. If the Contractor chooses to obtain their own environmental surveys, they shall be conducted by a consultant(s) prequalified to work with the Department in the following area classes: 1.06(b) – History; 1.06(e) – Ecology; and 1.06(f) – Archaeology. Background research and field methods shall be conducted in accordance with the Office of Environmental Services Environmental Procedures Manual, with documentation in an Environmental Survey Results Memorandum (template available from the Office of Environmental Services).
2. If the Contractor requests that GDOT conduct required environmental surveys, an Environmental Survey Request shall be submitted for each site (template available from the Office of Environmental Services).

Upon receipt of an Environmental Survey Request, the Office of Environmental Services shall provide environmental approval or denial within thirty (30) business days. Upon receipt of an Environmental Survey Results Memorandum, the Office of Environmental Services shall provide environmental approval or denial within ten (10) business days. The Department will not accept requests for review of sites before a Notice to Proceed is issued. Incomplete Survey Requests, surveys that are not conducted by a GDOT prequalified consultant, or surveys that do not meet the required level of field effort or documentation, will be denied by GDOT OES and may require resubmittal.

The Engineer will inform the Contractor in writing as to the approval or denial of environmental clearance. Approvals may be provided upon condition that an Environmentally Sensitive Area (ESA) be designated within or adjacent to the site prior to use. All ESA stipulations shall be adhered to in accordance with Standard Specification 107.23.F. If a site is denied, the Contractor may, at no expense to the Department, seek to obtain permits or pursue other remedies that might otherwise render the site(s) acceptable, if available. Any and all changes to proposed sites or their associated haul roads that are not included within the original Environmental Survey Request or Environmental Survey Results Memorandum, including expansion,

utilization for purposes other than those indicated in the original submittal, etc. must be submitted for further environmental review and approval prior to use.

Sites included in the Plans have environmental clearance and shall be used only for the purpose(s) specified in the Plans or other contract documents. Should the Contractor wish to expand or utilize said sites for any purpose other than that provided for in the Plans or other contract documents, specific written environmental clearance as noted above shall be obtained.

#### **D. Control of Pollutants**

Pollutants or potentially hazardous materials, such as fuels, lubricants, lead paint, chemicals or batteries, shall be transported, stored, and used in a manner to prevent leakage or spillage into the environment. The Contractor shall also be responsible for proper and legal disposal of all such materials.

Equipment, especially concrete or asphalt trucks, shall not be washed or cleaned-out on the Project except in areas where unused product contaminants can be prevented from entering waterways.

#### **E. Temporary Work in Wetlands Outside of the Construction Limits within the Right-of-Way and Easement Areas**

Temporary work in wetlands (that are not delineated with orange barrier fence) will be subject to the following requirements:

1. Temporary work in wetlands shall be accomplished by using temporary structures, timber, concrete, soil with geotextile fabric, or other suitable matting. The area shall not be grubbed.
2. Soil matting shall be protected from erosion in accordance with the Specifications.
3. Whenever temporary work is required in Saltwater Marsh Wetlands, all temporary structures and/or matting shall be removed in their entirety prior to Final Acceptance of the Project. Matted and compressed soils shall be backfilled to their original ground elevation with material meeting the requirements of Section 212 – Granular Embankment.
4. Whenever temporary work is required in Freshwater Wetlands, all temporary structures and/or matting (exclusive of soil matting to be retained in the final roadway section) shall be removed in their entirety prior to Final Acceptance of the Project.  
Once the temporary materials have been removed, the area shall be covered by Excelsior or Straw blankets according to Section 713 of the Specifications. The grassing and ground preparation referenced in Subsection 713.3.03, "Preparation", will not be applicable to this Work.
5. The Engineer shall be notified so that a field inspection may be conducted to certify that the temporary materials were properly removed and that the area was properly restored. The Contractor shall be responsible for any corrective action required to complete this Work.
6. There will be no separate measurement or payment for this Work. The cost associated with this work shall be included in the overall Bid submitted.

#### **F. Environmentally Sensitive Areas**

Some archaeological sites, historic sites, wetlands, streams, stream and pond buffers, open waters and protected animal and plant species habitat within the existing/required Right-of-Way and easement areas may be designated as ENVIRONMENTALLY SENSITIVE AREAS (ESAs). These areas are shown on the applicable Plan sheets and labeled "ESA" (e.g. ESA – Historical Boundary, ESA – Wetland Boundary). The Department may require that some ESAs or portions thereof be delineated with orange barrier fence. The Contractor shall install, maintain, and replace as necessary orange barrier fence at ESAs as delineated in the Plan sheets.

The Contractor shall not enter, disturb, or perform any construction related activities, other than those shown on the approved plan sheets within areas designated as ESAs including ESAs or portions thereof not delineated with orange barrier fence. This includes but is not limited to the following construction activities: clearing and grubbing; borrowing; wasting; grading; filling; staging/stockpiling; vehicular use and parking;

sediment basin placement; trailer placement; and equipment cleaning and storage. Also, all archaeological sites, historic sites, wetlands, streams, stream and pond buffers, open waters, and protected animal and plant species habitat that extend beyond the limits of existing/required Right-of- Way and easement areas shall be considered ESAs and the Contractor shall not perform any construction related activities (such as those listed above) within these areas or make agreements with property owners to occupy these areas for construction related activities (such as those listed above). The Contractor shall make all construction employees aware of the location(s) of each ESA and the requirement to not enter or otherwise disturb these areas.

If the Contractor is found to have entered an ESA, either within or outside the project area, for any purpose not specifically shown on the approved plan sheets, the Department may, at its discretion, issue a stop work order for all activities on the project except erosion control and traffic control until such time as all equipment and other items are removed and the ESA is restored to its original condition.

However, should damage to an ESA occur as a result of the Contractor's action in violation of this section, and notwithstanding any subsequent correction by the Contractor, the Contractor shall be liable for any cost arising from such action, including but not limited to, the cost of repair, remediation of any fines, or mitigation fees assessed against the Department by another government entity.

## **G. Protection of Migratory Birds and Bats**

The following conditions are intended as a minimum to protect migratory birds and bats during construction activities.

1. Project personnel shall be advised about the potential presence and appearance of federally protected migratory birds, including the barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), and eastern phoebe (*Sayornis phoebe*), and that there are civil and criminal penalties for harassing, harming, pursuing, hunting, shooting, wounding, killing, capturing, or collecting these species in violation of the Migratory Bird Treaty Act of 1918. The law protects adults, fledglings, nestlings, eggs, and active nests. All bats are protected under Georgia state law (Official Code of Georgia § 27-1-28), with some species protected under the federal Endangered Species Act of 1973. Pictures and habitat information shall be posted in a conspicuous location in the Project field office until such time that construction has been completed and time charges have stopped.
2. The demolition of existing bridge and culvert, the extension of existing culvert, and bridge maintenance activities on the underside of the bridge deck shall take place outside of the breeding and nesting season of phoebes, swallows and other migratory birds, which begins April 1 and extends through August 31, unless exclusionary barriers are put in place to prevent birds from nesting. For bridges, exclusionary barriers may be made of plastic, canvas or other materials proposed by the Contractor and approved by the State Environmental Administrator prior to installation. For box culverts, exclusionary barriers may be overlapping strips of flexible plastic (also called "PVC Strip Doors" or "Strip Curtains") or an alternate material proposed by the Contractor and approved by the State Environmental Administrator prior to installation. Exclusionary barriers must be installed on the bridge(s) and/or box culvert(s) prior to March 1 or after August 31, but in no time in between this period. Exclusionary barriers are not a guaranteed method of preventing migratory birds from nesting beneath bridges and work schedules shall take into account the possibility that barriers will not be successful. If exclusionary barriers are to be used, these steps shall be followed:
  - a. The Project ecologist shall be notified by phone (404) 631-1100 of the decision to install exclusionary barriers and the date of the proposed installation prior to the installation of any exclusionary devices.
  - b. The structure(s) shall be checked for nests prior to the placement of exclusionary barriers. If nests are present, they shall be inspected to ensure that eggs or birds are not present. If the nests are found to be occupied, construction activities associated with the bridge shall be postponed until after August 31 when the breeding season is complete.

- c. For any box culvert(s) being replaced, exclusionary barriers shall be installed on both the inlet and outlet openings. For any box culvert(s) being extended, exclusionary barriers shall be placed on the opening(s) (inlet and/or outlet) where work is taking place. For bridge(s) being removed, barriers shall be installed along the full length of the bridge(s). In all cases, barriers shall be installed prior to March 1 and left in place until August 31 or until the culvert removal, culvert extension, or bridge demolition is complete. If the exclusionary barriers fail to prevent nesting (i.e., birds are able to bypass barriers and build nests), construction activities associated with the bridge shall be postponed until after August 31.
  - d. During construction activities, exclusionary barriers shall be inspected daily for holes or other defects that impair its ability to exclude migratory birds from nesting beneath the bridge. Any holes or defects shall be repaired immediately.
  - e. Entanglement and/or entrapment of barn swallows, cliff swallows, and eastern phoebes in exclusionary netting constitutes harm to migratory birds. Any entanglement and/or entrapment of migratory birds shall be reported immediately to the Project Engineer, who in turn will notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101.
3. Migratory birds may nest in other structures or natural features that will be impacted by construction activities. If active nests containing eggs are encountered within the footprint of construction activities, the finding shall be reported immediately to the Project Engineer, who in turn shall notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All activity within 50 feet of active nests shall cease pending consultation by the Department with the U. S. Fish and Wildlife Service and the lead Federal Agency.
4. When working on bridges and culverts, sightings of bat species shall be reported immediately to the Project Engineer who in turn will notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All construction activity on the structure shall cease pending consultation by the Department with the U. S. Fish and Wildlife Service and/or the Georgia Department of Natural Resources and/or the lead Federal Agency. The Department will inform the Contractor of any changes to the project.
5. In the event any incident occurs that causes harm or injury to migratory birds during construction activities, the incident shall be reported immediately to the Project Engineer who in turn shall notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All activity shall cease pending consultation by the Department with the U. S. Fish and Wildlife Service and the lead Federal Agency.
6. Within 30 days of the completion of construction and the stopping of time charges, a report shall be provided to the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services, 600 West Peachtree Street NW, Atlanta, Georgia 30308. GDOT in turn will provide copies of the report to the U.S. Fish and Wildlife Service, the Georgia Department of Natural Resources Wildlife Resources Division, and the lead Federal Agency. The following information will be included in the report:
  - a. Contractor name and address.
  - b. Name and title of report preparer.
  - c. GDOT Project Identification (PI) number.
  - d. County(s) in which project is located.
  - e. Project description.

- f. Construction start and end dates.
  - g. Date GDOT was notified of intent to install barrier(s) per # 107.23G.2.a.
  - h. Number and type(s) of structures on which exclusion barriers were installed.
  - i. Type(s) of exclusion material used on each structure.
  - j. Start and end date(s) of installation of exclusionary barrier on each structure.
  - k. Start and end date(s) of removal of exclusionary barrier from each structure.
  - l. Photographs of each structure before and after exclusionary barrier installation.
  - m. Statement regarding whether the exclusionary barrier was effective in deterring bird use of the structure during construction.
  - n. Description of any incidents causing harm or injury to migratory birds during construction. This should include incidents that were reported as required under 107.23G.5.
  - o. Description of any sightings of bat species when working on bridges and culverts. This should include incidents that were reported as required under 107.23G.4.
7. All costs pertaining to any requirement contained herein shall be included in the overall bid submitted unless such requirement is designated as a separate Pay Item in the Proposal.

### **107.24 Closing of Roadways without On-Site Detours**

When existing roadways are to be closed to through traffic and on-site detours are not provided, the Contractor shall submit a written notice to the Engineer for approval 14 days prior to the closure of the existing roadways.

After receiving approval from the Engineer for the closure, the Contractor shall install signs at each closure site, in accordance with the MUTCD, to inform the traveling public of the proposed closure, including the date of closure. The sign shall be placed 5 days prior to the closure, at the direction of the Engineer.

Prior to the closure, the Area Engineer will inform local government officials and agencies, local news media, and the DOT Public Information Office of the proposed closure of the roadways.

### **107.25 Disruption to Residential and Commercial Property**

The Contractor shall plan, coordinate, and prosecute the work such that disruption to personal property and business is held to a practical minimum.

All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of each drainage structure or section of curb and gutter, sidewalk, or driveway shall be accomplished as soon as adequate strength is obtained. Finishing, dressing and grassing shall be accomplished immediately thereafter as a continuous operation within each area being constructed with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

Handwork, including raking and smoothing, shall be required to ensure that roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance. Grassing, when in season, shall immediately follow in order to establish permanent cover at the earliest date. If grassing is not in season, proper erosion control shall be installed and maintained.

The work described herein shall be in addition to that required by Subsection 104.07 "Final Cleaning Up" and Subsection 105.16 "Final Inspection and Acceptance."

August 7, 2018

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
SPECIAL PROVISION**

**COUNTY: FULTON**

**P.I. No.: 0015019**

**SECTION 108 - PROSECUTION AND PROGRESS**

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

**108.08. Failure or Delay in Completing Work on Time**

**C: Restrictive Work Hours**

1. Failure to re-open travel lanes as specified in Special Provision Section 150.6.A will result in the assessment of liquidated damages in the amount of \$1000.00 per hour or portion thereof.

**The above rates are cumulative and are in addition to any Liquidated Damages which may be assessed in accordance with Subsection 108.08 for failure to complete the overall project on time.**

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION**

**Section 109—Measurement and Payment**

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*Add the following:*

**109.11 Price Adjustments**

A. Asphalt Cement Price Adjustments will be computed on a *monthly* basis in accordance with the following:

PA = Price Adjustment.

APM= the “Monthly Asphalt Cement Price (Georgia Base Asphalt Price)” for the month the hot mix asphalt/bituminous tack/bituminous surface treatment is placed.

APL = the “Monthly Asphalt Cement Price (Georgia Base Asphalt Price)” for the month which the project was let.

TMT = Total Monthly Tonnage of asphalt cement computed by the Engineer based on the Hot Mix Asphaltic Concrete of the various types per ton (megagram)//Total Monthly Tonnage of asphalt cement used for bituminous tack coat (asphalt cement tack coat only, emulsified bituminous materials for tack coat are excluded) converted from gallons to tons (megagrams) by the Engineer//Total Monthly Tonnage of asphalt cement used for bituminous surface treatment (total gallons of asphalt emulsion used, as measured from distributors, will be multiplied by a factor of 0.65 to determine the quantity in gallons of asphalt cement used) converted from gallons to tons (megagrams) by the Engineer and certified for payment.

- a. If the asphalt cement price for the month is *greater* than the asphalt cement price for the month in which the project was let to contract, the contractor will be paid an amount calculated in accordance with the following formula:

$$PA = [((APM-APL)/APL)] \times TMT \times APL$$

- b. If the asphalt cement price for the month is *less* than the asphalt cement price for the month in which the project was let to contract, the Department will deduct an amount calculated in accordance with the following formula:

$$PA = [((APM-APL)/APL)] \times TMT \times APL$$

1. **“Monthly Asphalt Cement Price”**: The Department will determine the “Monthly Asphalt Cement Price” based on the following formulas:

Monthly Asphalt Cement Price = 100% Georgia Base Asphalt Price;

Where;

GBAP = “Georgia Base Asphalt Price”, (in dollars/ton) is based on the arithmetic average posted price of PG asphalt cement as specified in Section 820, from the Department’s monthly survey obtained from approved asphalt cement suppliers of bituminous materials to the Department projects F.O.B. the suppliers terminal. However, the highest price and the lowest price are excluded from the calculation of price, GBAP.

2. **“Asphalt Cement Quantity Calculation”**: The calculation of asphalt cement quantity for each mix type will be based on the asphalt cement content (*AC %*) of the approved Job Mix Formula (JMF) as specified in Subsection 400.1.03.C. The following calculation formula will be used to determine asphalt cement quantity:

**Section 109—Measurement and Payment**

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Asphalt Cement Quantity = Hot Mix Asphaltic Concrete monthly total in tons (megagrams) per mix type certified for the payment x AC (%)

The Total Monthly Tonnage (TMT) of asphalt cement computed by the Engineer will be calculated as follows:

TMT = Sum of all asphalt cement quantities, including polymer modified asphalt binder and non-modified asphalt cement, based on the Hot Mix Asphaltic Concrete of the various mix types per ton (megagram)// Sum of all asphalt cement quantities used as bituminous tack coat converted from gallons to tons (megagrams)// Sum of all asphalt cement quantities used for bituminous surface treatment (total gallons of asphalt emulsion used, as measured from distributors, will be multiplied by a factor of 0.65 to determine the quantity in gallons of asphalt cement used) converted from gallons to tons (megagrams) by the Engineer certified for payment.

Asphalt Cement Price for the Month (APM) will be adjusted monthly. Price adjustments (PA) will be made monthly and all calculations for Price Adjustments shall be performed by the Engineer as specified in SOP-39 “Determination of Asphalt Cement Index and Asphalt Cement Price Adjustment”.

- B. Price Adjustment Trigger:** No price adjustment will be made on any project with less than 366 Calendar Days from the Contract Letting Date to the specified completion date. If the original Contract contains 366 Calendar Days or more, the Price Adjustment shall be made on quantities placed from the Contract Letting Date to the specified completion date.
- C. “Monthly Asphalt Cement Price”:** The Department will publish a “Monthly Asphalt Cement Price” based on the formula contained within this specification.
- D. “Other Restrictions”:**
  - 1. No asphalt cement price adjustment will be made for cut-back, and emulsified asphalt when used for bituminous tack coat with Hot Mix Asphaltic Concrete Construction.
  - 2. There is a cap of 60% above the APL for any price adjustment.
  - 3. Unless specifically provided for by Supplemental Agreement or Contract Amendment, no positive Price Adjustments Asphalt Cement that result in a payment to the Contractor will be made after the original Contract Time has expired. Irrespective of any other provisions in the Contract, for purposes of this specification, “Contract Time” does not include any time extensions or Supplemental Agreements which affect the completion of the Contract. Negative Price Adjustments for Asphalt Cement for any work placed after the original Contract Time expires resulting in a return of funds to the Department will be made and shall be computed based on the Monthly Asphalt Cement Price at the time the Contract Time has expired or the Monthly Asphalt Cement Price at the time the Contract was let, whichever is less.
- E. Final Adjustment:** If there are differences between the final audited quantities and the sum of the quantities used to determine the asphalt cement adjustment, the Engineer will make a pro-rated increase or decrease in the price adjustment.

Payment for Price Adjustment will be made under:

Item No. 109	Price Adjustment- Asphalt Cement	\$ (+/-)
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Office of Construction Bidding Administration



**DEPARTMENT OF TRANSPORTATION**  
**STATE OF GEORGIA**  
**SUPPLEMENTAL SPECIFICATION**

**Section 109—Measurement and Payment**

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*Delete Subsection 109 and Substitute the following:*

**109.01 Measurement and Quantities**

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made along the surface, and no deductions will be made for individual fixtures having an area of 9 ft<sup>2</sup> (1 m<sup>2</sup>) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or ordered in writing by the Engineer.

Where payment is to be made by the square yard (square meter) for a specified thickness, the length will be measured on the surface along the centerline and the pay width shall be that width specified on the plans for the Final surface of the completed section. Intermediate courses shall be placed at a width sufficient to support successive courses with no detriment to the stability of the successive courses. The width of material required beyond the pay width will not be eligible for payment and shall be considered incidental to the work.

Structures will be measured according to neat lines shown on the Plans or as altered to fit field conditions.

All items which are measured by the linear foot (linear meter), such as pipe culverts, guard rail, underdrains, etc., will be measured parallel to the base or foundation upon which such structures are placed, unless otherwise shown on the Plans.

In computing volumes of excavation, the average end area method or other acceptable methods will be used.

The term “gage,” when used in connection with the measurement of steel plates, will mean the U.S. Standard Gage.

When the term “gage” refers to the measurement of electrical wire it will mean the wire gage specified in the National Electrical Code.

The term “ton” will mean the short ton consisting of 2,000 pounds avoirdupois. The term “megagram” will mean one metric ton, equivalent to 1,000 kg. Any commodity paid for by weight shall be weighed on scales that have been approved as specified below and which are furnished at the expense of the Contractor or Supplier. Weighing and measuring systems including remote controls shall be subject to type-approval by the Department of Transportation. The manufacture, installation, performance, and operation of such devices located in Georgia shall conform to, and be governed by, the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act, the Georgia Weights and Measures Regulations, as amended and adopted, the current edition of the National Bureau of Standards Handbook 44, and these Specifications. Weighing and measuring systems located outside Georgia which are utilized for weighing materials to be used in Department work shall be manufactured, installed, approved, and operated in accordance with applicable laws and regulations for the state in which the scales are located.

All weighing, measuring, and metering devices used to measure quantities for payment shall be suitable for the purpose intended and will be considered to be “commercial devices.” Commodity scales located in Georgia shall be certified before use for accuracy, condition, etc., by the Weights and Measures Division of the Georgia Department of Agriculture, or its authorized representative. Scales located outside Georgia shall be certified in accordance with applicable laws and regulations for the state in which the scales are located. This certification shall have been made within a period of not more than one year prior to date of use for weighing commodity.

All equipment and all mechanisms and devices attached thereto or used in connection therewith shall be constructed, assembled, and installed for use so that they do not facilitate the perpetration of fraud. Any scale component or mechanism, which if manipulated would alter true scale values (including manual zero setting mechanisms) shall not be accessible to the

scale operator. Such components and mechanisms that would otherwise be accessible to the scale operator shall be enclosed. Provisions shall be made for security seals where appropriate on equipment and accessories. A security seal shall be affixed to any adjustment mechanism designed to be sealed. Scale or accessory devices shall not be used if security seals have been broken or removed.

Any certified scale or scale component which has been repaired, dismantled, or moved to another location shall again be tested and certified before it is eligible for weighing.

Whenever materials that are paid for based on weight are from a source within the State, the scales shall be operated by and the weights attested to by signature and seal of a duly authorized Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted. When such materials originate from another state that has a certified or licensed weigher program, the scales shall be operated by a weigher who is certified by that state in accordance with applicable laws, and weight ticket recordation shall be in accordance with Standard Operating Procedure 15.

When materials are paid for based on weight and originate from another state which has no program for certifying or licensing weighers, the materials shall be weighed on scales located in the State of Georgia by a Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted.

No scale shall be used to measure weights greater than the scale manufacturer's rated capacity. A digital recorder shall be installed as part of any commodity scale. The recorder shall produce a printed digital record on a ticket with the gross, tare, and net weights of the delivery trucks, along with the date and time printed for each ticket. Provisions shall be made so that the scales or recorders may not be manually manipulated during the printing process. The system shall be so interlocked as to allow printing only when the scale has come to rest. Either the gross or net weight shall be a direct scale reading. Printing and recording systems that are capable of accepting keyboard entries shall clearly and automatically differentiate a direct scale weight value from any other weight values printed on the load ticket.

All scales used to determine pay quantities shall be provided to attain a zero balance indication with no load on the load receiving element by the use of semi-automatic zero (push-button zero) or automatic zero maintenance.

Vehicle scales shall have a platform of sufficient size to accommodate the entire length of any vehicle weighed and shall have sufficient capacity to weigh the largest load. Adequate drainage shall be provided to prevent saturation of the ground under the scale foundation.

The Engineer, at his discretion, may require the platform scales to be checked for accuracy. For this purpose the Contractor shall load a truck with material of his choosing, weigh the loaded truck on his scales, and then weigh it on another set of certified vehicle scales. When the difference exceeds 0.4 percent of load, the scales shall be corrected and certified by a registered scale serviceman registered in the appropriate class as outlined in the Georgia Weights and Measures Regulations or in accordance with applicable requirements of the state in which the scales are located. A test report shall be submitted to the appropriate representative of the Department of Agriculture.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to their water level capacity as determined by the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined.

Cement and lime will be measured by the ton (megagram). Whenever cement or lime is delivered to the Project in tank trucks, a certified weight shall be made at the shipping point by an authorized Certified Public Weigher who is not an employee of the Department. Whenever cement and lime are from a source within the State, the scales shall be operated by the weights attested to by signature and seal of a duly authorized Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted. When such materials originate from another state that has a certified or licensed weigher program, the scales shall be operated by a weigher who is certified by that state in accordance with applicable laws, and the weight ticket recordation shall be in accordance with Standard Operating Procedure 15. When cement and lime originate from another state that has no program for certifying or licensing weighers, the materials shall be weighed on scales located in the State of Georgia by a Certified Public Weigher in accordance with Standard Operating Procedure 15 and the Official Code of Georgia, Annotated, Section 10-2-5 of the Georgia Weights and Measures Act as amended and adopted.

The shipping invoice shall contain the certified weights and the signature and seal of the Certified Public Weigher. A security seal shall also be affixed to the discharge pipe cap on the tank truck before leaving the shipping point. The number on the security seal shall also be recorded on the shipping invoice. The shipping invoice for quicklime shall also contain a certified lime purity percentage. Unsealed tank trucks will require reweighing by a Certified Public Weigher.

Timber will be measured by the thousand feet board measure (MFBM) (cubic meter) actually incorporated in the structure. Measurements will be based on nominal widths and thickness and the actual length in place. No additional measurement will be made for splices except as noted for overlaps as shown on the Plans.

The term “Lump Sum” when used as an item of payment will mean complete payment for The Work described in the Contract.

When a complete structure or structural unit (in effect, “Lump Sum” work) is specified as the unit of the measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured as defined in Subsection 109.05.B.4.

When standard manufactured items are specified as fence, wire, plates, rolled shapes, pipe conduits, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerance in cited Specifications, manufacturing tolerances established by the industries involved will be accepted.

## 109.02 Measurement of Bituminous Materials

### A. By Weighing the Material

The Department prefers this method whenever it is practicable. This method will be considered acceptable under the following conditions:

1. **Weighted On Project:** If the weights of the bituminous materials delivered by tank trucks are to be determined on the Project, weights shall be determined on scales that have been previously checked by the Department with standard weights for accuracy. The scale platform shall be large enough to accommodate the entire vehicle at one time. Under no conditions will truck scales be used to measure weights greater than their rated capacity. All weights not determined in the presence of an authorized representative of the Department shall be made by a Certified Public Weigher who is not an employee of the Department of Transportation and who is in good standing with the Georgia Department of Agriculture. The weight tickets shall carry both the signature and seal of the Certified Public Weigher.
2. **Weighted At Shipping Point:** A certified weight made at the shipping point by an authorized Certified Public Weigher who is not an employee of the Department of Transportation and who is registered with the Georgia Department of Agriculture, will be acceptable provided all openings in the tank have been sealed by the producer and when, upon inspection on the Project, there is no evidence of any leakage. The shipping ticket in this case must carry the signature and seal of the Certified Public Weigher. If the tank is not completely emptied the amount of material remaining in the tank truck will be measured by either weight or volume and the amount so determined, as verified by the Engineer, will be deducted from the certified weight.
3. **By Extraction Analysis:** The weight of bituminous material used will be determined by extraction tests made by the field laboratory. The average asphalt content for each Lot will be used to compute the weight of the Asphalt Cement to be paid for in accordance with the following formula:

English:

$$P = \% AC \times T$$

Where:

P = Pay Tons of Asphalt Cement

% AC = Lot average of % Asphalt Cement by weight of total mix as determined by extraction

T = Actual accepted tons of mixture as weighed

Metric:

$$P = \% AC \times T$$

Where:

P = Pay megagrams of Asphalt Cement

% AC = Lot average of % Asphalt Cement by weight of total mix as determined by extraction

T = Actual accepted megagrams of mixture as weighed

4. **By Digital Recording Device:** The amount of bituminous material as shown on the printed tickets will be the Pay Quantity.

## B. By Volume

The volume will be measured and corrected for the difference between actual temperature and 60 °F (15 °C). Containers shall be level when measured, and one of the following methods shall be used, whichever is best suited to the circumstances:

1. **Tank Car Measurement:** If the material is shipped to the Project in railroad tank cars, the Contractor shall furnish the Engineer a certified chart showing the dimensions and volume for each inch (25 mm) of depth for each tank. The Engineer will make outage and temperature measurements before unloading is begun and after it is finished. The measurements will be taken when the bituminous material is at a uniform temperature and free from air bubbles. The Contractor shall not remove any bituminous material from any tank until necessary measurements have been made nor shall he release the car until final outage has been measured. The total number of gallons (liters) allowed for any tank car shall not be more than the U.S. Interstate Commerce Commission rating for that car, converted to gallons at 60 °F (15 °C).
2. **Truck Measurement:** If bituminous materials are delivered to the Project in tank trucks, distributor tanks, or drums, the Contractor shall not remove any bituminous material from the transporting vehicle or container until necessary measurements have been made, nor shall the transporting vehicle or container be released until final outage has been measured. If weighing is not convenient, the Contractor shall furnish the Engineer with a certified chart showing the dimensions and volume of each container together with a gauge or calibrated measuring rod which will permit the volume of the material to be determined by vertical measurement.
3. **Metering:** The volume may be determined by metering, in which case the metering device used and the method of using it shall be subject to the approval of the Engineer.
4. **Time of Deliveries:** The arrival and departure of vehicles delivering bituminous materials to the Project site shall be so scheduled that the Engineer is afforded proper time for the measurements of delivered volume and final outage. The Engineer will make the necessary measurements only during the Contractor's normal daily working hours.

## C. Production for Multiple Projects

When a Contractor is producing Asphaltic Concrete from one plant, which is being placed on two or more jobs, public or private, the amount of bituminous material used may be determined by extraction tests in accordance with Subsection 109.02.A.3 or digital recording device in accordance with Subsection 109.02.A.4.

## D. Tack Coat

When the same storage facility is utilized for Bituminous Materials to be used in Hot Mix Asphaltic Concrete, Bituminous Tack Coat, and/or Surface Treatment, the quantity used for Tack Coat shall be converted to tons (megagrams) and deducted from the quantities for the Bituminous Material used in the Hot Mix Asphaltic Concrete and Surface Treatment.

## E. Corrections

When the volume and temperature have been determined as defined above, the volume will be corrected by the use of the following formula:

$$V_{\text{English}} = \frac{V1}{K(t-60) + 1} \qquad V_{\text{metric}} = \frac{V1}{K(t-15) + 1}$$

Where:

V = Volume of bituminous material at 60 °F (15 °C)

V1= Volume of hot bituminous material

t = Temperature of hot bituminous material in degrees Fahrenheit (Celsius)

K= Coefficient of Expansion of bituminous material (correction factor)

The correction factors K for various materials are given below:

- 0.00035 (0.00063) per °F (°C) for petroleum oils having a specific gravity of 60 °F/60 °F (15 °C/15 °C) above 0.966
- 0.00040 (0.00072) per °F (°C) for petroleum oils having a specific gravity of 60 °F/60 °F (15 °C/15 °C) between 0.850-0.966
- 0.00030 (0.00054) per °F (°C) for Tar
- 0.00025 (0.00045) per °F (°C) for Emulsified Asphalt
- 0.00040 (0.00072) per °F (°C) for Creosote Oil

### 109.03 Scope of Payment

The Contractor shall receive and accept the compensation provided for in the Contract as full payment for furnishing all materials, labor, tools, equipment, superintendence and incidentals, and for performing all work contemplated and embraced under the Contract in a complete and acceptable manner, for any infringement of patent, trademark or copyright, for all loss or damage arising from the nature of The Work, or from the action of the elements, for all expenses incurred by or in consequence of the suspension or discontinuance of The Work, or from any unforeseen difficulties which may be encountered during the prosecution of The Work and for all risks of every description connected with the prosecution of The Work until its Final Acceptance by the Engineer, except as provided in Subsection 107.16.

The payment of any partial estimate prior to Final Acceptance of the Project as provided in Subsection 105.16 shall in no way affect the obligation of the Contractor to repair or renew any defective parts of the construction or to be responsible for all damages due to such defects.

### 109.04 Payment and Compensation for Altered Quantities

When alteration in Plans or quantities of work not requiring Supplemental Agreements as herein before provided for are ordered and performed, the Contractor shall accept payment in full at the Contract Unit Bid Prices for the actual quantities of work done, and no allowance will be made for increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor, resulting either directly from such alterations, or indirectly from unbalanced allocation among the Contract Items of overhead expense on the part of the Bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

Compensation for alterations in Plans or quantities of work requiring Supplemental Agreements shall be as stipulated in such agreement, except that when the Contractor proceeds with The Work without change of price being agreed upon, he shall be paid for such increased or decreased quantities at the Contract Unit Prices Bid in the Proposal for the Items of The Work.

### 109.05 Extra Work

Extra work, as defined in Subsection 101.27, when ordered in accordance with Subsection 104.04, will be authorized in writing by the Engineer. The authorization will be in the form of a Supplemental Agreement or a Force Account.

#### A. Supplemental Agreement

In the case of a Supplemental Agreement, the work to be done will be stipulated and agreed upon by both parties prior to any extra work being performed.

Payment based on Supplemental Agreements shall constitute full payment and settlement of all additional costs and expenses including delay and impact damages caused by, arising from or associated with The Work performed.

#### B. Force Account

When no agreement is reached for Extra Work to be done at Lump Sum or Unit Prices, such work may be authorized by the Department to be done on a Force Account basis. A Force Account estimate that identifies all anticipated costs shall be prepared by the Contractor on forms provided by the Engineer. Work shall not begin until the Force Account is approved. Payment for Force Account work will be in accordance with the following:

- 1. Labor:** For all labor, equipment operators and supervisors, excluding superintendents, in direct charge of the specific operations, the Contractor shall receive the rate of wage agreed upon in writing before beginning work for each and every hour that said labor, equipment operators and supervisors are actually engaged in such work.  
The Contractor shall receive the actual costs paid to, or in behalf of, workers by reason of subsistence and travel allowances, health and welfare benefits, pension fund benefits, or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on The Work.  
An amount equal to 15% of the sum of the above items will also be paid the Contractor.
- 2. Bond, Insurance, and Tax:** For property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and Social Security taxes on the Force Account work, the Contractor shall receive the actual cost, to which cost no percentage will be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance, and tax.
- 3. Materials:** For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such material incorporated into The Work, including Contractor paid transportation charges (exclusive of machinery rentals as hereinafter set forth), to which cost 10% will be added.
- 4. Equipment:** For any machinery or special equipment (other than small tools) including fuel and lubricant, plus transportation costs, the use of which has been authorized by the Engineer, the Contractor shall receive the rental

rates indicated below for the actual time that such equipment is in operation on The Work or the time, as indicated below, the equipment is directed to stand by.

Equipment rates shall be based on the latest edition of the *Rental Rate Blue Book for Construction Equipment* or *Rental Rate Blue Book for Older Construction Equipment*, whichever applies, as published by EquipmentWatch using all instructions and adjustments contained therein and as modified below.

Allowable Equipment Rates shall be established as defined below:

- Allowable Hourly Equipment Rate = Monthly Rate/176 x Adjustment Factors.
- Allowable Hourly Operating Cost = Hourly Operating Cost.
- Allowable Rate Per Hour = Allowable Hourly Equipment Rate + Allowable Hourly Operating Cost.
- Standby Rate = Allowable Hourly Equipment Rate x 35%

NOTE: The monthly rate is the basic machine plus any attachments.

Standby rates shall apply when equipment is not in operation and is directed by the Engineer to standby for later use. In general, Standby rates shall apply when equipment is not in use, but will be needed again to complete The Work and the cost of moving the equipment will exceed the accumulated standby cost. Payment for standby time will not be made on any day the equipment operates for 8 or more hours. For equipment accumulating less than 8 hours operating time on any normal workday, standby payment will be limited to only that number of hours which, when added to the operating time for that day equals 8 hours. Standby payment will not be made on days that are not normally considered workdays.

The Department will not approve any rates in excess of the rates as outlined above unless such excess rates are supported by an acceptable breakdown of cost.

Payable time periods will not include:

- Time elapsed while equipment is broken down
- Time spent in repairing equipment, or
- Time elapsed after the Engineer has advised the Contractor the equipment is no longer needed

If a piece of equipment is needed which is not included in the above *Blue Book* rental rates, reasonable rates shall be agreed upon in writing before the equipment is used. All equipment charges by persons or firms other than the Contractor shall be supported by invoices.

Transportation charges for each piece of equipment to and from the site of The Work will be paid provided:

- The equipment is obtained from the nearest approved source
- The return charges do not exceed the delivery charges
- Haul rates do not exceed the established rates of licensed haulers, and
- Such charges are restricted to those units of equipment not already available and not on or near the Project

No additional compensation will be made for equipment repair.

5. **Miscellaneous:** No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
6. **Compensation:** The Contractor's representative and the Engineer shall compare records and agree on the cost of work done as ordered on a Force Account basis at the end of each day on forms provided by the Department.
7. **Subcontract Force Account Work:** For work performed by an approved Subcontractor or Second-tier Subcontractor, all provisions of this Section (109.05) that apply to the Prime Contractor in respect to labor, materials and equipment shall govern. The prime Contractor shall coordinate the work of his Subcontractor. The prime Contractor will be allowed an amount to cover administrative cost equal to 5% of the Subcontractor's amount earned but not to exceed \$5,000.00 per Subcontractor. Markup for Second-tier Subcontract work will not be allowed. Should it become necessary for the Contractor or Subcontractor to hire a firm to perform a specialized type of work or service which the prime Contractor or Subcontractor is not qualified to perform, payment will be made at reasonable invoice cost. To each invoice cost a markup to cover administrative cost equal to 5% of the total invoice but not to exceed \$5,000.00 will be allowed the Contractor or Subcontractor but not both.
8. **Statements:** No payment will be made for work performed on a Force Account basis until the Contractor has furnished the Engineer with duplicate itemized statements of the cost of such Force Account work detailed as follows:

- a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer, equipment operator, and supervisor, excluding superintendents.
- b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
- c. Quantities of materials, prices, and extensions.
- d. Transportation of materials.
- e. Cost of property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and Social Security tax.

Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not purchased specifically for such work but are taken from the Contractor's stock, then, in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Payment based on Force Account records shall constitute full payment and settlement of all additional costs and expenses including delay and impact damages caused by, arising from or associated with The Work performed.

### **109.06 Eliminated Items**

Should any Items contained in the Proposal be found unnecessary for the proper completion of The Work, the Engineer may, upon written order to the Contractor, eliminate such Items from the Contract, and such action shall in no way invalidate the Contract. When a Contractor is notified of the elimination of Items, he will be reimbursed for actual work done and all costs incurred, including mobilization of materials prior to said notifications.

### **109.07 Partial Payments**

#### **A. General**

At the end of each calendar month, the total value of Items complete in place will be estimated by the Engineer and certified for payment. Such estimate is approximate only and may not necessarily be based on detailed measurements. Value will be computed on the basis of Contract Item Unit Prices or on percentage of completion of Lump Sum Items.

When so requested by the Contractor and approved by the Engineer, Gross Earnings of \$500,000.00 or more for work completed within the first 15 days of any month will be certified for payment on a semi-monthly basis subject to the conditions and provisions of Subsection 109.07.A, Subsection 109.07.B.6, Subsection 109.07.C, Subsection 109.07.D, Subsection 109.07.E, and Subsection 109.07.F.

#### **B. Materials Allowance**

Payments will be made on delivered costs, or percentage of bid price if otherwise noted, with copies of paid invoices provided to the Department for the materials listed below which are to be incorporated into the Project provided the materials:

- Conform to all Specification requirements.
- Are stored on the Project Right-of-Way or, upon written request by the Contractor and written approval of the Engineer, they may be stored off the Right-of-Way, but local to the Project, provided such storage is necessary due to lack of storage area on the Right-of-Way, need for security, or need for protection from weather.

As a further exception to on-Project storage, upon written request by the Contractor, the Engineer may approve off-the-Project storage items uniquely fabricated or precast for a specific Project, such as structural steel and precast concrete, which will be properly marked with the Project number and stored at the fabrication or precast facility.

The Engineer may approve out-of-state storage for structural steel and prestressed concrete beams uniquely fabricated for a specific Project stored at the fabrication facility.

1. Paid invoices should accompany the materials allowance request, but in no case be submitted to the Project Engineer later than 30 calendar days following the date of the progress payment report on which the materials allowance was paid.

In case such paid invoices are not furnished within the established time, the materials allowance payment will be removed from the next progress statement and no further materials allowance will be made for that item on that Project.

2. Materials allowances will be paid for those items which are not readily available, and which can be easily identified and secured for a specific project and for which lengthy stockpiling periods would not be detrimental. Some exclusions are as follows:

- a. No payments will be made on living or perishable plant materials until planted.
  - b. No payments will be made on Portland Cement, Liquid Asphalt, or Grassing Materials.
  - c. No payment will be made for aggregate stockpiled in a quarry. Payment for stockpiled aggregate will be made only if the aggregate is stockpiled on or in the immediate vicinity of the project and is held for the exclusive use on that project. The aggregate must be properly secured. If the aggregate stockpiled is to be paid for per-ton (megagram) it must be reweighed on approved scales at the time it is incorporated into the Project.
  - d. No payments will be made on minor material items, hardware, etc.
3. No materials allowance will be made for materials when it is anticipated that those materials will be incorporated into The Work within 30 calendar days.
  4. No materials allowance will be made for a material when the requested allowance for such material is less than \$25,000.
  5. Where a storage area is used for more than one project, material for each project shall be segregated from material for other projects, identified, and secured. Adequate access for auditing shall be provided. All units shall be stored in a manner so that they are clearly visible for counting and/or inspection of the individual units.
  6. Materials allowance for prestressed concrete and structural steel bridge members may be processed for uncast or unfabricated members upon the Engineer's receipt of a true copy of the binding order for the members required by the plan. Such copy shall be sealed and notarized by both the contractor placing the order and the supplier therein identified to cast or fabricate said members. All orders shall demonstrate conformance to the approved plans and specifications regarding beam type, size, length, material quantities and shall not exceed the approved plan quantity. The materials allowance applied to uncast prestressed concrete members will be made in amount equal to 40% of the invoice for the respective member(s) to the contractor. The materials allowance applied to unfabricated structural steel bridge members will be made in amount equal to 55% of the invoice for the respective member(s) to the contractor. An additional material allowance may be requested separately upon completion of the casting or fabricating for a maximum 90% of the invoice for the member(s) provided there is adherence to all other provisions of this specification.
  7. The Commissioner may, at his discretion, grant waiver to the requirements of this Section when, in his opinion, such waiver would be in the public interest.

Subsequently, in the event the material is not on-hand and in the quantities for which the materials allowance was granted, the materials allowance payment will be removed from the next progress statement and no further materials allowance will be made for those items on that Project. If sufficient earnings are not available on the next progress statement, the Contractor agrees to allow the Department to recover the monies from any other Contract he may have with the Department, or to otherwise reimburse the Department.

Excluding item 6 above, payments for materials on hand shall not exceed the invoice price or 75 percent of the bid prices for the pay items into which the materials are to be incorporated, whichever is less.

### **C. Minimum Payment**

No partial payment will be made unless the amount of payment is at least \$1000.00.

### **D. Liquidated Damages**

Accrued liquidated damages will be deducted in accordance with Subsection 108.08.

### **E. Other Deductions**

In addition to the deductions provided for above, the Department has the right to withhold any payments due the Contractor for items unpaid by the Contractor for which the Department is directly responsible, including, but not limited to, royalties (see Section 106).

### **F. Amount of Payment**

The balance remaining after all deductions provided for herein have been made will be paid to the Contractor. Partial estimates are approximate and are subject to correction on subsequent progress statements. If sufficient earnings are not available on the subsequent progress statement, the Contractor agrees to allow the Department to recover the monies from any other Contract he may have with the Department, or to otherwise reimburse the Department. The Engineer is responsible for computing the amounts of all deductions herein specified, for determining the progress of the Work and for the items and amounts due to the Contractor during the progress of the Work and for the final statement when all Work has been completed.



## **G. Interest**

Under no circumstances will any interest accrue or be payable on any sums withheld or deducted by the Department as authorized by Subsection 109.07.A, Subsection 109.07.B.6, Subsection 109.07.C, Subsection 109.07.D, Subsection 109.07.E, and Subsection 109.07.F.

## **H. Insert the Following in Each Subcontract**

The Contractor shall insert the following in each Subcontract entered into for work under this Contract:

“The Contractor shall not withhold any retainage on Subcontractors. The Contractor shall pay the Subcontractor 100% percent of the gross value of the Completed Work by the Subcontractor as indicated by the current estimate certified by the Engineer for payment.”

Neither the inclusion of this Specification in the Contract between the Department and the Prime Contractor nor the inclusion of the provisions of this Specification in any Contract between the Prime Contractor and any of his Subcontractors nor any other Specification or Provision in the Contract between the Department and the Prime Contractor shall create, or be deemed to create, any relationship, contractual or otherwise, between the Department and any Subcontractor.

## **109.08 Final Payment**

When Final Inspection and Final Acceptance have been made by the Engineer as provided in Subsection 105.16, the Engineer will prepare the Final Statement of the quantities of the various classes of work performed. All prior partial estimates and payments shall be subject to correction in the Final Statement. The District Engineer will transmit a copy of the Statement to the Contractor by Registered or Certified Mail. The Contractor will be afforded 35 days in which to review the Final Statement in the District Office before it is certified for payment by the Engineer. Any adjustments will be resolved by the District Engineer or in case of a dispute referred to the Chief Engineer whose decision shall be final and conclusive. After approval of the Final Statement by the Contractor, or after the expiration of the 35 days, or after a final ruling on disputed items by the Chief Engineer, the Final Statement shall be certified to the Treasurer by the Chief Engineer stating the Project has been accepted and that the quantities and amounts of money shown thereon are correct, due and payable.

The Treasurer, upon receipt of the Engineer's certification, shall in turn furnish the Contractor with the Department's Standard Release Form to be executed in duplicate. The aforesaid Release Form, showing the total amount of money due the Contractor, shall be sent to the Contractor by Registered or Certified Mail, to be delivered to such Contractor upon the signing of a return receipt card, to be returned to the Department in accordance with the provision of Federal law in respect to such matters and such return receipt card shall be conclusive evidence of a tender of said sum of money to the Contractor. Upon receipt of the properly executed Standard Release Form, the Treasurer shall make final payment jointly to the Contractor and his Surety. The aforesaid certification, executed release form, and final payment shall be evidence that the Commissioner, the Engineer, and the Department have fulfilled the terms of the Contract, and that the Contractor has fulfilled the terms of the Contract except as set forth in his Contract Bond.

The Standard Release Form is to be executed by the Contractor within 45 days after delivery thereof, as evidenced by the Registered or Certified Mail Return Receipt. Should the Contractor fail to execute the Standard Release Form because he disputes the Final Payment as offered, or because he believes he has a claim for damages or additional compensation under the Contract, the Contractor shall, within 45 days after delivery to the Contractor of the Standard Release Form, as evidenced by the Registered or Certified Mail Return Receipt, enter suit in the proper court for adjudication of his claim. Should the Contractor fail to enter suit within the aforesaid 45 days, then by agreement hereby stipulated, he is forever barred and stopped from any recovery or claim whatsoever under the terms of this Contract.

Should the Contractor fail to execute the Standard Release Form or file suit within 45 days after delivery thereof, then the Surety on the Contractor's Bond is hereby constituted the attorney-in-fact of the Contractor for the purpose of executing such final releases as may be required by the Department, including but not limited to the Standard Release Form, and for the purpose of receiving the Final Payment under this Contract.

The Department reserves the right as defined in Subsection 107.20, should an error be discovered in any estimates, to claim and recover from the Contractor or his Surety, or both, such sums as may be sufficient to correct any error of overpayment. Such overpayment may be recovered from payments due on current active Projects or from any future State work done by the Contractor.

The foregoing provisions of this Section shall be applicable both to the Contractor and the Surety on his Bond; and, in this respect, the Surety shall be bound by the provisions of Subsection 108.09 of these Specifications in the same way and manner as the Contractor.

## **A. Interest**

In the event the Contractor fails to execute the *Standard Release Form* as prepared by the Treasurer because he disputes the amount of the final payment as stated therein, the amount due the Contractor shall be deemed by the Contractor and the Department to be an unliquidated sum and no interest shall accrue or be payable on the sum finally determined to be due to the Contractor for any period prior to final determination of such sum, whether such determination be by agreement of the Contractor and the Department or by final judgement of the proper court in the event of litigation between the Department and the Contractor. The Contractor specifically waives and renounces any and all rights it may have under Section 13-6-13 of the Official Code of Georgia and agrees that in the event suit is brought by the Contractor against the Department for any sum claimed by the Contractor under the Contract, for delay damages resulting from a breach of contract, for any breach of contract or for any extra or additional work, no interest shall be awarded on any sum found to be due from the Department to the Contractor in the final judgement entered in such suit. All final judgements shall draw interest at the legal rate, as specified by law. Also, the Contractor agrees that notwithstanding any provision or provisions of Chapter 11 of Title 13 of the Official Code of Georgia that the provisions of this contract control as to when and how the Contractor shall be paid for The Work. Further, the Contractor waives and renounces any and all rights it may have under Chapter 11 of Title 13 of the Official Code of Georgia.

## **B. Termination of Department's Liability**

Final payment will be in the amount determined by the statement as due and unpaid. The acceptance of the final payment or execution of the Standard Release Form or failure of the Contractor to act within 120 days as provided herein after tender of payment, or final payment to the Contractor's Surety in accordance with the provisions stipulated herein, shall operate as and be a release to the Department, the Commissioner, and the Engineer from all claims of liability under this contract and for any act or neglect of the Department, the Commissioner, or the Engineer.

# **109.09 Termination Clause**

## **A. General**

The Department may, by written notice, terminate the Contract or a portion thereof for the Department's convenience when the Department determines that the termination is in the State's best interest, or when the Contractor is prevented from proceeding with the Contract as a direct result of one of the following conditions:

1. An Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.
2. The Engineer and Contractor each make a determination, that, due to a shortage of critical materials required to complete the Work which is caused by allocation of these materials to work of a higher priority by the Federal Government or any agency thereof, it will be impossible to obtain these materials within a practical time limit and that it would be in the public interest to discontinue construction.
3. An injunction is imposed by a court of competent jurisdiction which stops the Contractor from proceeding with the Work and causes a delay of such duration that it is in the public interest to terminate the Contract and the Contractor was not at fault in creating the condition which led to the court's injunction.

The decision of the Engineer as to what is in the public interest and as to the Contractor's fault, for the purpose of Termination, shall be final.

4. Orders from duly constituted authority relating to energy conservation.

## **B. Implementation**

When, under any of the conditions set out in Subsection A of this Section, the Contract, or any portion thereof, is terminated before completion of all Items of Work in the Contract, the Contractor shall be eligible to receive some or all of the following items of payment:

1. For the actual number of units of Items of Work completed, payment will be made at the Contract Unit Price.
2. Reimbursement for organization of the Work and moving equipment to and from the job will be considered where the volume of work completed is too small to compensate the Contractor for these expenses under the Contract Unit Prices. However, the Engineer's decision as whether or not to reimburse for organization of the Work and moving equipment to and from the job, and in what amount, shall be final.
3. Acceptable materials, obtained by the Contractor for the Work, that have been inspected, tested, and accepted by the Engineer, and that are not incorporated in the Work will, at the request of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer. This will include any materials that have been delivered to the project site or that have been specifically fabricated for the project and are not readily usable on other projects. It will not include materials

that may have been ordered, but not delivered to the project site and that are readily usable on other projects (e.g., guard rail, stone, lumber, etc.).

4. For Items of Work partially completed, payment adjustments including payments to afford the Contractor a reasonable profit on work performed, may be made as determined by the Engineer based upon a consideration of costs actually incurred by the Contractor in attempting to perform the Contract.
5. No payment will be made, and the Department will have no liability, for lost profits on Work not performed. In particular, the Department will not be liable to the Contractor for all profits the Contractor expected to realize had the Project been completed, nor for any loss of business opportunities, nor for any other consequential damages.
6. In order that the Department may make a determination of what sums are payable hereunder, the Contractor agrees that, upon termination of the Contract, it will make all of its books and records available for inspection and auditing by the Department.

To be eligible for payment, costs must have been actually incurred, and must have been recorded and accounted for according to generally accepted accounting principles, and must be items properly payable under Department policies. Where actual equipment costs cannot be established by the auditors, payment for unreimbursed equipment costs will be made in the same manner as is provided in Subsection 109.05 for Force Account Work. Idle time for equipment shall be reimbursed at standby rates. In no case will the Contractor be reimbursed for idle equipment after the Engineer has advised the Contractor the equipment is no longer needed on the job. Refusal of the Contractor to allow the Department to inspect and audit all of the Contractor's books and records shall conclusively establish that the Department has no liability to the Contractor for any payment under this provision, and shall constitute a waiver by the Contractor of any claim for damages allegedly caused by breach or termination of the Contract. The amount payable under this provision, if any, is to be determined by the Engineer, whose determination will be final and binding.

7. The sums payable under this Subsection shall be the Contractor's sole and exclusive remedy for termination of the Contract.

### **C. Termination of a Contract**

Termination of a Contract or a portion thereof shall not relieve the Contractor of his responsibilities for any completed portion of the Work, nor shall it relieve his Surety of its obligation for and concerning any just claims arising out of the Work performed.

### **109.10 Interest**

In the event any lawsuit is filed against the Department alleging the Contractor is due additional money because of claims or for any breach of contract, the Contractor hereby waives and renounces any right it may have under O.C.G.A. Section 13-6-13 to prejudgment interest. Also, the Contractor agrees that notwithstanding any provision or provisions of Chapter 11 of Title 13 of the Official Code of Georgia that the provisions of this contract control as to when and how the Contractor shall be paid for The Work. Further, the Contractor waives and renounces any and all rights it may have under Chapter 11 of Title 13 of the Official Code of Georgia.

August 7, 2019

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
SPECIAL PROVISION**

**FULTON COUNTY  
P.I. No.: 0015019**

**SECTION 150 – TRAFFIC CONTROL**

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*Add the following:*

**150.6 Special Conditions:**

**A. Single Lane Closures**

1. Single lane closures are allowed between the hours of 9:00 am to 3:00 pm and 7:00 pm to 6:00 am Monday through Thursday.
2. Single lane closures are allowed between the hours of 9:00 am to 3:00 pm Friday and 7:00 pm Friday to 6:00 am Monday.

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION**

**PI No.: 0015019, Fulton County**

**Section 154 — Construction Vibration Monitoring**

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*Add the following:*

**154.1 General Description**

This Work consists of performing preconstruction crack surveys, seismograph and other monitoring of construction vibrations, and post construction crack surveys of the buildings located on Parcels 1, 2, 3, and 4 adjacent to the proposed project construction on 15<sup>th</sup> Street from West Peachtree Street NW to Williams Street NW by procuring the services of a prequalified subcontractor specializing in this work.

**154.1.01 Definitions**

General Provisions 101 through 150.

**154.1.02 Related References**

**A. Standard Specifications**

General Provisions 101 through 150.

**B. Referenced Documents**

General Provisions 101 through 150.

**154.1.03 Submittals**

**A. Prequalification of Subcontractor**

Submit the following documentation for the Engineer's review and approval a minimum of thirty days prior to beginning construction activities on the project:

Evidence of the subcontractor's successful completion of at least five projects similar in concept and scope to the proposed crack survey and vibration monitoring. Include names, addresses and telephone numbers of the owners' representatives for verification.

Résumés of employees performing this work. Provide evidence showing each employee possesses experience and knowledge similar in concept and scope of this work for performing crack surveys and installing and reading seismographs. Provide evidence that the reports will be reviewed and signed by a Georgia Licensed Professional Engineer or Georgia Licensed Professional Geologist. The Department will be sole judge of determining if employees are qualified to perform the work on this project.

A detailed survey plan, monitoring plan, and sequence of work that describes all materials, methods and equipment to be used to complete the crack survey and vibration monitoring.

**B. Construction Monitoring**

Submit the following documentation during construction monitoring:

Preconstruction Crack Survey Report documenting existing conditions of buildings prior to construction activities in accordance with subsection 154.3.03.B.

Monthly Seismograph Data and Data Summary Report and Activity Log of all construction activities within 500 feet (152 meters) of the seismograph in accordance with subsection 154.3.03.A.1.

Reports of building conditions regarding cracks or any other damage potentially caused by construction activities as complaints are received in accordance with subsection 154.3.03.C.

### **C. Post Construction**

Submit a Post Construction Crack Survey Report in accordance with subsection 154.3.03.D documenting post construction condition of cracks or damage identified in the pre-construction survey and cracks or any other damage potentially caused by construction activities.

## **154.2 Materials**

General Provision 101 through 150.

## **154.3 Construction Requirements**

### **154.3.01 Personnel**

Ensure all employees performing this work have been approved by the Engineer in accordance with subsection 154.1.03.A.

### **154.3.02 Equipment**

#### **A. Seismograph**

Use a seismograph(s) that is weather proof and capable of continuously recording particle velocity in three perpendicular components with a flat response of 2-250 HZ over a range of at least 0.01 to 5.0 inches per second (0.254 to 127 mm per second). Provide a seismograph(s) that employs an internal dynamic calibration during each recording sequence and that has been shake table tested within the previous 24 months verifying an accuracy of +/- 5% over the frequency range of 4 to 125 Hertz. Provide a recorder/ software system that is capable of digitally storing and reproducing vibration levels in tabular or histogram (bar graph) form at no greater than six minute intervals.

### **154.3.03 Construction**

Obtain Engineer's written approval of the Prequalification documents submitted in accordance with Subsection 154.1.03.A prior to beginning this work.

Perform the preconstruction crack survey prior to starting construction activities on the project.

Install and begin seismograph monitoring prior to starting excavation, shoring and backfilling construction activities on the project.

Maintain seismograph and crack monitoring until excavation, shoring and backfilling, compaction of subgrade, base and pavement construction activities on the project are complete.

#### **A. Seismograph Installation and Monitoring**

Monitor vibrations at building(s) using seismograph(s) when construction activities including, but not limited to, excavation, shoring installation, backfilling, pile driving, and compaction of subgrade, base and pavement are within 75 feet (23 meters) of the building(s), or otherwise have the potential to result in vibrations that may cause damage or complaints. Relocate seismograph(s) as needed. Protect the seismograph from weather and vandalism. Replace missing or damaged equipment at no cost to the Department. Document the following information at the time that the seismograph is installed:

Date and time of installation

Coordinates of installed instrument or Station and offset

Method of transducer attachment

Name and affiliation of the person installing the instrument

1. Monthly Seismograph Data and Data Summary Report and Activity Log:

Compile a Monthly Seismograph Data and Data Summary Report containing the data from the seismograph and a summarization of the data showing time and magnitude of the maximum vibration that has occurred each day.

Maintain an activity log of all construction activities within 500 feet (152 meters) of the seismograph Include the following data in each log:

Location of construction activity

Type of construction activity

Types and number of construction equipment being used, including model, manufacture and weight.

Date and times construction equipment was used.

Submit Monthly Seismograph Data Summary Report and Activity Log to the Engineer on a monthly basis.

**B. Preconstruction Crack Survey**

Complete a preconstruction crack survey on the outside and inside of all buildings located on Parcels 1, 2, 3, and 4. Document building conditions by taking photographs and detailed notes citing location, length and width of cracks. Compile documentation into a Preconstruction Crack Survey Report and submit to the Engineer.

**C. Building Monitoring**

Monitor buildings during construction for any new cracks and or elongation or widening of existing cracks. Provide a report of building conditions to the Engineer regarding cracks or any other damage potentially caused by construction activities as complaints are received.

**D. Post Construction Crack Survey**

Complete a post construction crack survey on the outside and inside of all buildings located on Parcels: 1, 2, 3, and 4. Document building conditions by taking photographs and detailed notes citing condition of cracks or damage identified in the pre-construction survey; also, location, length and width of cracks or any other damage potentially caused by construction activities.

**154.4 Measurement**

The Work under this Contract Item is not measured separately for payment.

**154.5 Payment**

This Contract Item completed and accepted will be paid for at the Lump Sum Price bid. Payment will be full compensation for furnishing and installing the seismograph(s), for monitoring and reporting vibration data recorded on the seismograph(s) and completing crack survey and documenting building conditions and providing copies of all data to the Engineer in accordance with this specification. Seismographs and all other measuring equipment and devices will remain property of the Contractor.

Payment will be made under:

Item No. 154-	Construction Vibration Monitoring	Per Lump Sum
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Office of Materials and Testing



**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION**

**Section 161—Control of Soil Erosion and Sedimentation**

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*Add the following:*

**161.1 General Description**

This Work includes using control measures shown on the Plans, ordered by the Engineer, or as required during the life of the Contract to control soil erosion and sedimentation through the use of any of the devices or methods referred to in this Section.

**161.1.01 Definitions**

Certified Personnel— certified personnel are defined as persons who have successfully completed the Level IA certification course approved by the Georgia Soil and Water Conservation Commission. For Department projects the certified person must also have successfully completed the Department's WECS certification course.

Design Professional as defined in the current GAR100002 NPDES permit.

**161.1.02 Related References**

**A. Standard Specifications**

[Section 105—Control of Work](#)

[Section 106—Control of Materials](#)

[Section 107—Legal Regulations and Responsibility to the Public](#)

[Section 109—Measurement and Payment](#)

[Section 160—Reclamation of Material Pits and Waste Areas](#)

[Section 162—Erosion Control Check Dams](#)

[Section 163—Miscellaneous Erosion Control Items](#)

[Section 166—Restoration or Alteration of Lakes and Ponds](#)

[Section 170—Silt Retention Barrier](#)

[Section 171—Temporary Silt Fence](#)

[Section 205—Roadway Excavation](#)

[Section 434—Sand Asphalt Paved Ditches](#)

[Section 441—Miscellaneous Concrete](#)

[Section 603—Rip Rap](#)

[Section 700—Grassing](#)

[Section 710—Permanent Soil Reinforcing Mat](#)

[Section 715—Bituminous Treated Roving](#)

[Section 716—Erosion Control Mats \(Blankets\)](#)

Erosion control measures contained in the Specifications include:

<b>Erosion Control Measure</b>	<b>Section</b>
Temporary Check Dams	<a href="#">163.3.05.J</a>
Bituminous Treated Mulch	<a href="#">700.3.05.G</a>
Concrete Paved Ditches	<a href="#">441</a>
Bituminous Treated Roving	<a href="#">715</a>
Erosion Control Mats (Blankets)	<a href="#">716</a>
Erosion Control Check Dams	<a href="#">162</a>
Grassing	<a href="#">700</a>
Maintenance of Temporary Erosion Control Devices	<a href="#">165</a>
Permanent Soil Reinforcing Mat	<a href="#">710</a>
Reclamation of Material Pits and Waste Areas	<a href="#">160</a>
Rip Rap	<a href="#">603</a>
Restoration or Alteration of Lakes and Ponds	<a href="#">166</a>
Sand-Asphalt Ditch Paving	<a href="#">434</a>
Sediment Basin	<a href="#">163.3.05.C</a>
Silt Control Gate	<a href="#">163.3.05.A</a>
Silt Retention Barrier	<a href="#">170</a>
Sod	<a href="#">700.3.05.H</a> & <a href="#">700.3.05.I</a>
Mulch	<a href="#">163</a>
Temporary Grassing	<a href="#">163.3.05.F</a>
Temporary Silt Fence	<a href="#">171</a>
Temporary Slope Drains	<a href="#">163.3.05.B</a>
Triangular Sediment Barrier	<a href="#">720</a>
Silt Filter Bag	<a href="#">719</a>
Organic & Synthetic Material Fiber Blanket	<a href="#">713</a>

**B. Referenced Documents**

Erosion and Sedimentation Pollution Control Plans (ESPCP)

**161.1.03 Submittals**

**A. Status of Erosion Control Devices**

The Worksite Erosion Control Supervisor (WECS) or certified personnel will inspect the installation and maintenance of the Erosion Control Devices according to [Subsection 167.3.05.B](#) and the ESPCP.

1. Submit all reports to the Engineer within 24 hours of the inspection. Refer to [Subsection 167.3.05.C](#) for report requirements.

2. The Engineer will review the reports and inspect the Project for compliance and concurrence with the submitted reports.
3. The Engineer will notify the WECS or certified personnel of any additional items that should be added to the reports.
4. Items listed in the report requiring maintenance or correction shall be completed within 72 hours.

## **B. Erosion and Sedimentation Pollution Control Plan**

### **1. Project Plans**

An erosion and sedimentation pollution control plan (ESPCP) for the construction of the project will be provided by the Department. The ESPCP will be prepared for the various stages of construction necessary to complete the project.

If the Contractor elects to alter the stage construction from that shown in the plans, it will be the responsibility of the Contractor to have the plans revised and prepared in accordance with the current GAR100002 NPDES permit by a Design Professional to reflect all changes in Staging. This will also include any revisions to erosion and sedimentation control item quantities. If the changes affect the Comprehensive Monitoring Program (CMP), the Contractor will be responsible for any revisions to the CMP as well. Submit revised plans and quantities to the Engineer for review prior to land disturbing activities.

### **2. Haul Roads, Borrow Pits, Excess Material Pits, etc.**

The Contractor is responsible for preparing erosion and sedimentation control plans for construction access roads and or haul roads borrow pits, excess material pits, etc (inside the Right of Way). Prepare these plans for all stages of construction and include the appropriate items and quantities. Submit these plans to the Engineer for review prior to land disturbing activities. These plans are to be prepared by a Design Professional.

If construction of access roads, haul roads, borrow pits, excess material pits, etc., (inside the Right of Way) encroach within the 25 foot (7.6 m) buffer along the banks of all state waters or within the 50 ft. (15 m) buffer along the banks of any state waters classified as a "trout stream", a state water buffer variance must be obtained by the Contractor prior to beginning any land disturbing activity in the stream buffer.

### **3. Erosion Control for Borrow and Excess Material Pits Outside the Right-of-Way**

Erosion control for borrow pits and excess material pits outside the right of way is the responsibility of the Contractor. If borrow or excess material pits require coverage under the National Pollutant Discharge Elimination System permit (NPDES) or other permits or variances are required, submit a copy of all documentation required by the permitting agency to the Engineer. All costs associated with complying with local, state, and federal laws and regulations are the responsibility of the Contractor.

### **4. Culverts and Pipes**

The ESPCP does not contain approved methods to construct a stream diversion or stream diversion channel. The Contractor shall prepare a diversion plan utilizing a Design Professional as defined in the current NPDES permit. See 161.3.05 G for additional information.

### **5. Temporary Asphalt or Concrete Batch Plants**

In addition to the requirements of any applicable specifications, if the Department authorizes the temporary installation and use of any asphalt, concrete or similar batch plants within its right of way, the contractor shall submit an NOI to the Georgia Environmental Protection Division for coverage under the following NPDES permits; The Infrastructure permit for the construction of the plant, and the Industrial permit for the operation of, such a plant. The contractor shall submit the NOIs as both the Owner and the Operator.

## 161.2 Materials

General Provisions 101 through 150.

### 161.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

## 161.3 Construction Requirements

### 161.3.01 Personnel

#### A. Duties of the Worksite Erosion Control Supervisor

Before beginning Work, designate a Worksite Erosion Control Supervisor (WECS) to initiate, install, maintain, inspect, and report the condition of all erosion control devices as described in Sections 160 through 171 or in the Contract and ESPCP documents. The designee shall submit their qualifications on the Department provided resume form for consideration and approval. The contractor may utilize additional persons having WECS qualifications to facilitate compliance however, only one WECS shall be designated at a time.

The WECS and alternates shall:

- Be an employee of the Prime Contractor.
- Have at least one year of experience in erosion and sediment control, including the installation, inspection, maintenance and reporting of BMPs.
- Successfully completed the Georgia Soil and Water Conservation Commission Certification Course Level IA and the Department's WECS Certification Course.
- Provide phone numbers where the WECS can be located 24 hours a day.

The WECS' duties include the following:

1. Be available or have an approved representative available 24 hours a day and have access to the equipment, personnel, and materials needed to maintain erosion control and flooding control.
2. Inform the Engineer in writing whenever the alternate WECS assumes project responsibilities.
3. Ensure that erosion control deficiencies are corrected within seventy two (72) hours or immediately during emergencies. Deficiencies that interfere with traffic flow, safety or downstream turbidity are to be corrected immediately.
4. During heavy rain, have the construction area patrolled day or night, any day of the week to quickly detect and correct erosion or flooding problems before they interfere with traffic flow, safety, or downstream turbidity.
5. Be on the site within three (3) hours after receiving notification of an emergency prepared to positively respond to the conditions encountered. The Department may handle emergencies without notifying the Contractor. The Department will recover costs for emergency maintenance work according to [Subsection 105.15, "Failure to Maintain Roadway or Structures."](#)
6. Maintain and submit for project record, "As-built" Erosion and Sedimentation Control Plans that supplement and graphically depict EC-1 reported additions and deletions of BMPs. The As-Built plans are to be accessed and retained at a Department facility at all times.
7. Ensure that both the WECS and the alternate meet the criteria of this Subsection.
8. The WECS shall maintain a current certification card for the duration of the project. Recertification of the WECS will be required prior to the expiration date shown on the Certification card in order to remain as Certified Personnel and the WECS for the project.

Failure of the WECS or alternate to perform the duties specified in the Contract, or whose performance, has resulted in a citation being received from a State or Federal Regulatory Agency, e.g. the Georgia Environmental Protection Division, shall result in one or more of the following;

- Suspension of the WECS' certification for a period of not less than 30 days
- Removal of the Contractor's project superintendent in accordance with Sections 105.05 and 108.05 for a period not less than 14 days
- Department wide revocation of the WECS certification for a period of 12 months
- Removal of the Contractor's project superintendent in accordance with Sections 105.05 and 108.05

### **161.3.02 Equipment**

General Provisions 101 through 150.

### **161.3.03 Preparation**

General Provisions 101 through 150.

### **161.3.04 Fabrication**

General Provisions 101 through 150.

### **161.3.05 Construction**

Coordinate the temporary and permanent erosion control provisions in this Specification with the permanent erosion control provisions in the Contract to ensure economical, effective, and continuous erosion control throughout the construction and post-construction periods.

At all times that land disturbing activity is underway, a person meeting the requirements of, "certified person" by the GSWCC (Level IA) must be on the project.

#### **A. Control Dust Pollution**

The contractor shall keep dust pollution to a minimum during any of the activities performed on the project. It may be necessary to apply water or other BMPs to roadways or other areas reduce pollution.

#### **B. Perform Permanent or Temporary Grassing**

Perform permanent grassing, temporary grassing, or mulching on cut and fill slopes weekly (unless a shorter period is required by Subsection 107.23) during grading operations. When conditions warrant, the Engineer may require more frequent intervals.

Under no circumstances shall the grading ( height of cut) exceed the height operating range of the grassing equipment. It is extremely important to obtain a cover, whether it is mulch, temporary grass or permanent grass. Adequate mulch is a must.

When grading operations or other soil disturbing activities have stopped, perform grassing or erosion control as shown in the Plans, as shown in an approved Plan submitted by the Contractor, or as directed by the Engineer.

#### **C. Seed and Mulch**

Refer to Subsection [161.3.05.B, "Perform Permanent or Temporary Grassing"](#).

#### **D. Implement Permanent or Temporary Erosion Control**

1. Silt fence shown along the perimeter, e.g. right of way, and sediment containment devices, e.g. sediment basins, shall be installed prior to or concurrently with clearing and grubbing operations.
2. Incorporate permanent erosion control features into the Project at the earliest practicable time, e.g. velocity dissipation, permanent ditch protection.
3. Use temporary erosion control measures to address conditions that develop during construction but were unforeseen during the design stage.
4. Use temporary erosion control measures when installation of permanent erosion control features cannot be accomplished.

The Engineer has the authority to:

- Limit the surface area of erodible earth material exposed by clearing and grubbing.
- Limit the surface area of erodible earth material exposed by excavation and borrow and fill operations.
- Limit the area of excavation, and embankment operations in progress to correspond with the Contractor's ability to keep the finish grading, mulching, seeding, and other permanent erosion control measures current.
- Direct the Contractor to provide immediate permanent or temporary erosion control to prevent contamination of adjacent streams or water courses, lakes, ponds, or other areas of water impoundment.

Such Work may include constructing items listed in the table in [Subsection 161.1.02.A, "Related References"](#) or other control devices or methods to control erosion.

#### **E. Erodible Area**

**NOTE: Never allow the surface area of erodible earth material exposed at one time to exceed 17 acres (7 ha) except as approved by the State Construction Engineer.**

The maximum of 17 acres (7 ha) of exposed erodible earth applies to the entire Project and to all of its combined operations as a whole, not to the exposed erodible earth of each individual operation.

Upon receipt of a written request from the contractor the State Construction Engineer, or his designee, will review; the request, any justifications and the Project conditions for waiver of the 17 acres (7 ha) limitation.

If the 17 acre limitation is increased by the State Construction Engineer, the WECS shall not be assigned to another project in that capacity and should remain on site each work day that the exposed acreage exceeds 17 acres.

After installing temporary erosion control devices, e.g., grassing, mulching, stabilizing an area, and having it approved by the Engineer, that area will be released from the 17 acres (7 ha) limit.

## **F. Perform Grading Operations**

Perform the following grading operations:

1. Complete each roadway cut and embankment continuously, unless otherwise specified in the Contract or ordered by the Engineer.
2. Maintain the top of the earthwork in roadway sections throughout the construction stages to allow water to run off to the outer edges. .
3. Provide temporary slope drain facilities with inlets and velocity dissipaters (straw bales, silt fence, aprons, etc.) to carry the runoff water to the bottom of the slopes. Place drains at intervals to handle the accumulated water.
4. Continue temporary erosion control measures until permanent drainage facilities have been constructed, pavement placed, and the grass on planted slopes stabilized to deter erosion.

## **G. Perform Construction in Rivers and Streams**

Perform construction in river and stream beds as follows:

1. Unless otherwise agreed to in writing by the Engineer, restrict construction operations in rivers, streams, and impoundments to:
  - Areas where channel changes or access for construction are shown on the Plans to construct temporary or permanent structures.
2. If channel changes or diversions are not shown on the Plans, the Contractor shall develop diversion plans prepared in accordance with the current GAR100002 NPDES Infrastructure Construction permit utilizing a design professional as defined within the permit. The Engineer will review prepared diversion plans for content only and accepts no responsibility for design errors or omissions. Amendments will be made part of the project plans by attachment. Include any associated costs in the price bid for the overall contract. Any contract time associated with the submittal or its review and subsequent response will not be considered for an extension of Contract time. All time associated with this subsection shall be considered incidental.
3. If additional access for construction or removal of work bridges, temporary roads/access or work platforms is necessary, and will require additional encroachment upon river or stream banks and bottoms, the contractor shall prepare a plan in accordance with the current GAR100002 NPDES Infrastructure Construction permit utilizing a design professional as defined within the permit. Plans should be submitted at least 12 weeks prior to the date the associated work is expected to begin. If necessary, the plan will be provided to the appropriate regulating authority, e.g. United States Army Corps of Engineers by the Department for consideration and approval. No work that impacts areas beyond what has been shown in the approved plans will be allowed to begin until written approval of the submitted plan has been provided by the Department. Approved plan amendments will be made part of the project plans by attachment. Include any associated costs in the price bid for the overall contract. Any contract time associated with the submittal or its review and subsequent response will not be considered for an extension of Contract time. All time associated with this subsection shall be considered incidental.
4. Clear rivers, streams, and impoundments of the following as soon as conditions permit:
  - Falsework
  - Piling that is to be removed
  - Debris
  - Other obstructions placed or caused by construction operations
5. Do not ford live streams with construction equipment.
6. Use temporary bridges or other structures that are adequate for a 25-year storm for stream crossings. Include costs in the price bid for the overall contract.
7. Do not operate mechanized equipment in live streams except to construct channel changes or temporary or permanent structures, and to remove temporary structures, unless otherwise approved in writing by the Engineer.

## H. State Water Buffers and Environmental Restrictions

1. The WECS shall review the plans and contract documents for environmental restrictions, Environmentally Sensitive Areas (ESA), e.g. buffers, etc prior to performing land disturbing activities.
2. The WECS shall ensure all parties performing land disturbing activities within the project limits are aware of all environmental restrictions.
3. Buffer delineation shall be performed prior to clearing, or any other land disturbing activities. Site conditions may require temporary delineation measures are implemented prior to the installation of orange barrier/safety fencing. The means of temporary delineation shall have the Engineer's prior approval.
4. The WECS shall allow the Engineer to review the buffer delineation prior to performing any land disturbing activities, including but not limited to clearing, grubbing and thinning of vegetation. Any removal and relocation of buffer delineation based upon the Engineer's review will not be measured for separate payment.
5. The WECS shall advise the Engineer of any surface water(s) encountered that are not shown in the plans. The WECS shall prevent land disturbing activities from occurring within surface water buffers until the Engineer provides approval to proceed.

## I. General Requirements

### **Projects that consist of asphalt resurfacing, shoulder reconstruction and/or shoulder widening; schedule and perform the construction of the project to comply with the following:**

After temporary and permanent erosion control devices are installed and the area permanently stabilized (temporary or permanent) and approved by the Engineer, the area may be released from the 1 acre (0.4 ha) limit.

The maximum of 1 acre (0.4 ha) of erodible earth applies to the entire project and to all combined operations, including borrow and excess material operations that are within the right of way, not 1 acre (0.4 ha) of exposed erodible earth for each operation.

**NOTE: Never allow the surface area of erodible earth material exposed at one time to exceed 1 acre (0.4 ha).**

1. Do not allow the disturbed exposed erodible area to exceed 1 acres (0.4 ha). This 1 acre (0.4 ha) limit includes all disturbed areas relating to the construction of the project including but not limited to slope and shoulder construction.
2. At the end of each working day, permanently stabilize all of the area disturbed by slope and shoulder reconstruction to prevent any contamination of adjacent streams or other watercourses, lakes, ponds or other areas of water impoundment. For purposes of this Specification, the end of the working day is defined as when the construction operations cease. For example, 6:00 a.m. is the end of the working day on a project that allows work only between 9:00 p.m. and 6:00 a.m.)
3. Stabilize the cut and fill slopes and shoulder with permanent or temporary grassing and a Wood Fiber Blanket ([Section 713](#), Type II). Mulching is not allowed. Borrow pits, soil disposal sites and haul roads will not require daily applications of wood fiber blanket. The application rate for the Wood Fiber Blanket on shoulder reconstruction is the rate specified for Shoulders. For shoulder reconstruction, the ground preparation requirements of [Subsection 700.3.05.A.1](#) are waived. Preparation consists of scarifying the existing shoulders 4 to 6 in (100 to 150 mm) deep and leaving the area in a smooth uniform condition free from stones, lumps, roots or other material.



4. If a sudden rain event occurs that would not allow the Contractor to apply the Type II Wood Fiber Blanket per [Section 713](#), install Wood Fiber Blanket Type I per [Section 713](#) if directed by the Engineer. Wood Fiber Blanket Type I application is for emergency use only.

Install temporary grass or permanent grass according to seasonal limitations and Specifications. When temporary grass is used, use the overseeding method ([Subsection 700.3.05.E.4](#)) when planting permanent grass.

3. Remove and dispose of all material excavated for the trench widening operation at an approved soil disposal site by the end of each working day. When shoulder reconstruction is required, this material may be used to reconstruct the graded shoulder after all asphaltic concrete pavement has been placed.

4. Provide immediate permanent and/or temporary erosion control measures for borrow pits, soil disposal sites and haul roads to prevent any contamination of adjacent streams or other watercourses, lakes, ponds or other areas of water impoundment.

5. Place asphalt in the trench the same day as the excavation occurs. Place asphalt or concrete in driveways and side roads being re-graded the same day as the excavation occurs. Stabilize any disturbed or exposed soil that is not covered with asphalt with a Wood Fiber Blanket (and grass seed). Payment will be made for the Wood Fiber Blanket and grass seed only if the shoulder has been constructed to final dimensions and grade and no further grading will be required.

6. Do not allow the grading (height of cut or fill) to exceed the operating range of the grassing equipment.

7. When grading operations or other soil disturbing activities are suspended, regardless of the reason, promptly perform all necessary permanent stabilization and/or erosion control work.

8. Use temporary erosion control measures to:

To correct conditions that develop during construction but were unforeseen during the design stage.

To use as needed before installing permanent erosion control features.

To temporarily control erosion that develops during normal construction practices but are not associated with permanent control features on the Project.

9. When conditions warrant, such as unfavorable weather (rain event), the Engineer may require more frequent intervals for this work.

#### **161.3.06 Quality Acceptance**

Before Final Acceptance of the Work, clean drainage structures within the project limits, both existing and newly constructed, and ensure that they are functioning properly. Costs to accomplish this work are incidental and shall be included in the overall bid for the Contract.

#### **161.3.07 Contractor Warranty and Maintenance**

Maintain the erosion control features installed to:

- Contain erosion within the limits of the right-of-way
- Control storm water discharges from disturbed areas

Effectively install and maintain the erosion control features. Ensure these features contain the erosion and sediment within the limits of the rights of way and control the discharges of storm-water from disturbed areas to meet all local, state, and federal requirements on water quality.

If a construction Project has separate contractors, the Prime Contractor shall maintain the erosion control features at grading sites as acceptable to the Engineer until the Contract is accepted. If any erosion control devices are damaged by any contractor either by neglect, by construction methods, or any other reasons, including acts of nature, they shall be repaired within 24 hours by the Prime Contractor at no cost to the Department.

## **161.4 Measurement**

Control of soil erosion and sedimentation is not measured separately for payment.

### **161.4.01 Limits**

General Provisions 101 through 150.

## **161.5 Payment**

When no pay item is shown in the Contract, the requirements of this Specification and the Erosion Control Plan shall be in full effect. The cost of complying with these requirements will not be paid for separately, but shall be included in the overall bid submitted with the exception of inspections performed by qualified personnel which will be included in Section 167.

When listed as a pay item in the Contract, payment will be made at the unit price bid for each particular item.

No payment will be made for erosion control outside the Right-of-Way or construction easements except as provided for by the Plans.

### **161.5.01 Enforcement and Adjustments**

#### **A. Failure to Provide a WECS**

If a designated WECS is not maintained or if the Contractor does not comply with this Specification, cease activities except traffic control and erosion control work. Monies that are due or that may become due also may be withheld according to the Specifications

#### **B. Failure to submit reports**

A non-refundable deduction will be taken from the schedule below whenever the WECS fails to submit completed reports required by [Subsection 167.3.05.C](#) in accordance with the provisions of this specification.

#### **C. Failure to Comply with Specifications**

If the Contractor fails to comply with any of the requirements of this Specification, all activities shall cease immediately except traffic control and erosion control related work.

Monies that are currently due or that may become due shall be withheld according to the specifications. In addition, nonrefundable monies shall be deducted from the contract as shown in the Schedule of Deductions table below. These deductions are in addition to any actions taken in the above subsections. Deductions assessed for uncorrected deficiencies shall continue until all corrections are completed to the satisfaction of the Engineer.

#### **D. Receipt of a Consent Order or Notice of Violation, etc**

Regulatory enforcement actions will be resolved including at a minimum the following steps;

- The Department will perform an internal review of the alleged violations
- The Department will then meet with the Contractor to review and further determine responsibilities for the alleged violations
- The Department will then arrange to collectively meet with the regulatory agencies to negotiate resolutions and/or settlements.

The Department does not waive any rights of the Contractor to resolve such matters however, in the event that regulatory agency communication is addressed jointly to the Department and to the contractor, the Department reserves the right to coordinate all communications, e.g., written correspondence, and to schedule jointly attended meetings with Regulatory agencies such that timely and accurate responses are known to the Department.

Such Orders or Notices may result in the assessment of Deductions from the table below for each day the condition remains non-compliant following an agreed remedy.

Monetary penalties for which the contractor is obligated for as a result of regulatory enforcement may be withheld from future monies due the contractor.

Schedule of Deductions for Each Calendar Day of Erosion Control Deficiencies Initial Occurrence* Original Total Contract Amount		
From More Than	To and Including	Daily Charge
0	\$100,000	\$750
\$100,000	\$1,000,000	\$1125
\$1,000,000	\$5,000,000	\$2000
\$5,000,000	\$15,000,000	\$3000
\$15,000,000	-	\$5000

\*Continued non-compliance with the requirements of this specification may result in the doubling of the above tabulated Daily Charge.

Upon written request from the Contractor, the Engineer may allow, limited activities to concurrently proceed once significant portions of the corrective work have been completed. This authorization may be similarly rescinded if in the opinion of the Engineer corrective work is not being diligently pursued.

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SUPPLEMENTAL SPECIFICATION**

**Section 163—Miscellaneous Erosion Control Items**

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*Delete Section 163 and substitute the following:*

**163.1 General Description**

This work includes constructing and removing:

- Silt control gates
- Temporary erosion control slope drains shown on the Plans or as directed
- Temporary sediment basins
- Sediment barriers and check dams
- Rock filter dams
- Stone filter berms
- Stone filter rings
- Temporary sediment traps
- Other temporary erosion control structures shown on the Plans or directed by the Engineer

This work also includes applying mulch (e.g., straw, hay, erosion control compost), and temporary grass.

**163.1.01 Related References**

**A. Standard Specifications**

[Section 109—Measurement and Payment](#)

[Section 161—Control of Soil Erosion and Sedimentation](#)

[Section 171—Temporary Silt Fence](#)

[Section 500—Concrete Structures](#)

[Section 603—Riprap](#)

[Section 700—Grassing](#)

[Section 711—Turf Reinforcement Matting](#)

[Section 716—Erosion Control Mats \(Slopes\)](#)

[Section 720 – Triangular Silt Barrier](#)

[Section 800—Coarse Aggregate](#)

[Section 801—Fine Aggregate](#)

[Section 822—Emulsified Asphalt](#)

[Section 860—Lumber and Timber](#)

[Section 863—Preservative Treatment of Timber Products](#)

[Section 881—Fabrics](#)

[Section 890—Seed and Sod](#)

[Section 893—Miscellaneous Planting Materials](#)

## B. Referenced Documents

AASHTO M252

AASHTO M294

### 163.1.02 Submittals

Provide written documentation to the Engineer as to the average weight of the bales of mulch.

### 163.2 Materials

Provide materials shown on the Plans, such as pipe, spillways, wood baffles, and other accessories including an anti-seep collar, when necessary. The materials shall remain the Contractor's property after removal, unless otherwise shown on the Plans.

Materials may be new or used; however, the Engineer shall approve previously used materials before use.

Materials shall meet the requirements of the following Specifications:

Material	Section
Mulch	<a href="#">893.2.02</a>
Temporary Silt Fence	<a href="#">171</a>
Concrete Aprons and Footings shall be Class A	<a href="#">500</a>
Riprap	<a href="#">603</a>
Temporary Grass	<a href="#">700</a>
Triangular Silt Barrier	<a href="#">720</a>
Lumber and Timber	<a href="#">860.2.01</a>
Preservative Treatment of Timber Products	<a href="#">863.1</a>
Corrugated Polyethylene Temporary Slope Drain Pipe	AASHTO M252 or M294

#### 163.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

### 163.3 Construction Requirements

#### 163.3.01 Personnel

General Provisions 101 through 150.

#### 163.3.02 Equipment

General Provisions 101 through 150.

#### 163.3.03 Preparation

General Provisions 101 through 150.

#### 163.3.04 Fabrication

General Provisions 101 through 150.

#### 163.3.05 Construction

##### A. Silt Control Gates

If silt control gates are required or are directed by the Engineer, follow these guidelines to construct them:

1. Clear and grade only that portion of the roadway within the affected drainage area where the drainage structure will be constructed.
2. Construct or install the drainage structure and backfill as required for stability.
3. Install the silt control gate at the inlet of the structure. Use the type indicated on the Plans.
4. Vary the height of the gate as required or as shown on the Plans.

5. Finish grading the roadway in the affected drainage area. Grass and mulch slopes and ditches that will not be paved. Construct the ditch paving required in the affected area.
6. Keep the gate in place until the work in the affected drainage area is complete and the erodible area is stabilized.
7. Remove the Type 1 silt gate assembly by sawing off the wood posts flush with the concrete apron. Leave the concrete apron between the gate and the structure inlet in place. The gate shall remain the property of the Contractor.

#### **B. Temporary Slope Drains**

If temporary slope drains are required, conduct the roadway grading operation according to [Section 161](#) and follow these guidelines:

1. Place temporary pipe slope drains with inlets and velocity dissipaters (straw bales, silt fence, or aprons) according to the Plans.
2. Securely anchor the inlet into the slope to provide a watertight connection to the earth berm. Ensure that all connections in the pipe are leak proof.
3. Place temporary slope drains at a spacing of 350 ft (105 m) maximum on a 0% to 2% grade and at a spacing of 200 ft (60m) maximum on steeper grades, or more frequently as directed by the Engineer. Keep the slope drains in place until the permanent grass has grown enough to control erosion.
4. Remove the slope drains and grass the disturbed area with permanent grass. However, the temporary slope drains may remain in place to help establish permanent grass if approved by the Engineer.

#### **C. Temporary Sediment Basins**

Construct temporary sediment basins according to the Plans at the required locations, or as modified by the Engineer.

1. Construct the unit complete as shown, including:
  - Grading
  - Drainage
  - Riprap
  - Spillways
  - Anti-seep collar
  - Temporary mulching and grassing on internal and external slopes
  - Accessories to complete the basin
2. When the sediment basin is no longer needed, remove and dispose of the remaining sediment.
3. Remove the sediment basin. Grade to drain and restore the area to blend with the adjacent landscape.
4. Mulch and permanently grass the disturbed areas according to [Section 700](#).

#### **D. Sediment Barriers**

Construct sediment barriers according to the Plan details.

The following items may be used for sediment barriers

1. Type A Silt Fence.
2. Type C Silt Fence.
3. Rectangular, mechanically produced and standard-sized baled wheat straw.
4. Triangular Silt Barrier.
5. Synthetic Fiber: Use synthetic fiber bales of circular cross section at least 18 in (450 mm) in diameter. Use synthetic bales of 3 ft or 6 ft (0.9 m or 1.8 m) in length that are capable of being linked together to form a continuous roll of the desired total length. Use bales that are enclosed in a geotextile fabric and that contain a pre-made stake hole for anchoring.
6. Coir: Use coir fiber bales of circular cross section at least 16" (400mm) in diameter. Use coir bales of 10 ft, 15 ft, or 20 ft (3 m, 4.5 m, or 6 m) in length. Use coir baled with coir twine netting with 2 in X 2 in (50 mm X 50 mm) openings. Use coir bales with a dry density of at least 7 lb/ft<sup>3</sup> (112 kg/m<sup>3</sup>). Anchor in place with 2 in X 4 in (50 mm X 100 mm) wooden wedges with a 6 in (150 mm) nail at the top. Place wedges no more than 36 in (900 mm) apart.
7. Excelsior: Use curled aspen excelsior fiber with barbed edges in circular bales of at least 18 in (450 mm) in diameter and nominally 10 ft (3 m) in length. Use excelsior baled with polyester netting with 1 in X 1 in (25 mm by 25 mm) triangular openings. Use excelsior bales with a dry density of at least 1.4 lb/ft<sup>3</sup> (22 kg/m<sup>3</sup>). Anchor in place with 1 in (25 mm) diameter wooden stakes driven through the netting at intervals of no more than 2 ft (600 mm).

8. Compost Filter Sock: Use general use compost (see Subsection 893.2.02.A.5.b) in circular bales at least 18 in diameter. Use compost baled with photo-degradable plastic mesh 3 mils thick with a maximum 0.25 in X 0.25 in (6 mm X 6 mm) openings. Anchor in place with 1 in (25 mm) diameter wooden stakes driven through the netting at intervals of no more than 2 ft (600 mm). The sock shall be dispersed on site when no longer required, as determined by the Engineer. Do not use Compost Filter Socks in areas where the use of fertilizer is restricted.
9. Compost Filter Berm: Use erosion control compost (see [Subsection 893.2.02](#)) to construct a noncompacted 1.5 ft to 2 ft (450 mm to 600 mm) high trapezoidal berm which is approximately 2 ft to 3 ft (600 mm to 1 m) wide at the top and minimum 4 ft (1.2 m) wide at the base. Do not use Compost Filter Berms in areas where the use of fertilizer is restricted.

The construction of the compost filter berm includes the following:

- a. Keeping the berm in a functional condition.
- b. Installing additional berm material when necessary.
- c. Removing the berm when no longer required, as determined by the Engineer. At the Engineer's discretion, berm material may be left to decompose naturally, or distributed over the adjacent area.

#### **E. Other Temporary Structures**

When special conditions occur during the design stage, the Plans may show other temporary structures for erosion control with required materials and construction methods.

#### **F. Temporary Grass**

Use a quick-growing species of temporary grass such as rye grass, millet, or a cereal grass suitable to the area and season.

Use temporary grass in the following situations:

- When required by the Specifications or directed by the Engineer to control erosion where permanent grassing cannot be planted.
- To protect an area for longer than mulch is expected to last (60 calendar days), plant temporary grass as follows:
  1. Use seeds that conform to Subsection 890.2.01, "Seed." Perform seeding according to [Section 700](#); except use the minimum ground preparation necessary to provide a seed bed if further grading is required.
  2. Prepare areas that require no further grading according to Subsection 700.3.05.A, "Ground Preparation." Omit the lime unless the area will be planted with permanent grass without further grading. In this case, apply the lime according to [Section 700](#).
  3. Apply mixed grade fertilizer at 400 lbs/acre (450 kg/ha). Omit the nitrogen. Mulch (with straw or hay) temporary grass according to [Section 700](#). (Erosion control compost Mulch will not be allowed with grassing.)
  4. Before planting permanent grass, thoroughly plow and prepare areas where temporary grass has been planted according to Subsection 700.3.05.A, "Ground Preparation".
  5. Apply Polyacrylamide (PAM) to all areas that receive temporary grassing.
  6. Apply PAM (powder) before grassing or PAM (emulsion) to the hydroseeding operation.
  7. Apply PAM according to manufacturer specifications.
  8. Use only anionic PAM.

For projects that consist of shoulder reconstruction and/or shoulder widening, refer to Section 161.3.05H for Wood Fiber Blanket requirements.

#### **G. Mulch**

When staged construction or other conditions prevent completing a roadway section continuously, apply mulch (straw or hay or erosion control compost) to control erosion. Mulch may be used without temporary grassing for 60 calendar days or less. Areas stabilized with only mulch (straw/hay) shall be planted with temporary grass after 60 calendar days.

Apply mulch as follows:

1. Mulch (Hay or Straw) - Without Grass Seed
  - a. Uniformly spread the mulch over the designated areas from 2 in to 4 in (50 mm to 100 mm) thick.
  - b. After spreading the mulch, walk in the mulch by using a tracked vehicle (preferred method), empty sheep foot roller, light disking, or other means that preserves the finished cross section of the prepared areas. The Engineer will approve of the method.

- c. Place temporary mulch on slopes as steep as 2:1 by using a tracked vehicle to imbed the mulch into the slope.
  - d. When grassing operations begin, leave the mulch in place and plow the mulch into the soil during seed bed preparation. The mulch will become beneficial plant food for the newly planted grass.
2. Erosion control compost - Without Grass Seed
- a. Uniformly spread the mulch (erosion control compost) over the designated areas 2 in (50 mm) thick.
  - b. When rolling is necessary, or directed by the Engineer, use a light corrugated drum roller.
  - c. When grassing operations begin, leave the mulch in place and plow the mulch into the soil during seed bed preparation. The mulch will become beneficial plant food for the newly planted grass.
  - d. Plant temporary grass on area stabilized with mulch (erosion control compost) after 60 calendar days.
  - e. Do not use Erosion Control Compost in areas where the use of fertilizer is restricted.

#### **H. Miscellaneous Erosion Control Items Not Shown on the Plans**

When conditions develop during construction that were unforeseen in the design stage, the Engineer may direct the Contractor to construct temporary devices such as but not limited to:

- Bulkheads
- Sump holes
- Half round pipe for use as ditch liners
- U-V resistant plastic sheets to cover critical cut slopes

The Engineer and the Contractor will determine the placement to ensure erosion control in the affected area.

#### **I. Diversion Channels**

When constructing a culvert or other drainage structure in a live stream that requires diverting a stream, construct a diversion channel.

#### **J. Check Dams**

Check dams are constructed of the following materials;

- Stone plain riprap according to [Section 603](#) (Place woven plastic filter fabric on ditch section before placing riprap.)
- Sand bags as in [Section 603](#) without Portland cement
- Baled wheat straw
- Compost filter socks
- Fabric (Type C silt fence)

Check dams shall be constructed according to plan details and shall remain in place until the permanent ditch protection is in place or being installed and the removal is approved by the Engineer.

#### **K. Construction Exits**

Locate construction exits at any point where vehicles will be leaving the project onto a public roadway. Install construction exits at the locations shown in the plans and in accordance with plan details.

#### **L. Retrofits**

Add the retrofit device to the permanent outlet structure as shown on the Plan details.

When all land disturbing activities that would contribute sediment-laden runoff to the basin are complete, clean the basin of sediment and stabilize the basin area with vegetation.

When the basin is stabilized, remove the retrofit device from the permanent outlet structure of the detention pond.

#### **M. Inlet Sediment Traps**

Inlet sediment traps consist of a temporary device placed around a storm drain inlet to trap sediment. An excavated area adjacent to the sediment trap will provide additional sediment storage.

Inlet sediment traps may be constructed of Type C silt fence, plastic frame and filter, hay bales, baffle box, or other filtering materials approved by the Engineer. Construct inlet sediment traps according to the appropriate specification for the material selected for the trap. Place inlet sediment traps as shown on the Plans or as directed by the Engineer.



**N. Rock Filter Dams**

Construct rock filter dams of the material selected as shown in the approved erosion and sediment control plan. Construct and place this item in accordance with the approved erosion control construction detail(s) and Standard Specification [Section 603](#).

Rock filter dams shall remain in place until the permanent ditch protection is in place or is being installed and their removal is approved by the Engineer.

**O. Stone Filter Berms**

Construct stone filter berms of the material selected as shown in the approved erosion and sediment control plan. Construct and place this item in accordance with the approved erosion control construction detail(s) and Standard Specification [Section 603](#).

Stone filter berms shall remain in place until the permanent slope protection is in place or is being installed and their removal is approved by the Engineer.

**P. Stone Filter Rings**

Construct stone filter rings of the material selected as shown in the approved erosion and sediment control plan. Construct and place this item in accordance with the approved erosion control construction detail(s) and Standard Specification [Section 603](#).

A stone filter ring shall remain in place until final stabilization of the area which drains toward it is achieved and its removal is approved by the Engineer.

**Q. Temporary Sediment Traps**

Construct temporary sediment traps of the material selected as shown in the approved erosion and sediment control plan. Construct and place this item in accordance with the approved erosion control construction detail(s) and Standard Specification [Section 603](#).

A temporary sediment trap shall remain in place until final stabilization of the area which drains toward it is achieved and its removal is approved by the Engineer.

**163.3.06 Quality Acceptance**

General Provisions 101 through 150.

**163.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

**163.4 Measurement**

**A. Silt Control Gates**

Silt control gates are measured for payment by the entire structure constructed at each location complete in place and accepted. Silt control gates constructed at the inlet of multiple lines of drainage structures are measured for payment as a single unit.

**B. Temporary Slope Drains**

Temporary slope drains are measured for payment by the linear foot (meter) of pipe placed. When required, the inlet spillway and outlet apron and/or other dissipation devices are incidental and not measured separately.

**C. Temporary Sediment Basins**

Temporary sediment basins are measured for payment by the entire structure complete, including construction, maintenance, and removal. Temporary grassing for sediment basins is measured separately for payment. Measurement also includes:

- Earthwork
- Drainage
- Spillways
- Baffles
- Riprap
- Final cleaning to remove the basin

**D. Sediment Barriers**

Sediment barriers are measured by the linear foot (meter).

**E. Other Temporary Structures**

Other temporary structures are not measured for payment. Costs for the entire structure complete, including materials, construction (including earthwork), and removal is included in the price bid for the drainage structure or for other Contract items.

**F. Temporary Grass**

Temporary grass is measured for payment by the acre (hectare). Lime, when required, is measured by the ton (megagram). Mulch and fertilizer are measured separately for payment.

**G. Mulch**

Mulch (straw or hay, or erosion control compost) is measured for payment by the ton (megagram).

**H. Miscellaneous Erosion Control Items Not Shown on the Plans**

These items are not measured for payment. The cost for construction, materials, and removal is included in the price bid for other contract items.

**I. Diversion Channels**

Diversion channels are not measured for payment. The cost for the entire structure complete, including materials, construction (including earthwork), and removal is included in the price bid for the drainage structure or for other contract items.

**J. Check Dams**

Stone, sand bags, baled wheat straw, and compost filter sock check dams are measured per each, which includes all work necessary to construct the check dam including woven plastic filter fabric placed beneath stone check dams. Fabric check dams are measured per linear foot.

**K. Construction Exits**

Construction exits are measured per each which will include all work necessary to construct the exit including the required geotextile fabric placed beneath the aggregate.

**L. Retrofits**

Retrofit will be measured for payment per each. The construction of the detention pond and permanent outlet structure will be measured separately under the appropriate items.

**M. Inlet Sediment Traps**

Inlet sediment traps, regardless of the material selected, are measured per each which includes all work necessary to construct the trap including any incidentals and providing the excavated area for sediment storage.

**N. Rock Filter Dams**

Rock filter dams are measured for payment per each required. This includes the entire structure at each location and all the work necessary for construction.

**O. Stone Filter Berms**

Stone filter berms are measured for payment per linear foot (meter) required. This includes the entire structure at each location and all the work necessary for construction.

**P. Stone Filter Rings**

Stone filter rings are measured for payment per each required. This includes the entire structure at each location and all the work necessary for construction.

**Q. Temporary Sediment Traps**

Temporary sediment traps are measured for payment per each required. This includes the entire structure at each location and all the work necessary for construction.

### **163.4.01 Limits**

General Provisions 101 through 150.

## **163.5 Payment**

### **A. Silt Control Gates**

The specified silt control gates are paid for at the Contract Unit Price per each. Payment is full compensation for:

- Furnishing the material and labor
- Constructing the concrete apron as shown on the Plans
- Excavating and backfilling to place the apron
- Removing the gate

### **B. Temporary Slope Drains**

Temporary slope drains are paid for by the linear foot (meter). Payment is full compensation for materials, construction, removal (if required), inlet spillways, velocity dissipaters, and outlet aprons.

When temporary drain inlets and pipe slope drains are removed, they remain the Contractor's property and may be reused or removed from the Project as the Contractor desires. Reused pipe or inlets are paid for the same as new pipe or inlets.

### **C. Temporary Sediment Basins**

Temporary sediment basins, measured according to [Subsection 163.4.C "Measurement,"](#) are paid for by the unit, per each, for the type specified on the Plans. Price and payment are full compensation for work and supervision to construct, and remove the sediment basin, including final clean-up.

### **D. Sediment Barriers**

Sediment barriers are paid by the linear foot (meter). Price and payment are full compensation for work and supervision to construct, and remove the sediment barrier, including final clean-up.

### **E. Other Temporary Structures**

Other temporary structures are not measured for payment. Costs for the entire structure complete, including materials, construction (including earthwork), and removal is included in the price bid for the drainage structure or for other Contract items.

### **F. Temporary Grass**

Temporary grass is paid for by the acre (hectare). Payment is full compensation for all equipment, labor, ground preparation, materials, wood fiber mulch, polyacrylamide, and other incidentals. Lime (when required) is paid for by the ton (megagram). Mulch and fertilizer are paid for separately.

### **G. Mulch**

Mulch is paid for by the ton. Payment is full compensation for all materials, labor, maintenance, equipment and other incidentals.

The weight for payment of straw or hay mulch will be the product of the number of bales used and the average weight per bale as determined on certified scales provided by the contractor or state certified scales. Provide written documentation to the Engineer stating the average weight of the bales.

The weight of erosion control compost mulch will be determined by weighing each loaded vehicle on the required motor truck scale as the material is hauled to the roadway, or by using recorded weights if a digital recording device is used. The contractor may propose other methods of providing the weight of the mulch to Engineer for approval.

### **H. Miscellaneous Erosion Control Items Not Shown on the Plans**

These items are not paid for separately. They are included in the price bid for other contract items.

### **I. Diversion Channel**

Diversion channels are not paid for separately. They are included in the price bid for other contract items.

**J. Check Dams**

Payment is full compensation for all materials, construction, and removal. Stone plain riprap, sand bag, baled wheat straw, or compost filter socks check dams are paid for per each. The required woven filter fabric required under each stone check dams is included in the bid price. Fabric check dams are paid for per linear foot.

**K. Construction Exits**

Construction exits are paid for per each. Payment is full compensation for all materials including the required geotextile, construction, and removal.

**L. Retrofits**

This item is paid for at the Contract Unit Price per each. Payment is full compensation for all work, supervision, materials (including the stone filter), labor and equipment necessary to construct and remove the retrofit device from an existing or proposed detention pond outlet structure.

**M. Inlet Sediment Traps**

Inlet sediment traps are paid for per each. Payment is full compensation for all materials, construction, and removal.

**N. Rock Filter Dams**

Rock filter dams are paid for per each. Payment is full compensation for all materials, construction, and removal for each. Clean reused stone Type 3 riprap and #57 stone are paid for on the same basis as new items. Plastic woven filter fabric is required under rock filter dams and is included in the price bid for each.

**O. Stone Filter Berms**

Stone filter berms are paid for per linear foot (meter). Payment is full compensation for all materials, construction, and removal for each. Clean reused stone Type 3 riprap and #57 stone are paid for on the same basis as new items. Plastic woven filter fabric is required under rock filter berms and is included in the price bid for linear foot (meter).

**P. Stone Filter Rings**

Stone filter rings are paid for per each. Payment is full compensation for all materials, construction, and removal for each. Clean reused stone Type 3 riprap and #57 stone are paid for on the same basis as new items. Plastic woven filter fabric is required under stone filter rings and is included in the price bid for each.

**Q. Temporary Sediment Traps**

Temporary sediment traps are paid for payment per each required. This includes the entire structure at each location and all the work necessary for construction.

The items in this section (except temporary grass and mulch) are made as partial payments as follows:

- When the item is installed and put into operation the Contractor will be paid 75 percent of the Contract price.
- When the Engineer instructs the Contractor that the item is no longer required and is to remain in place or is removed, whichever applies, the remaining 25 percent will be paid.

Temporary devices may be left in place at the Engineer's discretion at no change in cost. Payment for temporary grass will be made based on the number of acres (hectares) grassed. Mulch will be based on the number of tons (megagrams) used.

Payment is made under:

Item No. 163	Construct and remove silt control gates	Per each
Item No. 163	Construct and remove temporary pipe slope drains	Per linear foot (meter)
Item No. 163	Construct and remove temporary sediment barriers	Per linear foot (meter)
Item No. 163	Construct and remove sediment basins	Per each
Item No. 163	Construct and remove check dams except fabric dams	Per each
Item No. 163	Construct and remove fabric check dams	Per linear foot (meter)
Item No. 163	Construct and remove construction exits	Per each
Item No. 163	Construct and remove retrofits	Per each
Item No. 163	Construct and remove rock filter dams	Per each
Item No. 163	Construct and remove stone filter berms	Per linear foot (meter)
Item No. 163	Construct and remove stone filter rings	Per each
Item No. 163	Construct and remove inlet sediment traps	Per each
Item No. 163	Construct and remove temporary sediment traps	Per each
Item No. 163	Temporary grass	Per acre (hectare)
Item No. 163	Mulch	Per ton (megagram)

#### **163.5.01 Adjustments**

General Provisions 101 through 150.

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
SUPPLEMENTAL SPECIFICATION  
Section 167—Water Quality Monitoring**

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*Delete 167 and substitute the following:*

**167.1 General Description**

This Specification establishes the Contractor’s responsibility to meet the requirements of Part IV of the National Pollutant Discharge Elimination System (NPDES) Infrastructure Permit No. GAR100002. In the case of differing requirements between this specification and the Permit, whichever is the more stringent requirement shall be adhered to.

**167.1.01 Definitions**

Certified Personnel are defined as persons who have successfully completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission. For Department projects the certified person must also have successfully completed the Department’s WECS certification course.

Water Quality Monitoring as used within this specification, the term “monitoring” shall be inclusive of the acts of detecting, noting, discerning, observing, etc. for the purpose of gauging compliance with the GAR100002.

Qualifying Rainfall Sampling Event means that which is defined in the current GAR1000002, Part IV.D.6.d(3).

**167.1.02 Related References**

**A. Standard Specifications**

Section 161—Control of Soil Erosion and Sedimentation

**B. Referenced Documents**

NPDES Infrastructure Permit No. GAR100002

GDOT WECS Seminar

EPD Rule Chapter 391-3-7

GSWCC Certification Level IA Course

OCGA 12-7-1

**167.1.03 Submittals**

General Provisions 101 through 150

**167.2 Materials**

General Provisions 101 through 150.

**167.2.01 Delivery, Storage, and Handling**

General Provisions 101 through 150.

## **167.3 Construction Requirements**

### **167.3.01 Personnel**

Use GSWCC level IA certified and WECS certified personnel to perform all sampling, inspections, and rainfall data collection. Use the Contractor-designated WECS or select a prequalified consultant from the Qualified Consultant List (QCL) to perform water quality sampling, inspections, and rainfall data collection.

The Contractor is responsible for having a copy of the GAR100002 Permit onsite at all times.

### **167.3.02 Equipment**

Provide equipment necessary to complete the Work or as directed by the Engineer.

### **167.3.03 Preparation**

General Provisions 101 through 150.

### **167.3.04 Fabrication**

General Provisions 101 through 150.

### **167.3.05 Construction**

#### **A. General**

Perform inspections, rainfall data collection, testing of samples, and reporting the test results on the project according to the requirements in Part IV of the GAR100002 and this Specification.

Take samples manually or use automatic samplers, according to the GAR100002. Note that GAR100002 requires the use of manual sampling or rising stage sampling for qualifying events that occur after the first instance of the automatic sampler not being activated during a qualifying event. Analyze all samples according to the Permit, regardless of the method used to collect the samples.

If samples are analyzed in the field using portable turbidimeters, the sampling results shall state they are being used and a digital readout of NTUs is what is provided.

Submit bench sheets, work sheets, etc., when using portable turbidimeters. There are no exceptions to this requirement.

Perform required inspections and submit all reports required by this Specification within the time frames specified. Failure to perform the inspections within the time specified will result in the cessation of all construction activities with the exception of traffic control and erosion control. Failure to submit the required reports within the times specified will result in non-refundable deductions as specified in Subsection 161.5.01.B.

#### **B. Water Quality Inspections**

The Department will provide one copy of the required inspection forms for use and duplication. Inspection forms may change during the contract to reflect regulatory agency needs or the need of the Department. Any costs associated with the change of inspection forms shall be considered incidental and shall be borne by the Contractor. Alternate formats of the provided forms may be created, used and submitted by the Contractor

provided the required content and/or data fields and verbatim certification statements from the Department's current forms are included.

The Engineer shall inspect the installation and condition of each erosion control device required by the erosion control plan within seven days after initial installation. This inspection is performed for each stage of construction when new devices are installed. The WECS shall ensure all installation deficiencies reported by the Engineer are corrected within two business days.

Ensure the inspections of the areas listed below are conducted by certified personnel and at the frequencies listed. Document all inspections on the appropriate form provided by the Department.

1. Daily (when any work is occurring):

Conduct inspections on the following areas:

- a. Petroleum product storage, usage, and handling areas for spills or leaks from vehicles or equipment
- b. All locations where vehicles enter/exit the site for evidence of off-site sediment tracking

Continue these inspections until a Notice of Termination (NOT) is submitted, and use the daily inspection forms.

2. Weekly and after Rainfall Events:

Conduct inspections on these areas every seven calendar days and within twenty-four hours after the end of a rainfall event that is 0.5 in (13 mm) or greater (unless such storm ends after 5:00 PM on any Friday or any non-working Saturday, non-working Sunday or any non-working Federal holiday in which case the inspection shall be completed by the end of the next business day and/or working day, whichever occurs first):

- a. Disturbed areas not permanently stabilized
- b. Material storage areas that are exposed to precipitation
- c. Structural control measures, Best Management Practices (BMPs) to ensure they are operating correctly
- d. Water quality sampling locations and equipment
- e. Discharge locations or points, e.g., outfalls and drainage structures that are accessible to determine if erosion control measures are effective in preventing significant impacts to receiving waters

Continue these inspections until all temporary BMPs are removed and a NOT is submitted. Use the EC-1 Form.

3. Monthly:

Once per month, inspect all areas of the site that have undergone final stabilization or have established a crop of annual vegetation and a seeding of target perennials appropriate for the region. Look for evidence of sediments or pollutants entering the drainage system and or receiving waters. Inspect all permanent erosion control devices remaining in place to verify the maintenance status and that the devices are functioning properly. Inspect discharge locations or points, e.g. outfalls, drainage structures, that are accessible to determine if erosion control measures are effective in preventing significant impacts to receiving waters.

Continue these inspections until the Notice of Termination is submitted and use the monthly inspection form.

### **C. Water Quality Sampling**



When the sampling location is a receiving water, the upstream and downstream samples are taken for comparison of NTU values. When the sampling location is an outfall, a single sample is taken to be analyzed for its absolute NTU value.

#### **D. Reports**

##### **1. Inspection Reports:**

Summarize the results of inspections noted above in writing on the appropriate Daily, Weekly, Monthly, or EC-1 form provided by the Department and includes the following information:

- Date(s) of inspection
- Name of certified personnel performing inspection
- Construction phase
- Status of devices
- Observations
- Action taken in accordance with Part IV.D.4.a.(5) of the GAR100002 Permit
- Signature of personnel performing the inspection
- Any instance of non-compliance

When the report does not identify any non-compliance instances, the inspection report shall contain a statement that the best management practices are in compliance with the Erosion, Sedimentation, and Pollution Control Plan. (See the EC-1 form.)

The reports shall be made and retained at the site or be readily available at a designated alternate location until the entire site or that portion of a construction project that has been phased has undergone final stabilization and a Notice of Termination is submitted to the Georgia Department of Natural Resources Environmental Protection Division (GAEPD). Such reports shall be readily available by the end of the second business day and/or working day and shall identify all incidents of best management practices that have not been properly installed and/or maintained as described in the Plan. The inspection form certification sheet shall be signed by the project WECS and the inspector performing inspections on behalf of the WECS (if not the same person). Submit all inspection reports to the Engineer within twenty-four hours of the inspection. The Engineer will review the submitted reports to determine their accuracy. The Engineer will notify the certified personnel of any additional items that should be added to the inspection report.

Correct any items listed in the inspection report requiring routine maintenance within seventy-two (72) hours of notification or immediately during perimeter BMP failure emergencies. Deficiencies that interfere with traffic flow, safety, or downstream turbidity are to be corrected as soon as practical but in no case later than seven (7) calendar days following the inspection.

Assume responsibility for all costs associated with additional sampling as specified in Part IV.D.6.d.3.(c) of the GAR100002 if either of these conditions arises:

- BMPs shown in the Plans are not properly installed and maintained, or
- BMPs designed by the Contractor are not properly designed, installed and maintained.

##### **2. Sampling Reports**

- a. All sampling shall be performed in accordance with the requirements of the GAR100002 Permit for the locations identified in the ESPCP approved by the Department.
- b. Report Requirements  
Include in all reports, the following certification statement, signed by the WECS or consultant providing sampling on the project:

“I certify under penalty of law that this report and all attachments were prepared under my direct supervision in accordance with a system designed to assure that certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

When a rainfall event requires a sample to be taken, submit a report of the sampling results to the Engineer within seven working days of the date the sample was obtained. Include the following information in each report:

- 1) Date and time of sampling
- 2) Name of certified person(s) who performed the sampling and analyses.
- 3) Date the analyses were performed
- 4) Time the analyses were initiated
- 5) Rainfall amount on the sampling date (sampling date only)
- 6) NTU of each sample & analytical method
- 7) Location where each sample was taken (station number and left or right offset)
- 8) Identification of whether a sample is a receiving-water sample or an outfall sample
- 9) Project number and county
- 10) References and written procedures, whenever available, for the analytical techniques or methods used: whether the samples were taken by automatic sampler, rising-stage sampler, or manually (grab sample)
- 11) The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results
- 12) A clear note if a sample exceeds 1000 NTUs by writing “exceeds 1000 NTUs” prominently upon the report.

c. Report Requirements with No Qualifying Rainfall Events

In the event a qualifying rainfall event does not produce a discharge to sample, or sampling is “impossible”, as defined in the GAR1000002 Permit, a written justification must be included in the report as required at Part IV.D.4.a.(6) of the GAR100002 Permit.

d. Sampling Results

Provide sampling results to the Project Engineer within 48 hours of the samples being analyzed. This notification may be verbal or written. This notification does not replace the requirement to submit the formal summary to the Engineer within 7 working days of the samples being collected. The Engineer will ensure submission of the sampling report to GAEPD by the 15<sup>th</sup> of the month following the sampling results as per the GAR100002 Permit. The WECS will be held accountable for delayed delivery to the Department which results in late submissions to EPD resulting in enforcement actions.

3. Rainfall Data Reports:

Record the measurement of rainfall once each twenty-four hour period, except for non-working Saturdays, non-working Sundays and non-working Federal Holidays until a Notice of Termination is submitted. Project rain gauges and those used to trigger the automatic samplers are to be emptied after every rainfall event. This will prevent a cumulative effect and prevent automatic samplers from taking samples even though the rainfall event is not a qualifying event. The daily rainfall data supplied by the WECS to the Engineer will be the official rainfall data for the project.

**167.3.06 Quality Acceptance**

General Provisions 101 through 150.

### 167.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

## 167.4 Measurement

Water Quality Inspections in accordance with the inspection and reports sub-sections will be measured for payment by the month up to the time the Contract Time expires. Required inspections and reports after Contract Time has expired will not be measured for payment unless a time extension is granted by the Department.

Water Quality Sampling is measured per each. "Each" means each qualifying rainfall sampling event, not each sampled site.

When the sampling location is a receiving water, the upstream and downstream samples constitute one sample for comparison. When the sampling location is an outfall, a single outfall sample constitutes the entire sample.

### 167.4.01 Limits

General Provisions 101 through 150. Submit the monitoring summary report to the Engineer within 7 working days

## 167.5 Payment

Payment for Water Quality Inspections and Water Quality Sampling will be made as follows:

Water Quality Inspections will be paid at the Contract Price per month. This is full compensation for performing the requirements of the inspection section of the GAR100002 and this Specification, any and all necessary incidentals, and providing results of inspections to the Engineer, within the time frame required by the GAR100002 and this Specification.

Water Quality Sampling per each qualifying rainfall sampling event is full compensation for meeting the requirements of the sampling sections of the GAR100002 and this Specification, obtaining samples, analyzing samples, any and all necessary incidentals, and providing results of turbidity tests to the Engineer, within the time frame required by the GAR100002 and this Specification. This item is based on the rainfall events requiring sampling as described in Part IV.D. 6 of the GAR100002. The Department will not pay for samples taken and analyzed for rainfall events that are not qualifying events as compared to the daily rainfall data supplied by the WECS.

Payment will be made under:

Item No. 167	Water quality inspections	Per month
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Water Quality Sampling will be paid per each qualifying rainfall sampling event.

Payment will be made under:

Item No. 167	Water quality sampling	Per each
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### 167.5.01 Adjustments

General Provisions 101 through 150.

Office of Design Policy and Support

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION**

**Section 171—Silt Fence**

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*Delete Section 171 and substitute the following:*

**171.1 General Description**

This work includes furnishing, installing, and removing a water permeable filter fabric fence to remove suspended particles from drainage water.

**171.1.01 Definitions**

General Provisions 101 through 150.

**171.1.02 Related References**

**A. Standard Specifications**

[Section 163—Miscellaneous Erosion Control Items](#)

[Section 700—Grassing](#)

[Section 862—Wood Posts and Bracing](#)

[Section 881—Fabrics](#)

[Section 894—Fencing](#)

**B. Referenced Documents**

ASTM D 3786

ASTM D 4355

ASTM D 4632

ASTM D 4751

[GDT 87](#)

[QPL 36](#)

**171.1.03 Submittals**

General Provisions 101 through 150.

**171.2 Materials**

Materials shall meet the requirements of the following Specifications:

<b>Material</b>	<b>Section</b>
Filter Fabrics	<a href="#">881</a>
Fencing	<a href="#">894</a>
Wood Posts and Bracing	<a href="#">862</a>

Conditions during Project construction will affect the quantity of the silt fence to be installed.

The Engineer may increase, decrease, or eliminate the quantity at his or her direction. Variations in quantity are not changes in details of construction or in the character of the work.

For Type A, B, and C fences, use fabric as specified in [Subsection 881.2.07, "Silt Fence Filter Fabric."](#)

### **171.2.01 Delivery, Storage, and Handling**

During shipment and storage, wrap the fabric in a heavy-duty covering protecting the cloth from sunlight, mud, dust, dirt, and debris. Do not expose the fabric to temperatures greater than 140 °F (60 °C).

When installed, the Engineer will reject the fabric if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.

## **171.3 Construction Requirements**

### **171.3.01 Personnel**

General Provisions 101 through 150.

### **171.3.02 Equipment**

General Provisions 101 through 150.

### **171.3.03 Preparation**

General Provisions 101 through 150.

### **171.3.04 Fabrication**

General Provisions 101 through 150.

### **171.3.05 Construction**

Install the silt fence according to this Specification, as shown on the Plans, or as directed by the Engineer

#### **A. Install Silt Fence**

1. Install silt fence by either of the following methods:
  - a. Excavated Trench Method  
Excavate a trench 4 to 6 in (100 to 150 mm) deep using equipment such as a trenching machine or motor grader. If equipment cannot be operated on the site, excavate the trench by hand.
  - b. Soil Slicing Method  
Create a mechanical slice in the soil 8 to 12 in (200 to 300 mm) deep to receive the silt fence. Ensure the width of the slice is not more than 3 in (75 mm). Mechanically insert the silt fence fabric into the slice in a simultaneous operation with the slicing ensuring consistent depth and placement.
2. Install the first post at the center of the low point (if applicable). Space the remaining posts a maximum of 6 ft (1.8 m) apart for Types A and B fence and 4 ft (1.2 m) apart for Type C fence.
3. Bury the posts at least 18 in (450 mm) into the ground. If this depth cannot be attained, secure the posts enough to prevent the fence from overturning from sediment loading.
4. Attach the filter fabric to the post using wire, cord, staples, nails, pockets, or other acceptable means.
  - a. Staples and Nails (Wood Posts): Evenly space staples or nails with at least five per post for Type A fence and four per post for Type B fence.
  - b. Pockets: If using pockets and they are not closed at the top, attach the fabric to a wood post using at least one additional staple or nail, or to a steel post using wire. Ensure the additional attachment is within the top 6 in (150 mm) of the fabric.
  - c. Install the filter fabric so 6 to 8 in (150 to 200 mm) of fabric is left at the bottom to be buried. Provide a minimum overlap of 18 in (450 mm) at all splice joints.
  - d. For Type C fence:
    - 1) Woven Wire Supported
      - Steel Post: Use wire to attach the fabric to the top of the woven wire support fence at the midpoint between posts. Also, use wire to attach the fabric to the post.
    - 2) Polypropylene Mesh Supported
      - Wood Post: Use at least six staples per post. Use two staples in a crisscross or parallel pattern to secure the top portion of the fence. Evenly space the remaining staples down the post.
      - Steel Post: Use wire to attach the fabric and polypropylene mesh to the post.

5. Install the fabric in the trench so 4 to 6 in (100 to 150 mm) of fabric is against the side of the trench with 2 to 4 in (50 to 100 mm) of fabric across the bottom in the upstream direction.
6. Backfill and compact the trench to ensure flow cannot pass under the barrier. When the slice method is used, compact the soil disturbed by the slice on the upstream side of the silt fence first, and then compact the downstream side.
7. When installing a silt fence across a waterway producing significant runoff, place a settling basin in front of the fence to handle the sediment load, if required. Construct a suitable sump hole or storage area according to [Section 163](#).

#### **B. Remove the Silt Fence**

1. Keep all silt fence in place unless or until the Engineer directs it to be removed. A removed silt fence may be used at other locations if the Engineer approves of its condition.
2. After removing the silt fence, dress the area to natural ground, grass and mulch the area according to [Section 700](#).
3. The silt fence shall remain until the Project is accepted or until the fence is removed. Also, remove and dispose of the silt accumulations at the silt fence.
4. Remove and replace any deteriorated filter fabric reducing the effectiveness of the silt fence.
5. Repair or replace any undermined silt fence at no additional cost to the Department.

#### **171.3.06 Quality Acceptance**

Approved silt fence is listed in [QPL 36](#). Approved fabrics must consistently exceed the minimum requirements of this Specification as verified by the Office of Materials and Research. The Office of Materials and Research will remove fabric failing to meet the minimum requirements of this specification from the QPL until the products' acceptability has been reestablished to the Department's satisfaction.

At the time of installation, the Engineer will reject the fabric if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.

#### **171.3.07 Contractor Warranty**

The silt fence shall remain until the Project is accepted or until the fence is removed. Also, remove and dispose of the silt accumulations at the silt fence.

Remove and replace any deteriorated filter fabric that reduces the effectiveness of the silt fence.

Repair or replace any undermined silt fence at no additional cost to the Department.

### **171.4 Measurement**

The quantity of silt fence to be paid for is the actual number of linear feet (meters) of silt fence, measured in place from end post to end post of each separate installation. The silt fence must be complete and accepted.

#### **171.4.01 Limits**

General Provisions 101 through 150.

### **171.5 Payment**

Silt fence Type A, B, or C measured as defined in [Subsection 171.4, "Measurement,"](#) is paid for at the Contract Unit Price bid per linear foot (meter).

Payment is full compensation for the following:

- Furnishing materials
- Erecting the fence
- Dressing and grassing, when required
- Removing the fence, when required

Payment for this Item is made as follows:

- Seventy-five percent of the Contract Price bid per linear foot (meter) is paid when each fence is complete in place.
- Twenty-five percent is paid at removal or acceptance.

If the silt fence must be repaired or removed, as the result of neglect or damage, perform the work at no additional cost to the Department.

Payment will be made under:

Item No. 171	Silt fence, type__	Per linear foot (meter)
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**171.5.01 Adjustments**

General Provisions 101 through 150.

Office of Design Policy and Support

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SUPPLEMENTAL SPECIFICATION**

**Section 201 – Clearing and Grubbing Right of Way**

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*Delete Subsection 201.3.05.E.3 and substitute the following:*

3. Solid Waste Material

a. Nonregulated Material

1) Common fill is defined as soil, rock, brick, concrete without reinforcement, concrete with reinforcement where the reinforcement has been removed flush with the surface of the concrete and cured asphalt, provided that such material does not contain hazardous waste constituents above background levels and the material results from Department funded construction contracts. Such fill is not subject to the Georgia Comprehensive Solid Waste Management Act of 1990 and the Solid Waste Management Rules when used as fill material on Department funded construction contracts or Department property or when used as fill material on property not owned by the Department when all requirements of this specification are fully met. Common fill meeting this definition may be placed as follows:

a. At a permitted municipal, construction and demolition materials or inert landfill fully meeting all requirements of the Solid Waste Rules and Act and any other applicable laws or ordinances.

b. At an off-site engineered fill location in accordance with the following requirements;

- Place the material in uniform layers 3 ft thick or less and distributed to avoid the formation of large voids or pockets.
- Fill voids with finer material.
- Cover the last layer of fill with at least 2 ft of soil.
- Construct the fill according to Section 208, except compact it to at least 90 percent of the maximum laboratory dry density.
- A Georgia registered professional engineer shall document, certify and submit the following information on behalf of the Contractor to the Department; compaction rates, waste description including average particle size, and the depth of clean earthen fill lying above the engineered fill.



c. On site as compacted fill if prior written approval has been granted by the Engineer and in accordance with the following requirements:

- As compacted fill incorporated into embankment only. No area shall be excavated for the sole purpose of disposing of common fill.
- Place the material in uniform layers 3 ft thick or less and distributed to avoid the formation of large voids or pockets.
- Fill voids with finer material.
- Cover the last layer of fill with at least 2 ft of soil.
- Construct the fill according to Section 208, except compact it to at least 90 percent of the maximum laboratory dry density.
- Records of the exact location by station and offsets, amount disposed per location in cubic yards, waste description including average particle size, compaction rates and depth of clean earthen fill lying above the composite materials shall be kept by the Engineer.

d. Materials that may be recycled or reused such as asphaltic concrete, Portland cement concrete, plastic, metal and materials that qualify under EPD regulations for sale or use may be reclaimed by the Contractor.

b. Regulated Material

- 1) Inert waste is defined as organic debris such as stumps, limbs and leaves, cured asphalt and any of the aforementioned common fill items that do not meet the compaction requirements when placed in an excess materials pit. An inert waste landfill permit shall be obtained in accordance with GDNR/EPD Rules to properly record the disposal of inert waste when compaction requirements are not met at an excess materials pit. If disposed of at a landfill, inert waste may only be disposed at a permitted municipal, construction and demolition materials or inert landfill fully meeting all requirements of the Solid Waste Rules and Act and any other applicable laws or ordinances.
- 2) Construction and demolition waste is defined as construction forms, barrels, scrap metal, and other such by-products of construction not specifically listed above as either common fill or inert waste. Construction and or demolition waste must be disposed of at a permitted municipal, construction and demolition materials, or inert landfill fully meeting all requirements of the Solid Waste Rules and Act and any other applicable laws or ordinances.
- 3) Dispose of oils, solvents, fuels, untreated lead paint residue, and other solid hazardous waste through a properly licensed hazardous waste disposal facility.

- 4) Remove municipal solid waste discovered during construction or shown on the Plans according to Section 215.

c. Solid Waste Handling and Disposal Documentation Requirements:

- 1) Waste disposed at a permitted municipal or construction and demolition landfill – all tipping receipts generated by the receiving landfill shall be provided to the Engineer.
- 2) Waste disposed at inert landfill – a copy of the landfill's Permit By Rule notification, and for landfills exceeding one acre, a copy of the landfill's NPDES General Storm water Permit Notice of Intent (NOI) and any local jurisdiction Land Disturbing Activity Permit, if applicable, shall be provided to the Engineer.
- 3) Any necessary documentation regarding a disposal site's permit status must be obtained by the Contractor and verified by the Department before any common fill, inert waste, or other solid waste is allowed to leave the site.
- 4) The documentation listed herein shall be maintained on-site in the project files and at any other location the Department deems necessary until a valid NPDES Notice of Termination is filed.

Recyclable materials must be separated from all waste materials and shall be properly stored in containers when practicable.

Excluding the above allowances, all types of waste shall be handled in full compliance with the following:

- The Georgia Solid Waste Management Rules, as amended (391-3-4)
- Georgia Comprehensive Solid Waste Management Act of 1990, as amended (O.C.G.A. 12-8-20)
- The Georgia Erosion & Sedimentation Act as amended (O.C.G.A. 12-7-1) and any applicable Local and State requirements as well as the General Permits of the Georgia Water Quality Control Act
- Any other applicable Federal, State, or Local rules or laws

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION  
COUNTY: COUNTY: FULTON**

**15TH STREET ROADWAY EXTENSION WATERLINE RELOCATION PROJECT**

**Section 670—Water Distribution System**

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*Delete Section 670 and substitute the following:*

**670.1 General Description**

This work consists of furnishing materials, labor, tools, equipment, and other items necessary for installing, removing, abandoning, relocating, and adjusting water distribution systems according to the Plans and Specifications.

**670.1.01 Definitions**

- A. General Provisions 101 through 150
- B. Whenever the terms “City” or “DWM” are used in this Special Provision and its related documents, it shall be understood to mean City of Atlanta, Department of Watershed Management, its subsidiaries, successors and/or assigns, hereafter referred to as Utility Owner.
- C. The term “Project Manager” shall mean the authorized individual having the authority to give instructions pertaining to the work and to approve or reject the work. The “Project Manager” shall not however be authorized to revoke, alter, enlarge, relax, or release any requirements of the Contract, Plans, and Specifications, nor shall they act as an agent for the Contractor. All Contract items pertaining to the Utility Owner shall be coordinated with the Project Manager and the Utility Owner.
- D. Whenever the term “Georgia Department of Transportation” or “Department” or “GDOT” is used in this Special Provision, it shall be understood to mean Fulton County.

**670.1.02 Related References**

**A. Standard Specifications**

[Section 104—Scope of Work](#)

[Section 107—Legal Regulations and Responsibility to the Public](#)

[Section 108—Prosecution and Progress](#)

[Section 205—Roadway Excavation](#)

[Section 207—Excavation and Backfill for Minor Structures](#)

[Section 210—Grading Complete](#)

[Section 400—Hot Mix Asphaltic Concrete Construction](#)

[Section 444—Sawed Joints in Existing Pavements](#)

[Section 500—Concrete Structures](#)

[Section 600—Controlled Low Strength Flowable Fill](#)

[Section 610—Removal of Miscellaneous Roadway Items](#)

[Section 611—Relaying, Reconstructing or Adjusting to Grade of Miscellaneous Roadway Structures](#)

## Section 670 – Water Distribution System

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[Section 615—Jacking or Boring Pipe](#)

[Section 810—Roadway Materials](#)

### B. Related Documents

1. General Provisions 101 through 150.
2. All products supplied, and all work performed shall be in accordance with [DWM's standard specifications, included as an appendix to this section](#), applicable standards from American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), GDOT Utility Accommodation Policy and Standards, and the Georgia Environmental Protection Division (EPD) Minimum Standards for Public Water Systems. Latest revisions of all standards shall apply.

### 670.1.03 Submittals

A. General Provisions 101 through 150.

B. Refer to the [DWM's standard specifications](#), current published edition, for water utility submittal requirements. Copies of all submittals and documentation shall be submitted to GDOT, who shall distribute to the Utility Owner.

### C. Shop Drawings / Product Data

1. Submit **four (4)** copies of the following submittals to the GDOT Project Manager:
  - a. Product data, including size, dimension, capacity, pressure rating, accessories, and special features, installation instructions, and operating characteristics for all proposed materials to show compliance with the requirements of this Special Provision.
  - b. Test reports specified in the Quality Acceptance section of this Special Provision.
  - c. Pipe manufacturer certification of compliance with specifications.
  - d. Operation and maintenance literature, warranties, and other specified information.

### D. Construction Record Documentation

1. The Contractor shall record on one set of utility drawings changes and deviations from the Contract Drawings in sizes, lines or grade. Record also the exact final horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Drawings shall utilize State Plane Coordinates and shall be legibly marked to record actual construction and submitted to GDOT no later than 30 days after installation and prior to Final Acceptance of the Project. The Utility Owner shall determine if the utility record drawings are complete prior to Final Acceptance of the project.
2. Record Drawings shall also be submitted as [specified in DWM's Specification Section 01055](#).

### 670.1.04 Quality Assurance

- A. The Contractor shall comply with applicable codes, ordinances, rules, regulations and laws of local, municipal, state or federal authorities having jurisdiction over the Project.
- B. Furnish manufactured items, pipe, fittings, valves, service components, and appurtenances from manufacturers having regularly produced such items as specified herein which have proven satisfactory in actual service, over at least a 2-year period, or as approved by the Utility Owner and GDOT.
- C. Regardless of tolerances permitted by industry standards specified herein, the Utility Owner or the GDOT Project Manager may reject pipe or appurtenances at the manufacturing plant or project site which have cracks, chips, blisters, rough interior or exterior surface, evidence of structural weakness, joint defects, or other imperfections that might in the opinion of the Project Manager contribute to reduced functional capability, accelerated deterioration or reduced structural strength.
- D. The Utility Owner and the Utility Owner's consultant shall have the right to visit and inspect the work at any time. The Utility Owner may also have an Inspector assigned to the project authorized to inspect portions or all of the utility work done and the preparation, fabrication, or manufacture of the materials to be used. The Utility Owner shall be able to advise GDOT Project Manager of any observed discrepancies or potential problems. The cost of these inspections shall be the responsibility of the Utility Owner.

## Section 670 – Water Distribution System

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- E. GDOT shall notify the Utility Owner before authorizing any changes or deviations which might affect the Utility Owner's facilities. Contractor shall notify GDOT and Utility Owner a minimum of 24 hours prior to beginning work on utilities.
- F. The Utility Owner shall be notified by GDOT Project Manager when all utility work is complete and ready for final inspection. The Utility Owner shall be invited to attend the final inspection and may provide a corrections list to GDOT Project Manager prior to the final inspection.
- G. The Contractor shall verify the actual location and depth of all utilities prior to construction. All utilities and structures shall be protected during construction. Any damaged facilities shall be repaired or replaced at the Contractor's expense.

### 670.2 Materials

- A. All materials provided shall be in conformance with the requirements and standards set forth in the DWM's standard specifications, current published edition. All pipeline and appurtenance materials in contact with potable water shall be National Sanitation Foundation (NSF) 61 Certified and part of GDOT QPL list.
- B. Pipes and appurtenances shall comply with Section 1417(a)(1) of the Safe Water Drinking Act as amended in 2011 which prohibits the use of any pipe, any pipe or plumbing fitting or fixture, and solder, or any flux, after June 1986, in the installation or repair of (i) any public water system; or (ii) any plumbing in a residential or non-residential facility providing water for human consumption, that is not lead free as defined in Section 1417(d).
- C. In accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products furnished for permanent incorporation into the work on this project shall occur in the United States. The only current exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these current exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.
  - 1. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, guardrail, steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.
  - 2. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled "**Buy America Certificate of Compliance**" is attached to this agreement and shall be provided to the GDOT upon completion of 80% of the agreement amount. Records to be maintained by the Utility Owner and the GDOT for this certification shall include a signed mill test report and/or documentation by a supplier, distributor, fabricator, or manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.
  - 3. The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or \$2,500.00, whichever is greater.

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### 670.2.01 Water Piping systems and Appurtenances

#### A. Ductile Iron Pipe and Fittings

1. Ductile iron pipe shall meet the latest edition of ANSI/AWWA C150/A21.50 and C151/A21.51 for the class and joint specified with a nominal laying length of 18 (5.5 m) to 20 feet (6 m). Joints for buried ductile iron pipe shall be mechanical or push-on joints. Unless specified otherwise in [DWM's Specification Section 02665](#), ductile iron pipe diameters 12 inch (300 mm) or less shall be minimum Pressure Class 350, while pipe diameters greater than 12 inches (300 mm) shall be minimum Pressure Class 250.
2. Ductile iron pipe for the interior of structures and above ground installations shall be flanged. Flanges shall be ductile iron and shall be threaded-on flanges conforming to ANSI/AWWA C115/A21.15 or cast-on flanges conforming to ANSI/AWWA C110/A21.10. The minimum class thickness for ductile iron flanged pipe to be threaded is Class 53.
3. Interior surfaces of ductile iron pipe and fittings shall be cement mortar lined in accordance with AWWA C104.
4. Ductile iron shall have an exterior coating as specified in AWWA C151 for ductile iron pipe and AWWA C153/C110 for ductile iron fittings.
5. Buried ductile iron pipe and fittings shall be polyethylene encased at locations indicated on the Plans or as conditions warrant. Polyethylene encasement tubing shall be in accordance with ANSI/AWWA C105/A21.5 and ASTM A674 and shall have a minimum thickness of 8 mils. Polyethylene encasement tubing shall be blue in color to designate potable water.
6. Fittings: Ductile iron fittings shall be epoxy coated and meet the requirements of ANSI/AWWA C153/A21.53 or ANSI/AWWA C110 A21.10 with a minimum pressure rating of 250 psi. Ends shall be restrained mechanical joint. All ductile iron fittings shall bear the NSF approval seal for potable water pipe.
7. Mechanical Joint Fittings: Mechanical joints consisting of bell, socket, gland, gasket, bolts, and nuts shall conform to ANSI/AWWA C111/A21.11.
8. Push-On Joints: Push-on joints shall be designed in accordance with ANSI/AWWA C111/A21.11. Joint lubrication shall be as furnished by the manufacturer.
9. Rubber gasket joints for push-on or mechanical joints shall conform to the requirements of ANSI/AWWA C111/A21.11.
10. Restrained Joints: Restrained joints shall be provided as shown on the Plans and where required for thrust restraint. Restrained joints shall not require field welding or grooves cut into the pipe barrel for restraint. The restraining joints for mechanical joint fittings shall conform to the requirements of ANSI/AWWA C111/A21.11 with assembly in conformance with AWWA C600 and manufacturer's recommendations. Restrained joints for pipe shall be mechanical joints with ductile iron retainer or push-on type joints and shall have a minimum rated working pressure of 250 psi.
11. Mechanical joint retainer glands may be used to restrain mechanical joint pipe and fittings to the plain end of ductile iron pipe and fittings. Restraint glands shall be manufactured of ductile iron per ASTM A536.
12. Corrosion-resistant bolts used with ductile iron joints shall be high-strength, low-alloy steel as specified in ANSI/AWWA C111/A21.11.
13. Welded Outlets: Welded outlets in ductile iron pipe shall be provided where specified and indicated on the Plans. Outlets shall be fabricated by welding sections of ductile iron pipe manufactured in accordance with ANSI/AWWA C151/A21.51. Welded outlet pipe shall be fabricated only by the pipe manufacturer. The minimum ductile iron pipe thickness for fabrication of welded outlet pipe shall be Thickness Class 53 for 4-inch to 54-inch (100 to 1350 mm) diameter pipe. All joints on welded-on branch outlets shall be provided in accordance with the latest revision of ANSI/AWWA C111/A21.11 and/or ANSI/AWWA C115/A21.15, as applicable. After the outlets are welded together and prior to finishing, the assembly shall be subjected to a 15-psi air test for leakage. The maximum size and laying length of the welded-on

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branch outlet shall be recommended by the pipe manufacturer and acceptable to the Utility Owner for the field conditions and connecting pipe or valve.

### B. Polyvinyl Chloride (PVC) Pipe

1. PVC pipe diameters 4-inch through 12-inch (100 mm to 300 mm) shall meet ANSI/AWWA C900 requirements and shall be a minimum pipe dimension ratio (DR) 18, Pressure Class 235 psi. PVC pipe diameters 14-inch (350 mm) and greater shall meet ANSI/AWWA C905 requirements, shall be DR 18 minimum, Pressure Class 235 psi. Pipe shall have a bell with an integral wall section with a factory installed, solid cross section elastomeric ring in accordance with ASTM F477.
2. All PVC pipe shall be formulated for sunlight exposure, be blue in color to designate potable water, and bear the NSF approval seal.
3. Joints for 4-inch (100 mm) and larger PVC pipe shall meet the requirements of AWWA C900/C905, latest edition. The rubber gaskets used for the joints shall consist of flexible elastomeric material conforming to ASTM F477.
4. PVC pipe shall have the same outside diameter (OD) as ductile iron pipe and be compatible for use with ductile iron fittings.
5. Fittings for PVC pipe 4 inches (100 mm) and larger shall be ductile iron mechanical joint and comply with the requirements set forth in the specifications for Ductile Iron Pipe and Fittings.
6. Restrained Joints: Restrained joints shall be provided as shown on the Plans and where required for thrust restraint. Restrained joints shall comply with the requirements set forth in the specifications for Ductile Iron Pipe and Fittings.
7. Unless specified otherwise in the Plans, 2-inch (50 mm) and 3-inch (75 mm) diameter PVC pipe shall conform to the requirements of ASTM D2241 Class 1120 or 1220 (SDR 21) with a working pressure rating of 200 psi with integral bell gasketed joints. Pipe is to be manufactured to IPS standard pipe equivalent outside diameters.
8. Schedule 80 PVC pipes smaller than 4-inch (100 mm) nominal diameter shall be in accordance with ASTM D1785. Schedule 80 pipe shall have threaded joints. Solvent cemented joints are not allowed for buried pipes. Threaded type fittings for Schedule 80 PVC pipe shall be in conformance with ASTM D2464. All threaded joints shall be watertight.
9. Flanges for Schedule 80 PVC pipe shall be rated for a 150-psi working pressure with ANSI B16.1 dimensions and bolting pattern. Flanges shall be connected to PVC piping with threaded joints in accordance with ASTM D2467 or ASTM 2464, respectively.

### C. Fusible PVC Pipe

1. Fusible PVC pipe sizes 4-inch (100 mm) to 36-inch (900 mm) shall conform to AWWA C900/C905 as applicable and follow the dimension ratios (DR) set forth in the requirements listed for PVC pipe.
2. Fusible PVC pipe shall be blue in color to designate potable water.
3. Fusible PVC pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
4. Fusible PVC pipe shall be manufactured in a standard 40-foot nominal length-, or custom lengths as specified.
5. Joints shall be made by butt fusing sections of pipe with manufacturer-approved equipment.
6. Fittings shall be ductile iron mechanical joint and comply with the requirements set forth in the specifications for Ductile Iron Pipe and Fittings.

### D. High Density Polyethylene (HDPE) Pipe

1. HDPE pipe sizes 4-inch (100 mm) and larger shall be a PE 4710/3408 high density, extra-high molecular weight polyethylene manufactured from first-quality high density polyethylene resin containing no additives, fillers, or extenders. The HDPE pipe shall have an ASTM D3350 cell classification of PE 445574C, shall meet the requirements of AWWA C906, and shall be sized based upon the ductile iron

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pipe size (DIPS), outside diameter (OD) sizing system. The HDPE pipe shall be a minimum DR 11, pressure class 160 psi, and shall bear the NSF approval seal.

2. HDPE pipe shall be blue or marked with a permanent blue stripe to designate potable water.
3. Joints shall be made by butt fusing sections of pipe with manufacturer-approved equipment.
4. Fittings shall be ductile iron mechanical joint meeting the requirements of ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11.
5. The pipe shall have fusion welded restrainer ring, follower gland, and a 12-inch (300 mm) stainless steel insert for the mechanical joint connection.
6. HDPE water mains shall be properly sized utilizing the inside diameter of the nominal pipe diameter. If during construction HDPE is substituted for other pipe materials, the Contractor shall verify that the inside diameter of the HDPE is the same or larger than the inside diameter of the pipe originally specified.

### E. Steel Casing Pipe

1. All materials, design, fabrication, handling, and testing of steel casing pipe shall conform to the requirements of ASTM A139, AWWA C200 and AWWA Manual M11 "Steel Pipe – A Guide for Design and Installation."
2. Steel casing pipe shall be new, smooth-wall, carbon steel pipe conforming to ASTM Specification A139, Grade B with a minimum yield strength of 35,000 psi. Steel casings shall be used with the size, minimum thickness, length, and coating specified on the Plans or [DWM's Specification Section 02224](#).
3. Additional anti-corrosion measures, as specified by the manufacturer or indicated on the Plans, shall be provided at connectors, couplings, rollers, restraints, etc.
4. Unless specified otherwise in the Plans or [DWM's Specification Section 02224](#), casing pipe end seals shall consist of 1/8-inch (6 mm) thick flexible synthetic rubber boot with adjustable stainless-steel banding straps. The annular space of the casing shall not be filled with concrete or grout.
5. Casing spacers shall consist of a stainless-steel shell, PVC ribbed liner, and non-conducting separators to keep the carrier pipe from touching the casing pipe. Spacers shall be provided at a maximum of 10-foot intervals and within 2 feet (0.6 m) of the end of the casing pipe.

### F. Pipe Detection Wire

1. Unless otherwise specified by the Plans or [DWM's Specification Section 02665](#), open cut installations of non-metallic pipe shall include minimum #12-gauge tracing wire. Pipe installed by directional drill shall include two (2) insulated 8-gauge tracer wire. Wire shall be solid copper insulated with HDPE installed along pipe, wrapped around service line stub outs and stubbed into valve boxes for locating purposes. Wire shall be properly spliced to provide continuous conductivity.

### G. Warning Tape

1. Water mains shall be installed with polyethylene film warning tape manufactured for marking and identifying underground water utilities. Tape shall be a minimum of 2 inches (50 mm) wide and 4 mils thick, blue in color, with continuously printed letters reading "CAUTION BURIED WATER LINE BELOW".

### H. Gate Valves

1. Gate valves 3 inches (80 mm) and larger shall be of the resilient seat type meeting the requirements of AWWA C509 or C515. Valves shall be iron body, bronze trimmed, with non-rising stems, and shall be fusion-bonded epoxy coated per ANSI/AWWA C550. Valves shall have a minimum design working pressure of 200 psi.
2. Valves shall be manually operated by nut and open counter-clockwise unless specified otherwise in the Plans or [DWM's Specification Section 02691 or 15100](#).
3. The resilient seating arrangement shall provide zero leakage at the design working pressure when installed with line flow in either direction. All ferrous surfaces inside and outside shall have a fusion bonded epoxy coating. All valves shall be provided with O-ring seals. The design and machining of valves shall be such as to permit replacing the O-ring seals in the valves while in service without leakage.



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4. All gate valves, when fully opened, shall have an unobstructed waterway diameter equal to or larger than the full nominal diameter of the valve.
5. In general, valves shall be designed for vertical installation. Valves installed in the horizontal position shall be provided with bevel gears, extended gear case, rollers, tracks, and scrapers.
6. Exposed or above-ground gate valves shall be outside screw and yoke (OS&Y) flanged joint type with an operating hand wheel. The face-to-face dimensions and drilling shall conform to ANSI B16.10 for Class 125 flanged joint end gate valves.
7. Valves shall include mechanical joints, bolts, glands, gaskets, and all other materials necessary to join to existing work.
8. Provide brass identification tag imprinted with “WATER”, valve size, valve type, and direction and number of turns to open. Provide a ¼-inch (8 mm) hole in the brass tag and attach the tag to the end of the locate wire (twist wire around tag). Tag shall be 2-inch (50 mm) diameter and ⅛-inch (6 mm) thick brass with a ¼-inch (8 mm) hole.

### I. Insertion Valve

1. Insertion type valves shall be resilient wedge gate valves designed to be installed into an existing pressurized potable water main without interruption of flow through the pipe and no reduction of line pressure.
  - a. Valve shall be fusion-bonded epoxy coated in compliance with AWWA C550.
  - b. The construction of the resilient wedge shall comply with AWWA C509 requirements.
  - c. The resilient wedge shall be fully encapsulated with EPDM rubber and shall seat on the valve body and not the pipe. The resilient wedge shall be totally independent of the carrier pipe.
  - d. Valve shall be restrained to the pipe.
  - e. Valves shall be suitable for operating pressures up to 250 psi.

### J. Butterfly Valves

1. Butterfly valves shall be of the tight-closing, rubber seated type, with rubber seat positively locking in place sealing against flow from either direction. Valves shall be hand operated with cast or ductile iron bodies. Valves shall conform to the requirements of AWWA C504, Class 150B, and shall be fusion-bonded epoxy coated per ANSI/AWWA C550.
2. Valves shall have a 2-inch (50 mm) square operating nut and shall be installed with extension stems to extend the operating nut in accordance with the project details. Valves shall open by turning the operating nut counter clockwise unless specified otherwise in the Plans or [DWM’s Specification Section 02691 or 15100](#).
3. Valve shafts shall be of 304 or 316 stainless steel.
4. Buried butterfly valve end connections shall be installed using restrained mechanical joints.
5. Flanged valves shall be fully faced and drilled in accordance with ANSI Standard B16.1, Class 125.
6. Provide brass identification tag imprinted with “WATER”, valve size, valve type, and direction and number of turns to open. Provide a ¼-inch (8 mm) hole in the brass tag and attach the tag to the end of the locate wire (twist wire around tag). Tag shall be 2-inch (50 mm) diameter and ⅛-inch (6 mm) thick brass with a ¼-inch (8 mm) hole.

### K. Ball Valves

1. Ball valves 2-inch (50 mm) and smaller shall be designed for a working pressure of not less than 175 psi. End connection shall be threaded. The body and all parts shall be made in accordance with AWWA C800 and ASTM B62 latest revision.

### L. Tapping Sleeves and Valve Assembly

1. Tapping sleeves and valves sizes 4-inches (100 mm) and larger shall be stainless steel with wraparound gasket style, or ductile iron of the split-sleeve, mechanical joint type. Tapping sleeves shall be rated for a minimum 150 psi working pressure in accordance with ANSI/AWWA C110/A21.10.

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2. When tapping an existing asbestos cement pipe, a stainless-steel tapping sleeve which contains a full gasketed surface within the sleeve body shall be used due to variances in the manufactured outside diameter of the asbestos cement pipe.
3. Tapping sleeve shall have an outlet flange per ANSI B16.1, Class 125 standard.
4. The Contractor shall determine the outside diameter of the existing main before ordering the sleeve.
5. Tapping valves shall be mechanical joint outlet, non-rising stem, resilient seated gate valves meeting the applicable requirements of ANSI/AWWA C509/C515 and C550 with a minimum design working pressure of 200 psi.
6. Tapping valves shall be specifically designed for pressure tapping with sufficient seat opening to allow full diameter taps to be made.
7. Tapping valves shall be manufactured with an integral tapping flange having a raised lip design.
8. Tapping valves shall be furnished with a combination flange and mechanical joint for connecting the branch to the main.

### M. Valve Boxes

1. All valves shall be equipped with valve boxes. The valve boxes shall be heavy, roadway type boxes. The valve box cover shall be marked “WATER VALVE” or “WATER”.
2. Valve box materials shall conform to the requirements and standards set forth in the [DWM’s Specification Section 02691 or 15100](#), current published edition.
3. The valve boxes shall be adjustable up or down from the nominal required cover over the pipe. Extensions shall be provided as necessary. A precast concrete ring shall be placed around the valve box opening when outside of paved areas.
4. Valves shall be furnished with extension stems as necessary to bring the operating nut to within 24 inches (600 mm) minimum of the top of the valve box.

### N. Service Connection Assemblies

1. Water service connections and plumbing should conform to the standards set forth in the [DWM’s Specification Section 02668](#) and relevant local and/or state plumbing codes or to the Standard Plumbing Code as applicable within the jurisdiction in which the system is located.
2. Service connection assemblies shall be provided for all new service line connections to existing meters. Existing service lines indicated for replacement shall be replaced with new materials from the water main to the existing or new water meter.
3. Service connection assemblies shall include:
  - a. Service saddle
  - b. Corporation stop
  - c. Service line
  - d. Fittings
  - e. Curb stop
  - f. Water meter box
  - g. Water meter (separate Pay Item for new service connections)
  - h. Backflow preventer (separate Pay Item for new service connections)

### O. Service Saddles

1. Service saddles shall have ductile iron or bronze body with stainless steel epoxy coated double tie straps and nuts with pressure rating not less than that of the pipe to which it is to be connected.
2. Saddles shall have a rubber gasket cemented to the body, with compatible threading between the saddle and corporation stop. Saddles shall conform to ANSI/AWWA C800 standards.
3. The service saddle shall provide full support around the circumference of the pipe, providing a bearing area of sufficient width so that pipe will not distort when the saddle is tightened.

### P. Water Service Pipe

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1. Polyethylene (PE) pipe for water service lines shall conform to AWWA C901 and ASTM D-2737 and shall be 200 psi pipe, SDR 9 for copper tube size (CTS). Polyethylene extrusion compound from which the polyethylene pipe is extruded shall comply with applicable requirements for PE 3408 ultra-high molecular weight polyethylene plastic material as specified in AWWA C901.
2. Marking on the PE service pipe shall include the nominal pipe or tubing size, the type of plastic material, the standard thermoplastic pipe dimension ratio or the pressure rating in psi, the ASTM designation with which the pipe complies, and manufacturer's name or trade mark and code. It shall also include the NSF seal of approval for use with potable water.
3. Copper tubing for water service lines shall be seamless and shall conform to ANSI/AWWA C800 and ASTM B88, Type K soft, suitable for potable water use with a working pressure of 150 psi.
4. Water service line fittings shall be as indicated in [DWM's Specification Section 02668](#).

### Q. Corporation and Curb Stops

1. Corporation stops, curb stops, and other appurtenances for plastic or copper service lines shall meet the requirements of ASTM B62 and AWWA C800.
2. Service line taps shall be equipped with corporation stops. Corporation stops in sizes 1-inch (25 mm) through 2-inch (50 mm) shall be manufactured from cast bronze with machined fitting surfaces. The corporation shall be pressure rated to no less than 150 psi.
3. Curb stops shall be ball valve type and made of bronze. Pipe connections shall be suitable for the type of service pipe used and shall be pressure rated for no less than 150 psi.

### R. Water Meters

1. Water meters shall conform to the requirements and standards set forth in the [DWM's Specification Section 02668](#).

### S. Meter Boxes

1. Water meter boxes shall be high density, reinforced plastic body with one-piece cast-iron lid with lettering "WATER METER" on cover unless otherwise indicated on the Plans. Recessed hole shall be included in lid, if required by Utility Owner for electronic reading capability. Provide box of size and height appropriate to installation of meter and accessories required. Meter and curb stop shall be fully encased by the meter box.

### T. Concrete Vault

1. Concrete vaults shall conform to the requirements and standards set forth in the [DWM's Specification Section 02668](#) and standard details.

### U. Air Release Valve Assembly

1. Air release, air/vacuum valves, and combination air valves shall be suitable for use with potable water systems and manufactured in compliance with ANSI/AWWA C512.
2. Air release valves shall have a small venting orifice to vent the accumulation of air and other gases in the line or system under pressure.
3. Air/vacuum valves shall have a large venting orifice to permit the release of air as the line is filling or relieve the vacuum as the line is draining or is under negative pressure.
4. Combination air valves shall have operating features of both the air/vacuum valve and air release valve.
5. Valves shall be suitable for pressures up to 250 psi.
6. Air release, air/vacuum valves, and combination air valves shall conform to the requirements set forth in the [DWM's Specification Section 02691](#) or [15100](#) and standard details.

### V. Fire Hydrant Assembly

1. Fire hydrants shall be the compressive, post style, dry barrel type, and shall conform to the requirements of ANSI/AWWA C502 and local code requirements. The valve opening shall not be less than 4½-inch (115 mm). All hydrants shall be complete including joint assemblies.

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2. Hydrants shall be suitable for working pressure of 150 psi and shall be hydrostatically factory tested to 300 psi.
3. All working parts, including the seat ring, shall be removable through the top without excavating or disturbing the barrel of the hydrant.
4. Hydrants shall be constructed with a lubricant chamber which encloses the operating threads, and which provides automatic lubrication of the threads and bearing surfaces each time the hydrant is operated. This assembly shall be comprised of a top O-ring serving as a dirt and moisture barrier and a lower O-ring which will serve as a pressure seal.
5. Hydrants shall include two 2½-inch (65 mm) hose nozzles and one 4½-inch (115 mm) pumper connection with National Standard Fire Hose Threads unless specified otherwise in the Plans or [DWM's Specification Section 02645](#). Hydrant threads shall comply with the specifications of the local agency providing fire service.
6. Hydrant nozzle shall be constructed to face in any direction at any time by removing the safety flange bolts and revolving the head without digging or shutting off water.
7. Hydrants shall have pentagon operating nut measuring 1½-inch (40 mm) point to flat and shall open by turning counter-clockwise.
8. Hydrant shall have a safety-type vertical barrel with a minimum 3½-foot bury and be designed with safety flange and/or bolts to protect the barrel and stem from damage, eliminate flooding, and allow rapid replacement if hydrant is struck. All risers necessary for deeper bury applications shall be provided by the hydrant manufacturer.
9. Hydrants shall include positive, automatic drain valves which shall be fully closed when the main valve is open.
10. Bottom inlet of hydrant shall be provided with mechanical joint connection complete with accessories as specified and shall be 6-inch (150 mm) nominal diameter.
11. Fire hydrant shall be painted above ground with rust inhibiting enamel paint in accordance with [DWM's Specification Section 02645](#).
12. Hydrant assemblies shall be restrained from the hydrant to the tee at the main.

### W. Backflow Prevention Devices

1. Backflow prevention devices shall be installed where indicated on the Plans and shall meet all applicable AWWA, State, and local code/ordinance requirements.
2. Backflow preventer materials shall conform to the requirements and standards set forth in the [DWM's Specification Section 15150](#).

### X. Thrust Collars and Thrust Blocks

1. Concrete used for thrust collars or thrust blocks shall meet the "Class A" requirements for concrete listed in [Section 500](#).
2. Thrust collars shall include welded-on collars attached by the pipe manufacturer or retainer glands. Concrete shall be poured continuous around the pipe and bear against undisturbed earth.
3. Reinforcing steel shall meet the requirements set forth in the Plans or [DWM's Specification Section 03301](#).
4. Mechanical joint restraints shall be utilized in lieu of thrust blocks with the approval of Utility Owner.

### Y. Manholes

1. Precast reinforced manholes shall be manufactured in accordance with ASTM C478 and shall have a minimum wall thickness of 5 inches (127 mm). All concrete shall have a minimum compressive strength of 4,000 psi when tested in accordance with ASTM C478.
2. Joints between precast sections shall be sealed by means of rubber O-ring gaskets or flexible butyl rubber sealant.

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3. Non-shrinking grout or a flexible seal shall be used to seal the pipe penetrations and prevent water from entering the manhole.
4. Manhole rings and cover shall be per the [DWM's Specification Section 05500](#) and standard details.

### 670.2.02 Delivery, Storage, and Handling

- A. Handle pipe, fittings, valves, and accessories carefully to prevent damage. Handle pipe by rolling on skids, forklift, or front-end loader. Do not use material damaged in handling. Slings, hooks, or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior coatings or internal lining of the pipe. Do not use chains in handling pipe, fittings, or appurtenances.
- B. To unload pipe, carefully lift and lower it into position using approved padded slings, hooks, or clamps. Furnish equipment and facilities for unloading, handling, distributing, and storing pipe, fittings, valves, and accessories. Make equipment available at all times for use in unloading. Do not roll, drop or dump materials. Any materials dropped or dumped shall be subject to rejection without additional justification.
- C. Stored materials including salvaged materials shall be kept in suitable areas safe from damage. The interior of all pipe, fittings, and other appurtenances shall be kept free from dirt or foreign matter at all times. Store and support plastic pipe to prevent sagging and bending. Store plastic pipe and gaskets to prevent exposure to direct sunlight. Valves and hydrants shall be stored and protected from damage by freezing.
- D. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tier shall be kept off the ground on timbers, rails, or concrete.

### 670.3 Construction Requirements

#### 670.3.01 Personnel

- A. General Provisions 101 through 150.
- B. Construction and installation of all water utilities shall be performed by a Contractor prequalified/registered with GDOT.
- C. All work specified in this section, except for water system service line installation shall be performed by a Contractor with a valid Utility Contractor's license issued by the State of Georgia. Water service line installation shall be performed by either a Utility Contractor licensed in the State of Georgia or by a Master Plumber licensed in the State of Georgia.
- D. Qualifications
  1. Ensure that the construction and installation of the water distribution system is performed by a contractor prequalified/registered by the Department of Transportation and City of Atlanta. Construct water line distribution and supervise the work with personnel who are experienced in this type of work. Visit and examine the work site and all conditions, and take into consideration all such conditions that may affect the work. At least 10 days after Notice to Proceed (NTP), submit to the Engineer for review and approval two (2) completed PIPELINE CONTRACTOR QUALIFICATIONS applications.
    - a. The entire PIPELINE CONTRACTOR QUALIFICATIONS application shall be completed, and all supporting documentations shall be included. Failure of the Contractor to complete all forms or to include all requested supporting documentations will result in the Pipeline Contractor being disqualified from the work. The Department and the City of Atlanta Engineer will have 30 days to review and approve application.
    - b. The Pipeline Contractor shall meet all qualifications within the application in order to work on the water line installation.
    - c. The Department and City of Atlanta will be sole judge of the qualifications of the pipeline contractor. If the applicant is rejected, the Contractor shall submit another applicant. No additional time or compensation will be considered for resubmittal of another applicant.
    - d. Provide a detail sequence of construction for the waterline installation that describes all materials, construction plan and method of construction, and equipment to be used.
  2. No work on the waterline installation shall begin until the qualification, construction plan and method have been approved in writing by the Engineer.

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3. The PIPELINE CONTRACTOR QUALIFICATIONS application forms are located in City of Atlanta's standard specifications, attached,

### 670.3.02 Equipment

- A. Ensure all equipment used is in conformance with the requirements and standards set forth in the [DWM's standard specifications](#), current published edition.

### 670.3.03 Preparation

General Provisions 101 through 150.

### 670.3.04 Fabrication

General Provisions 101 through 150.

### 670.3.05 Construction

#### A. Finding Existing Underground Utilities and Obstructions

1. Comply with [Subsection 107.13](#) and [Subsection 107.21](#).
2. According to the best information available to GDOT, all known water lines, sewer lines, gas lines, telephone conduits, drainage structures, etc. are shown on the Plans. However, to find such installations, use an electronic pipe and cable finder in locating existing installations or obstructions to the work.
3. When unforeseen conflicts require Plan changes, perform the work as altered according to [Subsection 104.03](#) and [Subsection 104.04](#).
4. Follow all Utility Owner customer notification requirements and obtain approval from the Utility Owner and GDOT Project Manager prior to disrupting any existing water services as required to install the water facilities shown on the Plans.

#### B. Jack and Bore

Comply with [Section 615](#) for sewer main installations by jack and bore.

#### C. Directional Drilling

1. Install water mains and services by means of directional drilling at locations shown on the Plans or where approved by GDOT or Utility Owner. Provide submittals and follow all relevant procedures and requirements set forth in the [DWM's Specification Section 02595](#).
2. The Contractor shall not initiate horizontal directional drilling until all submittals are received, reviewed, and accepted by GDOT and the Utility Owner, and all required permits are obtained.
3. The Contractor shall select drilling additives and fluid mixture proportions to ensure continuous circulation, bore stability, reduce drag on the pipe, and completely fill the annular space between the bore and the pipe to ensure stability and control settlement.
4. The Contractor shall submit contingency plans for remediation of potential problems that may be encountered during the drilling operations. The contingency plans shall address the observations that would lead to the discovery of the problem and the methods that would be used to mitigate the problem. Potential problems that shall be addressed include:
  - a. Loss of returns/loss of circulation of drilling fluid.
  - b. Encountering obstruction during pilot bore or reaming/pullback.
  - c. Drill pipe or product pipe cannot be advanced.
  - d. Deviations from design line and grade exceed allowable tolerances.
  - e. Drill pipe or product pipe broken off in borehole.
  - f. Product pipe collapse or excessive deformation occurs
  - g. Utility strike.
  - h. Hydrolock occurs or is suspected.
  - i. Excessive ground settlement or heave of ground surface or existing utilities.

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- j. Inadvertent returns / hydrofracture or surface spills resulting in drilling fluids entering water or reaching the surface.
5. Pipe damaged in directional drilling operations shall be removed and replaced at no additional expense to GDOT or the Utility Owner.
6. Voids developed or encountered during the installation operation shall be pressure grouted with a grout mix approved by GDOT.
7. Installation shall include a locatable conduit system, with identification markers on each side of GDOT right-of-way where applicable. Two (2) insulated 8-gauge solid copper tracers wire shall be attached to the leading end of the pipe pulling head and shall extend the full length of the installed pipe.
8. The location and alignment of the pilot drill progress shall be continuously monitored for compliance with the proposed installation alignment and for verification of the depth of the bore. Monitoring shall be accomplished by computer generated bore logs which map the bore path based on x, y, z coordinate information provided by the locating/tracking system. Readings or plots shall be obtained on every drill rod, and shall be provided to the Inspector on a daily basis. Deviations between the recorded and design bore path shall be calculated and reported on the daily log. If the deviations exceed tolerances specified elsewhere, such occurrences shall be reported immediately to GDOT. The Contractor shall undertake all necessary measures to correct deviations and return to design line and grade.
9. Upon completion of the directional drill the Contractor shall furnish GDOT and the Utility Owner an as-built drawing along with a report of the monitoring of the drilling fluids during the pilot hole and back reamed hole.
10. Drilling fluid pressures, flow rates, viscosity, and density shall be monitored and recorded by the Contractor. The pressures shall be monitored at the pump. These measurements shall be included in daily logs submitted to GDOT. The Contractor shall document modifications to the drilling fluids, by noting the types and quantities of drilling fluid additives and the dates and times when introduced. The reason for the addition of drilling fluid additives or other modifications shall be documented and reported.
11. Management and disposal of drilling fluids shall be the Contractor's responsibility. Excess drilling fluids shall be contained at the entry and exit points until recycled or removed from the site. All drilling fluids shall be disposed of in a manner acceptable to the appropriate local, state and federal regulations. The Contractor's work will be immediately suspended by GDOT whenever drilling fluids seep to the surface other than in the boring entrance or exit pit, or when a paved surface is displaced.
12. Surfaces damaged by the work shall be restored to their preconstruction conditions at no additional cost to GDOT or Utility Owner, and with no increase in contract time.
13. The following items shall be as shown on the Plans, unless otherwise approved in writing by GDOT:
  - a. Entry / exit points
  - b. Drill entry / exit angles
  - c. Pilot bore path
    - 1) Radius of Curvature
    - 2) Entry / exit tolerances: Contractor shall be solely responsible for all work necessary to correct excessive deviations from line and grade, including re-drilling, redesigning connections, and acquiring additional easement, at no additional cost to GDOT or Utility Owner and without schedule extension.
14. The pilot bore shall be pre-reamed and reamed using equipment and methods submitted by the Contractor. The Contractor shall completely ream the bore to the final diameter prior to pullback.
15. Pullback: The pipe shall be installed by pulling it into the reamed bore path in a continuous operation, behind a final reaming tool selected by the Contractor. The pipe shall be isolated from excessive torsional and axial stresses by a swivel device with a pre-established breakaway tensile capacity that is lower than the allowable tensile strength of the pipe. The maximum pull (axial tension force) exerted on the pipelines shall be measured continuously and limited to the maximum allowed by the pipe manufacturer with an

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appropriate factor of safety so that the pipe or joints are not overstressed. The end of the pipe shall be closed during the pullback operation.

16. Pipelines shall be adequately supported during installation so as to prevent overstressing or buckling. The Contractor shall provide adequate support/rollers along the pipe layout area to support the required length of pipe for the bore. The pipe layout area shall be cleared of all large stones, construction debris, or other foreign objects that could damage the pipe during pullback. The Contractor shall monitor and inspect pipe rollers and method for suspending pipe at entry during the pullback operation to avoid damage to the pipe.
17. The end of the pipe shall be closed during the pullback operation.
18. Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately before joining.
19. The Contractor shall at all times handle the pipe in a manner that does not overstress or otherwise damage the pipe. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 50% of yield stress for flexural bending of the pipe. If the pipe is buckled or otherwise damaged, the damaged section shall be removed and replaced by the Contractor at his expense. The Contractor shall take appropriate steps during pullback to ensure that the pipe and tracer wires will be installed without damage.
20. If necessary, the pipe shall have water added as it enters the bore to achieve neutral buoyancy and reduce pullback loads and to ensure that adequate internal pressure is maintained at all points to counter balance collapse pressures.
21. The Contractor shall cease pullback operations if the pipe is damaged and shall remove the pipe from the bore and repair the pipe using the manufacturer's recommended procedure or replace the damaged pipe before resuming installation.
22. Damage to the pipe resulting from manufacturer defects, installation, or grouting is the responsibility of the Contractor, including costs for replacement and labor and materials. To confirm no damage to the pipe, upon completion of pull back, the Contractor shall pull a sphere or pig through the entire length of the pipeline. The pig shall be one inch less in diameter than the internal diameter of the product pipe, capable of allowing water to pass through it, complete with a pulling cable on either side. If the pig or sphere cannot pass through the pipe, it shall be considered collapsed and damaged.
23. After the carrier pipe is completely pulled through the bore, a sufficient relaxation period as recommended by the pipe manufacturer shall be provided before the final pipe tie-in.
24. The Contractor shall conduct a final hydrostatic test of the installed pipeline. Final test shall be in accordance with these specifications. The Contractor shall repair any defects discovered during this test, and repeat until the pipe passes the test.

### D. Excavating Trenches

1. The Contractor shall provide all necessary shoring and bracing materials as required to assure safe working conditions and to protect the excavations. The Contractor shall be required to fully comply with all applicable OSHA Excavation Safety Standards. No separate payment shall be made for any special procedure used in connection with the excavation.
2. Excavate trenches to the proper depth and width as follows:
  - a. Trench to Grade: Excavated trench bottoms shall be firm, free from boulders, and conform to the established grade. Limit open trench excavation to a maximum of three 300 feet (90 m) ahead of completed backfill.
  - b. Care shall be taken not to over excavate except where necessary to remove unstable material, irregularities, lumps, rock, and projections. Unnecessary over excavation shall be replaced at the Contractor's sole expense and in accordance with Subsection 670.3.05.
  - c. Excavation carried below the established grade lines shown or established by the Utility Owner shall be backfilled according to Section 207 and Subsection 670.3.05. Use Class I or Class II Soils (defined in Section 810) and firmly compact the soil.



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- d. Where the established grade of a trench is in rock, undercut the bottom of the trench by at least 6 inches (150 mm) beneath the pipe or conduit and the greater of 24 inches (600 mm) wider than the pipe/conduit (12 inches or 300 mm each side) or 42 inches (1050 mm) wide, then backfill and compact according to Subsection 670.3.05.
  - e. Excavation in pavement and pavement patching shall be according to GA Standard No. 1401. Remove the pavement according to Section 444, except no separate payment shall be made for sawed joints.
  - f. Dewatering: Remove all water from excavations and maintain the excavations free of water while construction therein is in progress. Provide dewatering equipment as necessary to conform to this requirement. Dewatering procedures must meet all state and local regulatory requirements.
3. Minimum Trench Depth
- a. Excavate trenches to provide at least 48 inches (1.2 m) cover depth directly above the pipe to the finished pavement surface, sidewalk, grass, etc. unless indicated otherwise on the Plans or by the Utility Owner and GDOT Project Manager. In order to avoid existing utilities, it may be necessary for the pipe to be laid shallower or deeper than the minimum cover specified. At such time the Contractor shall not be allowed extra compensation for additional excavation necessary for deeper installations.
  - b. Side slopes of the trenches shall be as nearly vertical as practicable. Trenches in excess of 5 feet (1.5 m) deep shall either have the trench sides laid back to conform to OSHA requirements for trench safety, if such area is available within the limits of excavation, or, alternatively, trenches deeper than 5 feet (1.5 m) shall be excavated via trench box or shored and braced.
  - c. If any part of a water main is to be placed in or under a new embankment, finish the embankment to at least a 2-foot plane above the outermost portion of the pipe barrel before excavating the trench.
4. Trench Width: Excavate trenches to uniform widths wide enough to allow proper installation of pipe, fittings, and other materials, a minimum of 6 inches (150 mm) and a maximum of 12 inches (300 mm) each side of the pipe or conduit.
5. Trench Bell Holes: Excavate bell holes deeply and widely enough to make joints and to allow the pipe barrel to rest firmly on the trench bottom.
6. Trench bottom: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduits. Shape subgrade to provide continuous support of bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits/pipes. Remove projecting stones, tree roots, debris, and sharp objects along trench subgrade. Abrupt changes in grade of the trench bottom shall be avoided. Unless otherwise indicated in the Plans or DWM's Specification Section 02225, trenches for water mains shall be graded as much as possible to avoid high and low points that necessitate air release valves.
7. Excavations may be completed and refilled either by hand or by machinery. Hand tool excavation shall be conducted where necessary to protect existing utilities and structures.
8. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the Plans, the Utility Owner and GDOT Project Manager shall be notified. Such material shall be removed and replaced with suitable material in accordance with Section 205 by the written request of the GDOT Manager.

### E. Connecting to Existing Mains

1. Connect to an existing main with the appropriate fittings according to the Plans or the Utility Owner and GDOT Project Manager. When making connections under pressure, (i.e. when normal water service must be maintained), furnish and use a tapping sleeve and valve assembly or line stop fittings as indicated. Coordinate with Utility Owner 72 hours in advance for water service interruptions and temporary shut-offs. Evening or weekend work may be required to complete direct connections and tie-ins. Connect to existing mains as follows:
  - a. Before opening new pipeline trenches, locate the various points of connection to be made into existing pipelines. If necessary, uncover pipelines for the Utility Owner and GDOT Project Coordinators to prescribe the connections and fittings needed.

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- b. Connect to existing pipelines only to meet operating requirements. Cut existing lines only after obtaining the Utility Owner and GDOT Project Manager' permission.
- c. Provide temporary line stops, associated fittings, and bypass pumping as indicated on the Plans and as necessary when cutting and plugging existing water mains to prevent service interruptions. Line stop, and associated fittings shall be suitable for working pressures of 250 psi.
- d. Connections to existing asbestos cement pipe shall be installed as indicated on the Plans or in [DWM's Specification Section 02665](#). Cutting, removing, handling, and disposing of asbestos cement pipe shall be in accordance with requirements established by EPA, OSHA, GDOT, NIOSH, and the State of Georgia Environmental Protection Division, and any other applicable laws and ordinances.

### F. Laying Water Mains and Appurtenances

#### 1. Preparing and Handling Pipes

- a. Thoroughly clean the pipe and fittings before laying them. Keep them clean until accepted.
- b. Use suitable tools and equipment. Do not damage the pipe, especially the cement lining inside the pipe.
- c. Cut pipe in a manner to avoid damage to pipe or lining, leaving a smooth end at right angles to pipe axis. Smooth and bevel edges of cut pipe for push-on, gasket type joints.
- d. Bedding shall be provided as specified by the Utility Owner or pipe manufacturer for the type of conditions encountered. Bedding typically consists of granular soil free of lumps, clods, cobbles, and frozen materials, and shall be graded to a firm-but-yielding surface without abrupt changes in bearing value. Unstable soils and rock ledges shall be undercut from the bedding zone and replaced with suitable material.
- e. Bed pipe on coarse granular material in flat bottom trench with entire pipe barrel bearing uniformly on coarse granular material, except for an approximately 18-inch (450 mm) gap at pipe balance point for sling removal. Hand excavate and backfill as required to provide uniform and continuous bearing and support for the pipe. Do not support pipe on hubs or end bells. Consolidate coarse granular material under and around pipe up to pipe centerline by tamping.
- f. Join pipe with bells facing direction in which laying operation is progressing. Lay pipe upgrade wherever line grade exceeds 10%.
- g. Carefully examine pipe for cracks and other defects and do not lay defective pipe. If pipe or castings appear to be cracked, broken, or defective after laying, remove and replace those sections.

#### 2. Alignment and Gradient

- a. Pipe alignment and gradient shall conform to the Plans. Deflect pipe lines only where indicated on the Plans, within allowable horizontal and vertical deflection angles according to the manufacturer.
- b. Water mains shall be laid at least 10 feet (3 m) horizontally from any existing or proposed sanitary sewer, storm sewer or sewer manhole. The distance shall be measured edge-to-edge. When local conditions prevent a horizontal separation of 10 feet (3 m), the water main may, on a case-by-case basis, be laid closer to a sewer provided the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches (450 mm) above the top of the sewer.
- c. Maintain a vertical separation of at least 18 inches (450 mm) between the crown of sanitary sewers and the invert of existing or proposed water mains with the sewer located below the water main. Where a vertical separation of 18 inches (450 mm) cannot be provided, and the water main cannot be relocated to provide adequate clearance, center one full length of water main over the sewer so that both joints of the water main will be as far from the sewer as possible.

#### 3. Special Requirements for Laying Water Mains

- a. Excavate, clean, lay, joint, and backfill progressively and uniformly according to these requirements:
  - 1) Never leave pipe in the trench overnight without completely jointing and capping.
  - 2) Do not leave completed pipeline exposed in the trench. Backfill and compact the trench as soon as possible after laying, jointing, and testing are complete.

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- 3) At the close of work each day and when laying pipe, close the exposed end of the pipeline in the trench with an approved wood or metal head or barrier.
- 4) If necessary to cover the end of an incomplete pipeline with backfill, close the end of the pipe with a satisfactory cap or plug.

### G. Installing Water Mains by Open Cut

1. Use the following flexible joints for connections inside the roadway shoulders or curbs and gutters:
  - a. Mechanical Joints:
    - 1) When using mechanical joints, thoroughly wash bell sockets, spigots, gland, gasket, nuts, and bolts with soapy water before assembly. Keep these parts wet until the jointing operation is complete.
    - 2) Tighten nuts within the torque range recommended by the manufacturer. Check the tightening tolerance with a torque wrench.
    - 3) If effective sealing is not attained at the maximum recommended torque, disassemble, thoroughly clean, then reassemble the joint.
    - 4) Do not overstress bolts to compensate for improper installation or defective parts.
  - b. Push-On Type Joints
    - 1) Use push-on joints made according to the manufacturer's recommendations.
    - 2) Install PVC pipe in accordance with AWWA C605.
    - 3) Install ductile iron pipe in accordance with AWWA C600.
2. Restraints for pipe joints and fittings shall be provided as specified and as shown on the Plans. Restraints shall be installed per manufacturer's recommendations.
3. Buried ductile iron pipe and fittings shall be polyethylene encased as specified and as indicated on the Plans. Polyethylene encasement tubing shall be secured with polyethylene tape and installed in accordance with ANSI/AWWA C105/A21.5.
4. Unless otherwise specified by [DWM's Specification Section 02665](#), provide pipe detection wire on all non-metallic pipe systems. Tape the tracer wire to the top center of the pipe at intervals which prevent wire displacement during backfilling operations. Stub tracer wire up 6 inches (150 mm) above finished grade at all valves and fire hydrants. For splices, use direct bury kits. After backfilling is complete, test electrical continuity of each tracer wire segment and provide test results to Utility Owner and GDOT Project Manager.
5. Install continuous underground warning tape during backfilling of trench for underground water distribution piping. Install 12 inches (300 mm) below finished grade, or 6 inches (150 mm) below subgrade under pavements and walkways, and buried directly over piping.
6. Use pipe cutters when cutting pipe or special castings. Do not use a hammer, chisel, or a cutting torch.
7. [At locations where water mains do not meet minimum depth of cover requirements, Contractor shall notify Engineer of locations where water mains do not meet minimum depth of cover requirements. Engineer shall provide recommendation before Contractor proceeds.](#)
8. If HDPE pipe is to be installed where high groundwater table or water surrounding the pipe is expected, precautions shall be taken to provide neutral buoyancy to prevent floatation or a change in alignment.
9. Isolation Valves on Water Mains: Install and joint gate and butterfly valves as specified in [Subsection 670.2.01](#) in accordance with AWWA C600. Include the valve box and valve marker where required.
10. Air release valves shall be located at high elevation points on the pipeline. Air release valves shall be installed at locations indicated in the Plans and in accordance with manufacturer's recommendations.
  - a. Air release valves shall be installed in a shallow manhole or vault as indicated in the Plans and [DWM's Specification Section 15151](#). Automatic air relief valves shall not be used in areas where flooding of the manhole or vault may occur.
  - b. An isolation valve shall be installed between the air release assembly and the connection to the main.

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- c. The Contractor shall furnish and install at no additional cost to GDOT or Utility Owner all necessary fittings for the installation of air release valves at high points.
11. Pressure reducing/sustaining valves of the size and type indicated shall be installed as shown on the Plans per manufacturer's recommendations.
12. Fire Hydrants: Install and joint hydrants as specified in Subsection 670.2.01 and in accordance with AWWA C600. Include required vertical extension sections. Also, include pipe strap installation, restraints, crushed stone drain, and backfill according to the Plans and this Section. Spacing of fire hydrants shall be as indicated in DWM's Specification Section 02645.
13. Concrete Thrust Collars and Thrust Blocks: If required, furnish materials and install thrust collars or concrete blocking according to Subsection 670.2.01. Form and pour concrete thrust collars or blocks in accordance with the Plans and the DWM's Specification Section 02665. Blocking shall be poured against undisturbed earth and all forms shall be removed before backfilling.
14. Backfilling
  - a. Furnish equipment, labor, and when necessary material required for backfilling the pipe line trenches according to Section 207, and as follows:
    - 1) When testing for visual leaks in open trenches, do not backfill until testing is complete and leaks are eliminated.
    - 2) When retaining pavement adjacent to trenches, replace removed pavement with the same or better material when approved in accordance with the appropriate Section for the pavement type replaced.
    - 3) Place backfill on subgrades free of mud, frost, snow, or ice.
    - 4) Place and compact bedding course on trench bottoms and where indicated. Shape the bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits/pipes.
    - 5) Backfill shall include Class I or Class II Soils as defined in Section 810 or suitable material that conforms with DWM's Specification Section 02225.
    - 6) Backfill shall be placed in two stages: first, side fill to a height of 12 inches (300 mm) above the top of pipe; second, overfill to former surface grade. Side fill shall consist of granular material laid in 6-inch (150 mm) layers each consolidated by mechanical tamping and controlled addition of moisture, to a density of 95% as determined by as determined by the Standard Proctor test (AASHTO T-99 Method D) or GDT 67. Overfill shall be layered and consolidated to match the entrenched material in cohesion and compaction. The top 12 inches (300 mm) shall be compacted to 100% of specified density. Consolidation by saturation or ponding shall not be permitted.
    - 7) Soil Moisture Control: Uniformly moisten and aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2% of optimum moisture content. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2% and is too wet to compact to specified dry unit weight.
    - 8) Initial backfill shall be carefully compacted under pipe haunches and evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Place and compact fill and backfill of satisfactory soil to final subgrade elevation. Backfill voids with satisfactory soil while removing shoring and bracing and/or trench boxes.
    - 9) After backfilling, maintain temporary surface restoration per GA Standard No. 1401 until permanent repaving is complete. No separate payment shall be made for replaced pavement.
15. Disinfection of Water Mains
  - a. New and existing pipelines and appurtenances shall be disinfected before placing into service. Disinfection can be conducted in conjunction with the pressure test.
  - b. Before the main is chlorinated, it shall be filled to eliminate air pockets and shall be flushed to remove particulates.

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- c. During disinfection of the water mains, an appropriate cross-connection control device, consistent with the degree of hazard, shall be provided for backflow protection of the active distribution system.
- d. Chlorination: Sterilize using only potable water with calcium hypochlorite (HTH), 1% chlorine solution, or other products acceptable to the Utility Owner and GDOT Project Manager and Department of Public Health. Comply with AWWA C651 including Section 9 procedures on final connections to existing mains.
  - 1) The chlorine solution used for disinfection of water mains shall have a free chlorine residual concentration not less than 25 mg/L or in accordance with [DWM's Specification Section 02675](#).
  - 2) Add enough disinfectant to provide a chlorine residual of not less than 10 parts per million (ppm) in 24 hours or as required in [DWM's Specification Section 02675](#). All valves and hydrants shall be operated to ensure disinfection of the appurtenances.
  - 3) At the end of 24 hours, check the chlorine residual. If it is less than 10 ppm, add additional chlorine and check the line again after 24 hours.
- e. After the applicable retention period, the chlorinated water must not be disposed in a manner that will harm the environment. Neutralizing chemicals, such as Sulfur Dioxide, Sodium Bisulfite, Sodium Sulfite or Sodium Thiosulfate can be used to neutralize the chlorine residual remaining in the water to be wasted.
- f. After sterilization, flush the line with potable water until the chlorine residual is equal to the existing system.
  - 1) After final flushing and before the water main is placed into service, water samples shall be collected from the main and tested for microbiological quality in accordance with the Georgia Rules for Safe Drinking Water. Samples shall be taken in the presence of the Utility Owner and GDOT Project Manager.
  - 2) When test results are not satisfactory, the pipeline shall be flushed and disinfected again as necessary without additional compensation until satisfactory results are obtained.

### H. Laying Service Lines and Appurtenances

- 1. Except as modified in this Section, construct and install service connection assemblies and lines according to the Plans and the requirements for laying water mains. Install service lines at locations shown on the Plans or where designated by the Utility Owner and GDOT Project Manager.
- 2. Install new pipe from the water main to the final location of the meter or to points designated by the Utility Owner and GDOT Project Manager to connect with existing or future service lines on abutting property.
- 3. No water service connections shall be performed until the main is tested and disinfected. Water service lines shall be tested and disinfected prior to connection to the main.
- 4. If required, install water service line inside casing pipe according to the Plans.
- 5. At roads, paved drives, retaining walls, and other paved areas, install service tubing or casing pipe by pushing, pulling, or augering techniques. At all other locations, install service tubing by trenching and backfilling unless directed otherwise by GDOT.
- 6. Service line installation includes all connections using saddles, unions, valves, fittings, corporation stops, curb stops, casing, and any and all appurtenant work required to provide a complete water service connection.
- 7. Excavate for service lines as specified in [Subsection 670.3.05](#) with the following exceptions:
  - a. Ensure that trenches under pavements and across driveways are deep enough to provide at least 48 in (1.2 m) of cover, unless otherwise specified by [DWM's Specification Section 02668](#) or directed by the Utility Owner and GDOT Project Manager.
  - b. At other areas, trench depth and backfill cover may be adjusted at the discretion of the Utility Owner and GDOT Project Manager to provide at least 18 in (450 mm) of cover.

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8. Backfill service lines as specified in [Subsection 670.3.05](#).
9. All service lines, fittings, and appurtenances necessary for the water service connections shall be installed and backfilled in accordance with the manufacturer's recommendations and as per [DWM's Specification Section 02668](#) and standard details.

### I. Cutting and Capping Existing Water Mains

1. Disconnect by sawing or cutting and removing a segment of existing pipe where cutting and capping or plugging is shown on the Plans or directed by the Utility Owner or GDOT Project Manager. Provide a watertight pipe cap or plug and restraint mechanism to seal off existing mains indicated to remain in service. If water main is to be abandoned or removed and not specified to be grout filled, seal ends with a pipe cap or plug or with a masonry plug and minimum 6-inch (150 mm) cover of concrete on all sides around the end of the pipe.
2. The Contractor shall be responsible for uncovering and verifying the size and material of the existing main to be capped or plugged.
3. Abandoned manholes and water mains greater than 6-inch (150 mm) shall be filled with flowable fill per Section 600 at the locations indicated on the Plans. Air release valves and water service connections along the abandoned main shall be plugged prior to grouting. Prior to backfilling, the bottom of the manhole shall be broken up in such a manner that water will readily pass through. The top portion of the manhole structure shall be removed in order to establish a minimum of 3 feet cover from subgrade or finished grade when not under the pavement and filled with sand or suitable backfill.
4. Water mains shall be flushed prior to placement of flowable fill. Use concrete or grout pumps capable of continuous delivery at planned placement rate with sufficient pressure to overcome friction and fill the sewer main.

### J. Relocating, Adjusting, and Removing

1. Fire Hydrant Assemblies
  - a. Relocate, adjust to grade, or remove fire hydrant assemblies including valve and valve boxes according to the Plans or as designated by the Utility Owner and GDOT Project Manager.
  - b. Protect items during removal and relocation. Replace lost or damaged Items at no expense to GDOT or the Utility Owner.
  - c. Disconnect each joint before removing items from the trench.
  - d. Install relocated fire hydrant assemblies with tapping sleeve, and as specified herein for new fire hydrant assemblies.
  - e. Test for leakage, adjust, and retest until no leaks appear.
  - f. Backfill as specified in [Subsection 670.3.05](#).
  - g. Consider valve boxes part of the valve assembly and remove them intact with the valve.
2. Water Valves and Boxes
  - a. Adjust or remove water valves and valve boxes according to the Plans or as designated by the Utility Owner and GDOT Project Manager.
  - b. Protect items during adjustment or removal. Replace lost or damaged Items at no expense to GDOT or the Utility Owner.
  - c. Disconnect each joint before removing items from the trench.
  - d. Test for leakage, adjust, and retest until no leaks appear.
  - e. Backfill as specified in [Subsection 670.3.05](#).
  - f. Consider valve boxes part of the valve assembly and remove them intact with the valve.
3. Existing Water Meters and Boxes
  - a. Relocate existing water meters and boxes according to the Plans or the Utility Owner and GDOT Project Manager.
  - b. To relocate water meters, remove the existing meter, associated backflow preventer, and box and replace with a short section of pipe.
  - c. Inspect along with the Utility Owner and GDOT Project Manager each meter and backflow preventer before removal to determine the condition of each.

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- d. Relocation of water meters and boxes shall include without additional compensation, required pipe, unions and appurtenances, adapter fittings, necessary storage protection, and installation of meter, backflow preventer, meter box, and curb stop in the existing service line.
4. Existing Water Service Lines
  - a. Water lines shall be adjusted to grade by excavating the existing lines, lowering or raising the lines, and backfilling according to the Plans or the Utility Owner and GDOT Project Manager.
  - b. Furnish new materials or fittings required for the adjustment without additional compensation.
  - c. Change connections at the main that result from this work.
  - d. Repair leaks and damage caused by the operations at no expense to GDOT.
  - e. When retaining a water meter where an existing service line is to be adjusted, adjust the existing meter and box to the proper grade without additional compensation.
5. Other Water Appurtenances
  - a. Relocate, adjust to grade, or remove water main appurtenances including but not limited to air release valves, backflow preventers, pressure reducing/sustaining valves according to the Plans or as designated by the Utility Owner and GDOT Project Manager.
6. Utility related items identified on the Plans to be salvaged are the property of the Utility Owner. Contractor shall coordinate with Utility Owner on delivery of salvaged materials. Should the Utility Owner choose to not accept these materials they shall be removed from the project site as soon as practical.

### **K. Aerial Crossings**

1. Support must be provided for all joints in pipes utilized for aerial crossings. The supports must be installed to prevent frost heave, overturning, and settlement. Precautions against freezing, such as insulation, shall be provided.
2. When the aerial crossing is accomplished by attachment to a bridge or drainage structure, the crossing shall meet all requirements of the agencies that own or have jurisdiction over such structures.
3. Aerial installations shall be installed to avoid or minimize stream blockage during normal high-water events.
4. Underground valves shall be provided at both ends of the aerial crossing so that the section can be isolated for testing or repair. The valves shall be restrained, easily accessible, and not subject to flooding. An air release/vacuum relief valve shall be installed at all high points along the aerial crossing.
5. Appropriate guards shall be installed at both ends of the aerial crossing to prevent public access to the pipe.

### **670.3.06 Quality Acceptance**

#### **A. Materials Certification**

For certain products, assemblies and materials, not on GDOT QPL List, and in lieu of normal sampling and testing procedures by the Contractor, the Utility Owner, and GDOT may accept from the Contractor the manufacturer's certification with respect to the product involved under the conditions set forth in the following paragraphs:

1. Material certifications shall be provided to GDOT, who shall distribute to the Utility Owner. Material certifications shall be approved by GDOT and the Utility Owner prior to construction. The certification shall state/specify that the named product conforms to these specifications and requirements of the Utility Owner and GDOT, and representative samples thereof have been sampled and tested as specified.
2. The certification shall either:
  - a. Be accompanied by a certified copy of the test results, or
  - b. Certify such test results are on file with the manufacturer and will be furnished to the Utility Owner and GDOT Project Coordinators upon demand.

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3. The certification shall state/specify the name and address of the manufacturer and the testing agency and the date of tests; and sets forth the means of identification which shall permit field determination of the product delivered to the project as being the product covered by the certification.
4. Submit certification in triplicate with two copies of the covered product to the GDOT Project Coordinator, and one copy sent to GDOT's State Materials and Research Engineer at 15 Kennedy Drive, Forest Park, Georgia. The certification shall specify the project number and contract ID number. No certificate shall be required for Portland cement when furnished from a manufacturer approved by GDOT.
5. GDOT or the Utility Owner will not be responsible for any costs of certification or for any costs of the sampling and testing of products in connection therewith.
6. GDOT and the Utility Owner reserve the right to require samples and test products for compliance with pertinent requirements irrespective of prior certification of the products by the manufacturer. Any materials that fail to meet specification requirements will be rejected.
7. In accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron (at least 90% steel or iron content) furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.
  - a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, guardrail steel supports for signs, signals and luminaires, and cable wire/strand. Products of iron include, but are not limited to, such products as cast-iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.
  - b. Records to be provided by the Contractor for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.
  - c. The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or \$2,500.00, whichever is greater.

### **B. Flushing**

1. Prior to testing, water mains shall be cleaned and flushed to remove all sand and foreign matter. Water used for filling and cleaning shall be from an approved potable water source. Sufficient flushing water shall be introduced into the mains to produce a scouring velocity of not less than 3.5 feet per second to resuspend the solids, and this rate of flow shall be continued until the discharge is clear and no evidence of silt or foreign matter is visible. The Contractor shall dispose of all water used for flushing without causing a nuisance or property damage.
2. In the event that the Contractor cannot obtain the flushing velocity, a poly-pig swab may be used to clean the pipeline. The Contractor shall submit pigging plan to the Utility Owner and GDOT for review. The plan shall include type of pig material, water flow rate, discharge points, poly-pig detector and retrieval options.

### **C. Hydrostatic Testing of Water Mains**

1. When the Utility Owner and GDOT Project Manager approve a section of pipe for testing, the Contractor shall furnish the materials, equipment, and labor to conduct the pressure and leakage tests. Use a test



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pump, pressure gauge, and a means of measuring the water necessary to maintain the required pressure during the prescribed testing time. All pressure and leakage testing shall be done in the presence of the Utility Owner and GDOT Project Coordinators as a condition precedent to the approval and acceptance of the system. All pipes shall have been thoroughly flushed prior to testing. Simultaneous or separate pressure and leakage tests may be performed.

2. All water for testing and flushing shall be potable water provided by the Contractor, at no cost to the Utility Owner or GDOT, from an approved source. Flow velocity during line filling shall not exceed 2 feet (0.6 m) per second (fps).
3. Testing Requirements
  - a. Water mains shall be tested in sections between valves, thereby, testing each valve for secure closure. Testing shall be done immediately after installation and backfilling has been completed.
  - b. The mains shall be tested in accordance with the latest revision of AWWA C600 for ductile iron and C605 for PVC under an average hydrostatic pressure of the greater of 1.5 times the maximum working pressure or 150 psi as measured at the lowest point in the system for a minimum of 2 hours. Pressure shall be maintained until all sections under testing have been checked for evidence of leakage.
  - c. While the system is being filled with water, air shall be carefully and completely exhausted. If permanent air vents are not located at all high points, the Contractor shall install corporation stops or fittings and valves at such points at no additional expense to the Utility, so the air can be expelled as the pipe system is slowly filled.
  - d. Makeup water shall be added, as required, to maintain the pressure within 5 psi of the test pressure. The quantity used shall be measured by pumping from a calibrated container. The maximum amount of makeup water allowed shall be determined by the following formula:
$$L = \frac{SD P^{0.5}}{148,000}$$
in which,  
L = Allowable Leakage in gallons per hour  
S = Length of pipe being tested in feet  
D = Nominal pipe diameter in inches  
P = Average test pressure during the test in psi gauge
  - e. Visible leaks shall be corrected regardless of total leakage shown by test. All pipe fittings and other materials found to be defective under test shall be removed and replaced. Lines which fail to meet test requirements shall be repaired and retested as necessary until test requirements are met. No additional compensation shall be made for repairs or retesting.

### 670.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

### 670.4 Measurement

Incidentals including excavation, rock removal, backfilling, disinfection, testing, temporary water connections, pavement removal, pavement replacement, and other incidentals required for the installation of water distribution items are not measured for separate payment and shall be included in the applicable Pay Items below. Water mains, service lines, and other associated Items of work in this Specification, complete, in place, and accepted, are measured for payment as follows:

#### A. Ductile Iron Water Mains

Ductile iron water mains shall be measured in linear feet (meters) for each size, thickness class, and type (restrained, non-restrained) installed. Measurement shall be horizontally above the centerline of the pipe and shall include the length of valves and fittings.

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### **B. PVC Water Main**

PVC water mains shall be measured in linear feet (meters) for each size and type (restrained, non-restrained) installed. Measurement shall be horizontally above the centerline of the pipe and shall include the length of valves and fittings.

### **C. Fusible PVC Water Main**

Fusible PVC water mains shall be measured in linear feet (meters) for each size and type installed. Measurement shall be horizontally above the centerline of the pipe and shall include the length of valves and fittings.

### **D. HDPE Water Main**

HDPE water mains shall be measured in linear feet (meters) for each size and type installed. Measurement shall be horizontally above the centerline of the pipe and shall include the length of valves and fittings.

### **E. Ductile Iron Fittings**

Ductile iron fittings are considered subsidiary to the water line in which they are used and are not measured for separate payment. This Item includes, but is not limited to, wyes, tees, bends, crosses, sleeves, plugs and caps, and reducers.

### **F. Restrained Joints**

Joint restraints used with the installation of PVC or ductile iron pipe shall be considered incidental to the pipe installation and are not measured for separate payment.

### **G. Gate Valves**

Gate valves shall be measured on an individual basis for each size valve and box assembly acceptably installed.

### **H. Butterfly Valves**

Butterfly valves shall be measured on an individual basis on the number of each size valve and box assembly acceptably installed.

### **I. Tapping Sleeve and Valve Assembly**

Tapping sleeve and valve assemblies shall be measured on an individual basis on the number of each size tapping sleeve and valve assembly acceptably installed.

### **J. Fire Hydrant Assemblies**

Fire hydrant assemblies shall be measured on an individual basis on the number of hydrants acceptably installed.

### **K. Water Service Lines**

Service lines shall be measured in linear feet (meters) for each size of service pipe installed. Measurements are made from end to end and from center of lines to ends of branches and include tapping saddle, sleeve, valves, service connection assemblies, sleeves, adapters, and fittings.

### **L. Air Release Valve Assembly**

Air release valve assemblies shall be measured on an individual basis on the number of each size and type of air release valve assembly acceptably installed.

### **M. Blow-Off Assemblies**

Blow-off assemblies shall be measured on an individual basis on the number of each blow-off assembly acceptably installed.

### **N. Backflow Prevention Device**

Backflow prevention devices shall be measured on an individual basis on the number of each size and type backflow preventer acceptably installed.

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### **O. Water Meter**

Water meters shall be measured on an individual basis on the number of each size meter acceptably installed.

### **P. Steel Casing**

Steel casing pipe of the wall thickness and diameter specified shall be measured by the linear foot for each size and thickness of steel casing pipe installed. Measurement shall be horizontally above the centerline of the casing.

### **Q. Relocation of Existing Fire Hydrant Assemblies, Air Release Valves, Water Meters, Backflow Preventers, and Pressure Reducing or Sustaining Valves**

Relocation of existing fire hydrant assemblies, air release valves, water meters, backflow preventers, and pressure reducing or sustaining valves shall be measured on an individual basis on the number of each acceptably relocated including relocation and final adjustment of boxes.

### **R. Adjustment of Existing Meter Boxes and Valve Boxes to Grade**

Adjustment of existing meter boxes and valve boxes adjusted to grade in their original locations shall be measured on an individual basis on the number of each acceptably adjusted in accordance with Section 611.

### **S. Adjustment of Existing Backflow Preventers**

Adjustment of existing backflow preventers to grade in their original locations shall be measured on an individual basis on the number of each acceptably adjusted in accordance with Section 611.

### **T. Removal of Water Meters, Fire Hydrant Assemblies, and Backflow Preventers**

Removal of existing water meters and boxes, fire hydrants assemblies, and backflow preventers shall be measured on an individual basis on the number of each removed.

### **U. Adjustment of Water Service Lines**

Adjustment of water service lines shall be measured in linear feet (meters) of service line pipe lowered or raised, and shall include the length of valves, fittings, meters, boxes, and other appurtenances. Measurements are made from end to end of actual adjustments.

### **V. Concrete Thrust Blocks**

Concrete thrust blocking installed shall be measured as indicated in Section 500 per cubic yard of concrete acceptably installed. When Concrete Thrust Blocks is not shown as a pay item, include the cost of the work in the bid price for the appropriate item.

### **W. Concrete Thrust Collars**

Concrete thrust collars shall be measured on an individual basis on the number of each size thrust collar acceptably installed. When Concrete Thrust Collars is not shown as a pay item, include the cost of the work in the bid price for the appropriate item

### **X. Cut and Cap Water Main**

Cutting and capping of water mains shall be measured on an individual basis per each instance of cutting and plugging existing mains as shown on the Plans.

### **Y. Removal of Water Mains**

Removal of water mains shall be measured per linear foot for each size pipe actually removed in accordance with Section 610. Measurement shall be horizontally above the centerline of the pipe removed and shall include the length of valves and fittings.

### **Z. Line Stop**

Line stops shall be measured on an individual basis on the number of each size line stop actually installed.

### **AA. Flowable Fill**

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Flowable fill shall be measured as indicted in Section 600 per cubic yard of flowable fill acceptably installed. When flowable fill is not shown as a pay item, include the cost of the work in the bid price for the appropriate item.

### **BB. Insertion Valve**

Insertion valves shall be measured on an individual basis on the number of each size valve acceptably installed.

### **CC. Three-Dimensional (3D) Survey**

Three-dimensional survey shall be measured as one lump sum for a complete and accepted survey. This item will be included in the overall pipe measurement. No separate payment for this work.

#### **670.4.01 Limits**

General Provisions 101 through 150.

#### **670.5 Payment**

The Contract Unit Price for each Item, complete and accepted, shall include all costs incidental to the construction of the Item according to the Plans and as specified in this Section. The unit prices bid shall include due allowance for the salvage value of all materials removed from existing or temporary lines and not installed in the completed work. All such surplus items shall become the property of the Contractor unless such surplus items are specified to be salvaged. Payment for any Item listed below is full compensation for the Item or Items complete in place.

#### **A. Ductile Iron Water Mains**

Ductile iron mains shall be paid for at the unit price per linear foot for each diameter pipe installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of pipe, joints and jointing materials, anchoring, warning tape, polyethylene encasement, protection of existing utilities, connections to existing water mains, sampling taps, temporary blow-offs, flushing, cleaning, pigging, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration and all work and materials necessary to place the pipe into service.

#### **B. PVC Water Main**

PVC water mains shall be paid for at the unit price per linear foot for each diameter pipe installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of pipe, anchoring, tracer wire, warning tape, protection of existing utilities, connections to existing water mains, sampling taps, temporary blow-offs, flushing, cleaning, pigging, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the pipe into service.

#### **C. Fusible PVC Water Main**

Fusible PVC water mains shall be paid for at the unit price per linear foot for each diameter pipe installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, entry/exit pits, installation of pipe, joints and jointing materials, tracer wire, warning tape, mechanical joint adapters, protection of existing utilities, connections to existing water mains, fusion process materials and equipment, directional drilling materials and equipment, tracking system, assembling, welding, supporting, stringing, pulling, pigging, cleaning, sampling taps, temporary blow-offs, flushing, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, and restoration, and all incidentals necessary to place the pipe into service except where such items are shown to be paid for under a separate Pay Item.

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### D. HDPE Water Main

HDPE water mains shall be paid for at the unit price per linear foot for each diameter pipe installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, entry/exit pits, installation of pipe, tracer wire, warning tape, mechanical joint adapters, protection of existing utilities, connections to existing water mains, fusion process materials and equipment, directional drilling materials and equipment, tracking system, assembling, welding, supporting, stringing, pulling, pigging, cleaning, sampling taps, temporary blow-offs, flushing, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, and restoration, and all incidentals necessary to place the pipe into service except where such items are shown to be paid for under a separate Pay Item.

### E. Ductile Iron Fittings

Ductile iron fittings are considered subsidiary to the water line in which they are used and are not measured for separate payment as outlined in the manufacturers' catalogues and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of fittings, joints and jointing materials, anchoring, warning tape, polyethylene encasement, protection of existing utilities, flushing, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, all other related and necessary materials, work and equipment required to install a complete and operable pipeline fitting. This Item includes, but is not limited to, wyes, tees, bends, crosses, sleeves, plugs and caps, couplings, and reducers.

### F. Restrained Joints

Restrained joints are considered incidental to the pipe installation and are not measured for separate payment and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting, shoring, installation of the restraint device, polyethylene encasement, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the restrained joint.

### G. Gate Valves

Gate valves shall be paid for at the unit price per each size gate valve and box assembly installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the gate valves (including valve box), concrete pad or collar, valve identification disc, valve marker, valve tag, polyethylene encasement, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the gate valve and place it in service.

### H. Butterfly Valves

Butterfly valves shall be paid for at the unit price per each size butterfly valve and box assembly installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the butterfly valves including valve box, concrete pad or collar, valve identification disc, valve marker, valve tag, polyethylene encasement, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration and all work and materials necessary to install the butterfly valve and place it in service.

### I. Tapping Sleeve and Valve Assembly

Tapping sleeve and valves assemblies shall be paid for at the unit price per each size tapping sleeve and valve assembly installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of tapping sleeves and valve assemblies including valve box, concrete pad

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or collar, valve marker, valve tag, polyethylene encasement, protection of existing utilities, tapping the potable water main, chlorine for disinfection, disinfection, sampling points, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and necessary hardware to install the tapping sleeve assembly and valve and place it in service.

### **J. Fire Hydrant Assembly**

Fire hydrant assemblies shall be paid for at the unit price per each hydrant installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the fire hydrant assemblies (all configurations), vertical extensions, tapping sleeve, valve, hydrant lead piping, joint connections, fittings, tees, restraints, crushed stone drain, polyethylene encasement, protection of existing utilities, valve box, concrete pad or collar, valve identification disc, valve marker, valve tag, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the fire hydrant assembly and place it in service.

### **K. Water Service Line**

Water service lines shall be paid for at the unit price per linear feet (meters) of the size service line installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of water service line, tracer wire, tapping saddle, sleeve, corporation stops, fittings, curb stops, casing pipe, plugging abandoned water service connection, removal of abandoned water service line, protection of existing utilities, locating and connection to existing or new water main, chlorine for disinfection, disinfection, sampling points, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the water service line into service. Water meter and box shall be paid for under a separate Pay Item.

### **L. Water Meter and Box**

Water meters shall be paid for at the unit price per each size water meter installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the meter and box, adjustment to final grade, fittings, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the meter into service except where such items are to be paid for under a separate Pay Item.

### **M. Backflow Preventer**

Back flow prevention devices shall be paid for at the unit price per each type backflow preventer installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the backflow preventer, concrete vault, adjustment to final grade, testing and certification, fittings, tees, restraints, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the meter into service except where such items are to be paid for under a separate Pay Item.

### **N. Air Release Valve Assembly**

Air release valve assemblies shall be paid for at the unit price per each size and type of air release valve assembly installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the air release assembly, tapping saddle, isolation valve, reducers, piping, restraints, fittings, tracer wire, concrete manhole or vault, ring and cover, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the air release assembly into service.

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### **O. Pressure Reducing / Sustaining Valve**

Pressure reducing / sustaining valve shall be paid for at the unit price per each size and type of pressure reducing / sustaining valve installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the pressure reducing / sustaining valve, reducers, piping, restraints, fittings, tracer wire, concrete manhole or vault, ring and cover, tracer wire, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the pressure reducing / sustaining valve into service.

### **P. Blow-Off Assembly**

Blow-off assemblies shall be paid for at the unit price per each blow-off assembly installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the blow-off assembly, valves, valve boxes, concrete pad or collar, piping, restraints, fittings, tracer wire, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to place the blow-off assembly into service.

### **Q. Steel Casing**

Steel casing pipe shall be paid for at the unit price per linear foot according to the diameter and thickness of the steel casing installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, protection of existing utilities, steel casing pipe, skid, steel straps, coatings, casing spacers, end seals, boring and jacking pits, backfilling, backfill materials, disposal of unsuitable backfill material, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the steel casing except where such items are shown to be paid for under a separate Item. The carrier pipe shall be paid from another applicable Pay Item.

### **R. Relocation of Existing Air Release Valve**

Relocation of air release valves shall be paid for at the unit price per each air release valve assembly relocated and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing air release valve assembly, installation at another location, piping, restraints, tracer wire, fittings, adjustment to final grade, polyethylene encasement, protection of existing utilities, chlorine for disinfection, disinfection backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration and all work necessary to locate, remove and relocate the air release valve except where such items are shown to be paid for under a separate Pay Item.

### **S. Relocation of Existing Fire Hydrant Assembly**

Relocation of fire hydrants shall be paid for at the unit price per each hydrant assembly relocated and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing fire hydrant assembly, installation at another location, vertical extensions, hydrant lead piping, joint connections, fittings, tees, restraints, crushed stone drain, polyethylene encasement, valve box, concrete pad or collar, valve identification disc, valve marker, adjustment to final grade, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work necessary to locate, remove and relocate the hydrant.

### **T. Relocation of Existing Backflow Prevention Devices**

Relocation of backflow prevention devices shall be paid for at the unit price per each backflow preventer relocated and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing backflow preventer, installation at another location, adjustment to final grade, testing and certification, fittings, tees, restraints, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing,

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densities, dewatering, trench stabilization, clean-up, restoration, and all work necessary to locate, remove and relocate the backflow prevention device. The service line from the main to the relocated backflow preventer shall be paid for under a separate Pay Item.

### **U. Relocation of Water Meter and Box**

Relocation of existing water meter and boxes shall be paid for at the unit price of each water meter and box relocated and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, removal of existing water meter and box, installation at another location, adjustment to final grade, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to relocate the water meter and box except where such items are shown to be paid for under a separate Item. The new service line from the main to the relocated meter shall be paid for under a separate Pay Item.

### **V. Adjustment of Existing Water Service Line**

Adjustment of existing water service lines shall be paid in accordance with Section 611, for at the unit price per linear foot of service line adjusted and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, adjustment of service line, tracer wire and splices, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to adjust the service line except where such items are shown to be paid for under a separate Pay Item.

### **W. Adjustment of Existing Water Valve Boxes to Grade**

Adjustment of existing valve boxes shall be paid for in accordance with Section 611, at the unit price per each valve box adjusted to final grade and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, valve case and lid, trench adapter and operating nut extensions/reductions, tracer wire and splices, tracer wire riser and threaded plug, concrete pad, valve identification disc, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to adjust the valve box.

### **X. Adjustment of Blow-off Assembly**

Adjustment of existing blow-off assemblies shall be paid for at the unit price per each blow-off adjusted to final grade and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, valve case and lid, trench adapter and operating nut extensions/reductions, tracer wire and splices, tracer wire riser and threaded plug, piping, concrete pad or collar, valve identification disc, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to adjust the blow-off assembly.

### **Y. Adjustment of Existing Water Meter Boxes to Grade**

Adjustment of existing meter boxes shall be paid for at the unit price per each meter box adjusted to finished grade and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, adjustment of water meter box to final grade, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to adjust the water meter box.

### **Z. Adjustment of Backflow Preventer**

Adjustment of existing backflow preventers shall be paid for at the unit price per each backflow preventer adjusted to finished grade and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, adjustment of backflow preventer to final grade, adjustment of backflow preventer vault to final grade, protection of existing utilities, backfilling, backfill material, disposal of



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unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to adjust the water meter box.

### **AA. Adjustment of Existing Fire Hydrant Assembly to Grade**

Adjustment of existing fire hydrants shall be paid for at the unit price per each hydrant adjusted to finished grade and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, adjustment of hydrant, protection of existing utilities, chlorine for disinfection, disinfection, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to adjust the hydrant.

### **BB. Removal of Water Valve and Box**

Removal of water valves shall be paid for at the unit price per each valve removed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing water valve and box, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, storage and delivery of removed valves identified to be salvaged, and all work necessary to remove the valve and box.

### **CC. Removal of Water Meter and Box**

Removal of water meters shall be paid for at the unit price per each meter removed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing water meter and box, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, storage and delivery of removed meters and boxes identified to be salvaged, and all work necessary to remove the meter.

### **DD. Removal of Fire Hydrant Assembly**

Removal of fire hydrant assemblies shall be paid for at the unit price per each hydrant assembly removed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing fire hydrant assembly, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, storage and delivery of removed hydrants identified to be salvaged, and all work necessary to remove the hydrant.

### **EE. Removal of Air Release Valve**

Removal of air release valves shall be paid for at the unit price per each air release valve removed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, removal of air release valve assemblies, piping, concrete manholes or vaults, and fabricated enclosures, backfilling, backfill materials, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, storage and delivery of air release valves identified to be salvaged, and all work necessary to remove the air release valve.

### **FF. Removal of Backflow Prevention Devices**

Removal of backflow prevention devices shall be paid for at the unit price per each backflow preventer removed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheet and shoring, removal of existing backflow preventer and vault, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, storage and delivery of removed backflow preventers identified to be salvaged, and all work necessary to remove the backflow preventers.

### **GG. Concrete Thrust Blocks**

Concrete thrust blocks shall be paid for at the unit price per cubic yard of concrete complete in place as indicated in Section 500 and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, concrete, forming, reinforcement, protection of existing utilities, backfilling, backfill

## **Section 670 – Water Distribution System**

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material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install a complete thrust block. When Concrete Thrust Blocks is not shown as a pay item, include the cost of the work in the bid price for the appropriate item

### **HH. Concrete Thrust Collars**

Concrete thrust collars shall be paid for at the unit price per each size of thrust collar and shall cover the cost of all materials, transportation, labor, equipment, excavation, sheeting and shoring, reinforced concrete thrust collars, retainer glands, reinforcement, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install a complete thrust collar. When Concrete Thrust Collar is not shown as a pay item, include the cost of the work in the bid price for the appropriate item

### **II. Removal of Water Main**

Removal of water mains shall be paid for at the unit price per linear foot of the size of water main to be removed in accordance with Section 610 and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, bypass pumping (as required), restoration, and all work and materials necessary to locate, remove and dispose of the pipe and associated appurtenances. Unless indicated for removal in a separate Pay Item, appurtenances to be removed shall include but not be limited to fittings, isolation valves, air release valves, valve boxes, blow-offs, steel casings, casing spacers, fire hydrant assemblies, water service lines, water meter boxes, thrust blocks, and concrete. All such surplus items shall become the property of the Contractor unless specified to be salvaged by the Utility Owner.

### **JJ. Cut and Plug Existing Water Main**

Cutting and plugging of existing water mains shall be paid for at the unit price per each installation and shall cover all materials, transportation, labor, equipment, excavation, sheeting and shoring, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to cut and plug existing water mains, except where such items are shown to be paid for under a separate Pay Item.

### **KK. Line Stops**

Line stops shall be paid for at the unit price per each size line stop installed and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the line stop assemblies, valves, valve boxes, fittings, restraints, protection of existing utilities, chlorine for disinfection, disinfection, sampling points, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the gate valve and place it in service.

### **LL. Flowable Fill**

Flowable fill shall be paid for at the unit price per cubic yard of flowable fill complete in place as indicated in Section 600 and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, flushing, plugging air release valves and service connections, installation of flowable fill, protection of existing utilities, backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, utility crossings, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the gate valve and place it in service. When flowable fill is not shown as a pay item, include the cost of the work in the bid price for the appropriate item

### **MM. Insertion Valve**

Insertion valves shall be paid for at the unit price per each size valve inserted and shall cover the cost for all materials, transportation, labor, equipment, excavation, sheeting and shoring, installation of the valve, valve boxes, fittings, restraints, concrete pad or collar, valve identification disc, valve marker, polyethylene encasement, protection of existing utilities, chlorine for disinfection, disinfection, sampling points,

## **Section 670 – Water Distribution System**

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backfilling, backfill material, disposal of unsuitable backfill materials, tamping, testing, densities, dewatering, trench stabilization, clean-up, restoration, and all work and materials necessary to install the insertion valve and place it in service.

### **NN. Three-Dimensional (3D) Survey**

Three-dimensional survey cost will be included in the overall pipe measurement and no separate payment for this work will be made, and it shall cover the costs for all non-destructive methods of locating installed utilities and associated electronic deliverables per Utility Owner specifications.

#### **670.5.01 Adjustments**

General Provisions 101 through 150.

APPENDIX TO SPECIAL PROVISIONS 670

CITY OF ATLANTA

DEPARTMENT OF WATERSHED MANAGEMENT

STANDARD SPECIFICATIONS

**15TH STREET ROADWAY EXTENSION WATERLINE  
RELOCATION PROJECT**



ATLANTA, GEORGIA

**Keisha Lance Bottoms**  
Mayor

**Mikita Browning**  
Interim Commissioner  
Department of Watershed Management

**David L. Wilson II**  
Chief Procurement Officer    Department of Procurement

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**15TH STREET ROADWAY EXTENSION WATERLINE RELOCATION PROJECT**

**SPECIAL CONDITIONS**

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# **15TH STREET ROADWAY EXTENSION WATERLINE RELOCATION PROJECT**

## **SPECIAL CONDITIONS**

### **SC-1 PRECONSTRUCTION SURVEY**

Contractor is expressly advised that the protection of buildings, structures, bridges, and related work adjacent and in the vicinity of its operations, wherever they may be, is solely its responsibility. Conditional inspection of buildings, bridges or other structures in the immediate vicinity of any blasting operations shall be performed by and be the responsibility of the Contractor. The inspection corridor shall extend within a 500-foot radius of any proposed blasting operations. The Contractor shall retain an independent consultant, specializing in preconstruction surveys, to conduct the required inspections.

The Contractor shall have the independent consultant, before the Contractor starts blasting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by notes, measurements, photographs, etc., conditions which might be aggravated by blasting or other operations. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the owners or agents of adjacent buildings, structures, facilities, etc., and to the satisfaction of the Engineer. This does not preclude conforming to the requirements of the insurance underwriters. Two copies of surveys, photographs, videos, reports, etc., shall be given to the Engineer.

Prior to the beginning of any excavations the Contractor shall advise the Engineer of all buildings or structures on which it intends to perform work or which performance of the project work will affect. The preconstruction survey will be performed by a firm specializing in performing such surveys. The qualifications and experience of the proposed consultant shall be submitted to the Engineer for approval prior to assignment of the Work.

The Contractor's attention is directed to Section 01320 of the Technical Specifications.

### **SC-2 SAFETY AND HEALTH**

The Contractor shall comply with all applicable health and safety standards and provisions required by the City of Atlanta, Fulton County, State of Georgia, and the Federal Government and its regulatory agencies. The Contractor shall maintain an accurate record of all cases of death, occupational diseases, and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on work under the Contract.

This project involves work in and around operating combined and sanitary sewer systems. In these areas, the potential exists for toxic and/or explosive gases. The Contractor shall exercise caution when entering any confined space. The atmosphere shall be tested for oxygen levels and potential explosive conditions before entry. Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage, which may result from their failure or their improper construction, maintenance, or operation.

Emergency telephone numbers (fire, medical and police) shall be posted at the Contractor's telephone. The location of the Contractor's telephone shall be known to all.

Accidents shall be reported immediately to the Engineer.

All accidents shall be documented, and a full detailed report submitted to the Engineer after each accident.

### **SC-3 LAYOUT OF THE WORK AND SURVEYS**

The Engineer will establish an initial base line and bench mark. The Contractor shall employ, at his own expense, a Surveyor registered in the State of Georgia who shall stake out the various structures and other parts of the work, establish levels, and erect permanent batter boards. From time to time, the above-mentioned surveyor shall verify by instrument all reference marks, and the Contractor shall be responsible for the accuracy of all line and levels and of the work as built in accordance therewith.

The Contractor shall exercise proper care and caution to verify the grades and figures given him before proceeding with the work, and shall be responsible for any errors, damage, or defective work caused by his failure to exercise such care and caution. He shall promptly notify the Engineer of any errors or discrepancies he may discover in order that the proper corrections may be made.

Engineer may check line and grade at such times as he determines such checks are necessary to verify conformance of the Contractor's work. Such a check shall not be considered as approval of the Contractor's work and shall not relieve the Contractor of responsibility for accurate construction of the entire work. The Contractor shall furnish the services of a person to help the Engineer in checking lines and grades. All stakes or marks required to establish the line and grades required for the completion of the Work shall be the responsibility of the Contractor.

### **SC-4 DETECTION OF MOVEMENT**

In order to detect any movement of buildings or structures that may be affected by his work, Contractor shall, prior to excavation, establish a system of vertical and horizontal control points on or about such buildings or structures, tied to bench marks and indices sufficiently remote to not be moved by his operations. A plan of this system shall be submitted to the Engineer for review. Readings shall be taken of these points and permanently recorded prior to the start of excavation. The Owner will not assume any responsibility for alleged damages to any building or structure arising from the work performed under this Contract.

### **SC-5 EXISTING UTILITIES**

#### **SC-5.1 Verification of the Location of the Existing Utilities**

Representations of existing utilities, facilities, and structures in the Contract Documents are based upon the best available information. The Owner and the Designer will not be responsible for the completeness or accuracy thereof nor for any deductions, interpretations, or conclusions drawn therefrom. The Contractor shall verify to his own satisfaction by test pit or other means, the actual location of existing utilities prior to construction in their vicinity.

Should the Contractor in the course of his operations encounter any underground utilities the presence of which was not previously known, or a different type than shown, he shall immediately notify the Engineer and take all necessary precautions to protect the utility and maintain continuance of service until said utilities can be adjusted by the appropriate owners.



Contractor will notify all public utility corporations, jurisdictional agencies, or other owners to make all necessary adjustments to public utility fixtures and appurtenances within or adjacent to the limits of construction. Delays and additional cost resulting from a failure of the Contractor to notify the utility or to provide adequate notice to the utility shall be at no additional cost to the Owner and in such case, no extension of time will be granted for delays caused by utility adjustments.

Damage caused to utilities either directly or indirectly by the Contractor shall be repaired and the facilities restored to their original condition to the satisfaction of the Engineer and the utility owner, at no additional cost to the Owner.

#### SC-5.2 Work in Vicinity of Existing Utilities

At least three (3) working days prior to starting work in the vicinity of utility structures and appurtenances, Contractor shall notify Engineer and appropriate utility companies and jurisdictional agencies. Contractor shall support and protect all utility structures and appurtenances in accordance with the requirements of the Contract Documents and the utility companies, and shall take any other steps necessary to protect the structures from disturbance or damage.

#### SC-5.3 Access to Utilities Facilities

The Contractor shall at all times permit free and clear access to the various affected facilities by personnel of the utility owners or operators who are working within the limits of work for the purpose of inspection, maintenance, or providing additional service requirements, and the construction of new facilities. When personnel of the utility owners or operators are working within the limits of work to be performed by Contractor, the Contractor will not be relieved of his responsibility for the maintenance and protection of such facilities.

### **SC-6 WORK IN FLOOD PLAIN AREAS**

The Contractor shall comply with all regulations in the Fulton County Zoning Resolution, Article IV, Paragraph 4.24 Flood Plain Management.

### **SC-7 RIGHT TO OPERATE**

As soon as any portion of the Work is completed, accepted by the Engineer and is ready for use, the Owner shall have the right to operate such portion upon written notice to the Contractor by the Owner. The Owner shall also issue a certificate of completion for that portion of the work. Guarantee period on that portion of work will begin upon issuance of certificate of completion for that portion.

Testing of equipment and appurtenance and training of Owner's personnel as specified shall not constitute operation.

The execution of the bonds shall constitute the consent of the surety.

The Contractor shall provide an endorsement to his insurance permitting occupancy of the structures and use of equipment during the remaining period of construction.

### **SC-8 CONCRETE POUR CARD**

An approved concrete pour card must be obtained by the Contractor prior to the placement of concrete. The card shall be as provided to the Contractor by the Engineer. The pour card shall be completed by the Contractor and approved by the Engineer before concrete is placed.

**SC-9 TIE-INS OR MODIFICATIONS TO EXISTING SYSTEMS**

Anytime the Contractor ties into or modifies an existing system, a detailed work plan shall be required. Submittal of this work plan must be a minimum of 30 days in advance of commencement of the subject work. This work plan shall include a detailed description of the work, a step-by-step plan of the modification or tie-in, a schedule, a detailed list of materials and equipment required, demonstrated communications capacity, and a listing of any gates or valves, which must be operated. Working drawings shall be submitted for any permanent or temporary structural modifications. A temporary safety plan covering the period of the work, and a listing of contingency plans and supplies, including but not limited to spill prevention planning and spill containment kits, shall be required.

A coordination meeting with the Owner, the Contractor, the Engineer and the Designer must be held at least seven (7) days prior to the commencement of the modification or tie-in. The day before the commencement of the modification or tie-in, a final coordination shall be held giving final detailed work assignments to all parties involved.

The Owner and the Engineer have the right to require, at no additional cost to the Owner, stand-by equipment on any item(s) deemed critical enough to delay the work. The Contractor shall have available stand-by personnel to supplement the committed forces should problems arise. The Contractor is responsible for meeting all OSHA standards including entrance and exit safety, confined space entry, fall protection, scaffolding, rigging, etc.

**+ + + END OF SPECIAL CONDITIONS + + +**

**PIPELINE CONTRACTOR'S MINIMUM QUALIFICATIONS FORMS**

**15TH STREET ROADWAY EXTENSION WATERLINE  
RELOCATION PROJECT**

GEORGIA UTILITY CONTRACTOR'S

**LICENSE CERTIFICATION**

Contractor's Name: \_\_\_\_\_

Utility Contractor's License Number: \_\_\_\_\_

Expiration Date of License: \_\_\_\_\_

**STATEMENT OF PIPELINE CONTRACTOR'S MINIMUM QUALIFICATIONS**

This Statement is to accompany bids submitted for this project. **Pipeline contractor must meet the minimum qualification criteria set forth under items 5, 7, 8, 9, 10, 11, and 12 of this section, must provide the organization chart as set forth under item 6 of this section and must complete the project experience forms for qualifying projects to be deemed a "Responsible and Responsive Bidder".**

1. NAME OF BIDDER: \_\_\_\_\_

2. BUSINESS ADDRESS: \_\_\_\_\_

---

3. TELEPHONE NUMBER: \_\_\_\_\_

4. OFFICIAL REPRESENTATIVE AND TITLE: \_\_\_\_\_

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5. Using the forms provided in this Section, list previously completed or current projects which are similar in scope and complexity to this project which were completed or assigned to your firm or joint venture.

a. Pipeline contractor must have successfully managed and completed at least one water distribution system contract in the past five years. The contract must have consisted of the installation of ductile iron water mains at least 8-inches in diameter and 1,000 feet in length, installation of hydrants and service connections and pavement restoration.

b. (Not Used)

6. Provide the following information for the organization proposed for this project:

a. Organizational chart. Organizational chart shall include the names of the following personnel:

- (1) Project Manager
- (2) Project Superintendent
- (3) Project Safety Coordinator
- (4) Public Information Officer
- (5) Traffic Control Manager

b. The above indicated individuals shall not be changed without written approval of the Engineer.

c. Indicate the participation by the various members in the organization, as shown on the organizational chart; in the management; and in the division of work. If a joint venture, indicate percent of project cost to be performed by each joint venture member.

d. Each of the five personnel positions indicated in Paragraph 6 a. above shall be filled by a separate individual.

7. Using the forms provided in this Section, provide information for key project personnel including Project Manager, Project Superintendent, Project Safety Coordinator, Public Information Officer and Traffic Control Manager.
- a. Project Manager must have successfully managed and completed at least one water distribution system contract in the past five years. The contract must have consisted of the installation of ductile iron water mains at least 12-inches in diameter and 1,000 feet in length, installation of hydrants and service connections and pavement restoration.
  - b. Project Superintendent must have successfully managed and completed at least two water distribution system contracts in the past five years. The contract must have consisted of the installation of ductile iron water mains at least 12-inches in diameter and 1,000 feet in length, installation of hydrants and service connections and pavement restoration.
  - c. Project Safety Coordinator, Public Information Officer and Traffic Control Manager must have each worked on at least one project involving installation of water mains and/or sanitary sewers.
  - d. Project Safety Coordinator must also meet the following requirements:
    - (1) Four-year Bachelor's degree and five years of construction loss control or construction safety experience; OR
    - (2) Ten years of construction loss control or construction safety experience, AND
    - (3) Current certifications as listed below in (a), (b), and (c):
      - (a) OSHA 510 or equivalent 30 hours of construction safety training.
        - Trenching and Excavation (Standards – 29 CFR – 1926.651)
        - Confined space Entry (Standards – 29 CFR – 1910.146 App. E), AND
      - (b) Traffic Control/flagging (Certified GDOT flagger), AND
      - (c) First Aid/CPR/AED (Standards – 29 CFR – 1910.266 (App. B))
  - e. Public Information Officer (PIO) must also meet the following requirements:
    - (1) PIO must have had the responsibilities of receiving, logging, tracking, responding and resolving customer/citizen complaints and claims, providing notices to and personal interaction with affected customers/citizens regarding project impact and projected work schedules of the Contractor, reviewing project schedules and “look-ahead” to determine projected areas of impact from the Work.
    - (2) PIO must have a minimum of one year of experience in performing this type of work on similar projects.
8. The Contractor must have an established Safety Program that as a minimum includes those items as listed on the attachment entitled “CONTRACTOR SAFETY RECORD FORM”.

9. The Contractor's Worker's Compensation Rating (EMR - Experience Modification Rate) must not exceed an average of 1.0 over the last three (3) applicable years.

a. Contractor's Worker's Compensation Rating (EMR - Experience Modification Rate): \_\_\_\_\_

10. The Contractor's workplace injury and illness incidence rates must not exceed the rates published by the U.S. Department of Labor, Bureau of Labor Statistics in October 2012. (i.e. Total Recordable Case (TRC) Rate of 3.9 and Days Away from Work (DAFW) Rate of 1.4 per NAICS 23711 definition and calculation).

a. Contractor's Total Recordable Incidence Rate: \_\_\_\_\_

b. Contractor's Days Away From Work Incidence Rate: \_\_\_\_\_

11. If there have been any fatalities during the last five (5) years on any projects performed by the Contractor or on any work performed under the direct supervision of a proposed Project Manager and the Contractor or proposed Project Manager was cited by OSHA for a "Willful" Violation in performing the work in which the fatality occurred, the Contractor will be disqualified based on the City's review. The Contractor may also be disqualified in the event that a Recordable Incident occurred due to the same condition that existed when a previous fatality occurred and resulted in an OSHA citation or failure to implement a corrective action plan.

a. Fatalities during the last five years where Contractor was cited by OSHA for "Willful" Violation: \_\_\_\_\_

b. Fatalities during the last five years where the proposed Project Manager was cited by OSHA for "Willful" Violation: \_\_\_\_\_

12. Have there been any incidents during the last five (5) years on water or sewer projects performed by the Contractor or on any work performed under the direct supervision of a proposed Project Manager that resulted in failing to meet NPDES Discharge Permit requirements due to the actions of the Contractor or proposed Project Manager or Project Superintendent?

Yes \_\_\_\_\_ No \_\_\_\_\_

The previous statements and attachments are true, correct, and complete to the best of my knowledge.

Date: \_\_\_\_\_

Firm Name: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Sworn to and subscribed before me this \_\_\_\_ day of \_\_\_\_\_, 2013

Notary Public County: \_\_\_\_\_  
(Secretary)

My Commission Expires:

\_\_\_\_\_



**STATEMENT OF PIPELINE CONTRACTOR'S QUALIFICATIONS**

**COMPANY PROJECT EXPERIENCE**

Project Name	
Project Location	
Contractor's Project Manager	
Contractor's Project Superintendent	
Owner's Representative: Name and Phone Number	
Design Engineer's Representative: Name and Phone Number	
Water Mains, Size & LF	
Initial Contract Amount	\$
Final Contract Amount	\$
Reason for Cost Increase, if any	
Project Duration	Date Started: Date Completed:
Was Project Completed on Time?	
If not Completed on Time, Why?	
Description of Major Project Components	

**STATEMENT OF PIPELINE CONTRACTOR'S QUALIFICATIONS**

**PROJECT MANAGER'S EXPERIENCE**

**NAME:** \_\_\_\_\_

Project Name	
Project Location	
Contractor	
Contractor's Project Manager	
Owner's Representative: Name and Phone Number	
Design Engineer's Representative: Name and Phone Number	
Water Mains, Size & LF	
Initial Contract Amount	\$
Final Contract Amount	\$
Reason for Cost increase, if any	
Project Duration	Date Started: Date Completed:
Was Project Completed on Time?	
If not Completed on Time, Why?	
Description of Major Project Components	

**STATEMENT OF PIPELINE CONTRACTOR'S QUALIFICATIONS**

**PROJECT SUPERINTENDENT'S EXPERIENCE**

**NAME:** \_\_\_\_\_

Project Name	
Project Location	
Contractor	
Contractor's Project Manager	
Owner's Representative: Name and Phone Number	
Design Engineer Representative: Name and Phone Number	
Water Mains, Size & LF	
Initial Contract Amount	\$
Final Contract Amount	\$
Reason for Cost Increase, if any	
Project Duration	Date Started: Date Completed:
Was Project Completed on Time?	
If not Completed on Time, Why?	
Description of Major Project Components	

**STATEMENT OF PIPELINE CONTRACTOR'S QUALIFICATIONS**

**SAFETY COORDINATOR'S EXPERIENCE**

**NAME:** \_\_\_\_\_

Project Name	
Project Location	
Contractor	
Contractor's Project Manager	
Owner's Representative: Name and Phone Number	
Design Engineer's Representative: Name and Phone Number	
Water Main/Sewer, Size & LF	
Initial Contract Amount	\$
Final Contract Amount	\$
Project Duration	Date Started: Date Completed:
Description of Project Safety Activities	

Submit Resume

**STATEMENT OF PIPELINE CONTRACTOR'S QUALIFICATIONS**

**PUBLIC INFORMATION OFFICER'S EXPERIENCE**

**NAME: \_\_\_\_\_**

Project Name	
Project Location	
Contractor	
Contractor's Project Manager	
Owner's Representative: Name and Phone Number	
Design Engineer's Representative: Name and Phone Number	
Water Main/Sewer, Size & LF	
Initial Contract Amount	\$
Final Contract Amount	\$
Project Duration	Date Started: Date Completed:
Description of Project Public Information Activities	

**STATEMENT OF PIPELINE CONTRACTOR'S QUALIFICATIONS**

**TRAFFIC CONTROL MANAGER'S EXPERIENCE**

**NAME:** \_\_\_\_\_

Project Name	
Project Location	
Contractor	
Contractor's Project Manager	
Owner's Representative: Name and Phone Number	
Design Engineer's Representative: Name and Phone Number	
Water Mains/Sewer, Size & LF	
Initial Contract Amount	\$
Final Contract Amount	\$
Project Duration	Date Started: Date Completed:
Description of Project Traffic Control Activities	

## Contractor Safety Record Form

(Complete Form Only For Projects That Meet Minimum Criteria)

### Safety Program Information

A. Do you have a written safety program?

Yes  (If yes, attach outline)                      No

B. Which of the following does your safety program contain:

1. Health and safety training of its subcontractors?

Yes                       No

2. Documentation of health and safety training required?

Yes                       No

3. Hazard Communication Program (29 CFR 1910.1200, CCR Title 8 Section 5194)?

Yes                       No

4. Confined Space Entry and Rescue Program (29 CFR 1910.146, CCR Title 8 Section 5156-5159)?

Yes  (If yes, attach explanation)                      No

5. "Hot Work" permit program (29 CFR 1910.146, CCR Title 8 5156-5159)?

Yes  (If yes, attach explanation)                      No

6. "Lock-Out/Tag-Out" program (29 CFR 1910.417)?

Yes                       No  (If yes, attach explanation)

C. Equipment Maintenance Program for the following:

1. Miscellaneous construction tools and equipment                      Yes                       No

2. Ladders                      Yes                       No

3. Scaffolds                      Yes                       No

4. Heavy Equipment                      Yes                       No

5. Vehicles                      Yes                       No

D. Do you have a new employee safety orientation program?

Yes  No

1. If yes, does it include instruction in the following:

- (a) Company Safety Policy Yes  No
- (b) Company Safety Rules Yes  No
- (c) Safety Meeting Attendance Yes  No
- (d) Company Safety Record Yes  No
- (e) Hazard Recognition Yes  No
- (f) Hazard Reporting Yes  No
- (g) Injury Reporting Yes  No
- (h) Non-Injury Accident Reporting Yes  No
- (i) Personal Protective Equipment Yes  No
- (j) Respiratory Protection Yes  No
- (k) Fire Protection Yes  No
- (l) Housekeeping Yes  No
- (m) Toxic Substance Yes  No
- (n) Electrical Safety Yes  No
- (o) Fall Protection Yes  No
- (p) First-Aid/CPR Yes  No
- (q) Driving Safety Yes  No
- (r) Hearing Conservation Yes  No
- (s) Lock-Out/Tag-Out Yes  No
- (u) Asbestos Yes  No
- (v) Confined Spaces Yes  No
- (w) Hazard Communication Yes  No

E. Do you conduct safety meetings for your employees? Yes  No

1. If yes, how often:

Daily  Weekly  Bi-weekly  Monthly  As Needed

F. Do you conduct health and safety audits of work in progress?

Yes  No

1. If yes, who conducts the audits?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. How often are the audits conducted?

\_\_\_\_\_  
\_\_\_\_\_



G. Do you notify all employees of accidents and precautions related to accidents and near misses?

Yes  No

1. If yes, how is this notification accomplished?

- |     |  |                              |                             |
|-----|--|------------------------------|-----------------------------|
| (a) | Safety meetings  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (b) | Post notification in office                                  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (c) | Post notification at the site where<br>the incident occurred | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (d) | Other _____  |                              |                             |

H. Is safety a criterion in evaluating the performance of:

- |                |                              |                             |
|----------------|------------------------------|-----------------------------|
| 1. Employees   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 2. Supervisors | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3. Management  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

I. Does your firm hold "tailgate" safety meetings? Yes  No

1. If yes, how often:

Daily  Weekly  Bi-weekly  Monthly  As Needed

J. Does your company have a drug and alcohol testing policy?

Yes  No

K. Does your company require that subcontractors participate in a drug surveillance/testing program?

Yes  No

L. Does your company have a method of disseminating safety information?

Yes  No

**TECHNICAL SPECIFICATIONS**

**15TH STREET ROADWAY EXTENSION WATERLINE RELOCATION  
PROJECT**

## **SECTION 01040 COORDINATION**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

- A. Coordinate execution of the Work with subcontractors and the City's Authorized Representative as required to maintain operation of the existing facilities and satisfactory progress of the Work.
- B. The City's Authorized Representative may require a written explanation of the Contractor's plan for accomplishing separate phases of the Work.

### **PART 2 PRODUCTS**

**(NOT USED)**

### **PART 3 EXECUTION**

#### **3.01 CUTTING AND PATCHING**

- A. The Contractor shall leave all chases or openings for the installation of its own or any of its subcontractor's work, or shall cut the same in existing work, and shall see that all sleeves or forms are at the work and properly set in ample time to prevent delays. See that all such chases, openings and sleeves are located accurately and are of proper size and shape and shall consult with the City's Authorized Representative and its subcontractors concerned in reference to this work. In case of its failure to leave or cut all such openings or have all such sleeves provided and set in proper time, the Contractor shall cut them or set them afterwards at its own expense, but in so doing shall confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall structural members be cut without the written consent of the City's Authorized Representative.
- B. Carefully fit around, close up, repair, patch, and point around the work specified herein to the satisfaction of the City's Authorized Representative.
- C. All of this work shall be done by careful workers competent to do such work and with the proper small hand tools. Power tools shall not be used except where, in the opinion of the City's Authorized Representative, the type of tool proposed can be used without damage to any work or structures and without inconvenience or interference with the operation of any facilities. The City's Authorized Representative's concurrence with the type of tools shall not in any way relieve or diminish the responsibility of the Contractor for such damage, inconvenience, or interference resulting from the use of such tools.
- D. Do not cut or alter the work of any subcontractor, except with the written consent of the subcontractor whose work is to be cut or altered, or with the written consent of the City's Authorized Representative. All cutting and patching or repairing made necessary by the negligence, carelessness or incompetence of the Contractor or any of its subcontractors, shall be done by, or at the expense of, the Contractor and shall be the responsibility of the Contractor.

### **3.02 COORDINATION**

- A. The Contractor shall consult with the City's Authorized Representative on a daily basis while performing demolition, excavation, or any other alteration activity. No water or sewer function, utility or structure shall be altered, shut off or removed unless approved in advance, and in writing, by the City's Authorized Representative. The Contractor shall give the City's Authorized Representative at least 2-weeks' advanced notice and look ahead schedules, in writing, of the need to alter, shut off or remove such function. These restrictions apply with the exception of Emergency work orders. Emergency work orders shall be coordinated and executed in the presence and under the direction of the City's Authorized Representative.
- B. Coordinate the Work with the City's Authorized Representative and revise daily activities if needed so as to not adversely affect system operations. Such revisions in the proposed work schedule will be accomplished with no additional compensation to the Contractor.

### **3.03 OWNER'S RESPONSIBILITIES**

- A. All existing water system valves shall be operated or have City Engineer supervise Contractor operating valves.

### **3.04 PROTECTION AND RESTORATION OF WORK AREA**

- A. General: Return all items and all areas disturbed, directly or indirectly by work under these Specifications, to their original condition or better, as quickly as possible after work is completed.
  - 1. The Contractor shall plan, coordinate, and execute the work such that disruption to personal property and business is held to a practical minimum.
  - 2. All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of underground facilities, ditches, and disturbed areas shall be accomplished on a daily basis as work is completed. Finishing, dressing, and grassing shall be accomplished immediately thereafter, as a continuous operation within each area being constructed and with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.
  - 3. Handwork, including raking and smoothing, shall be required to ensure that the removal of roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance.
  - 4. The City's Authorized Representative shall be authorized to stop all work by the Contractor when restoration and cleanup are unsatisfactory and to require appropriate remedial measures.
- B. Man-made Improvements: Protect or remove and replace with the City or City's Representative's approval, all fences, walkways, mail boxes, pipe lines, drain culverts, power and telephone lines and cables, property pins and other improvements that may be encountered in the Work.
- C. Cultivated Growth: Do not disturb cultivated trees or shrubbery unless approved by the City's Authorized Representative. Any such trees or shrubbery which must be removed shall be heeled in and replanted under the direction of an experienced nurseryman.

- D. Cutting of Trees: Do not cut trees for the performance of the work except as absolutely necessary. Protect trees that remain in the vicinity of the work from damage from equipment. Do not store spoil from excavation against the trunks. Remove excavated material stored over the root system of trees within 30 days to allow proper natural watering of the root system. Repair any damaged tree over 3-inches in diameter, not to be removed, under the direction of an experienced nurseryman. All trees and brush that require removal shall be promptly and completely removed from the work area and disposed of by the Contractor. No stumps, wood piles, or trash piles will be permitted on the work site.
- E. Disposal of Rubbish: Dispose of all materials cleared and grubbed during the construction of the Project in accordance with the applicable codes and rules of the appropriate county, state and federal regulatory agencies.
- F. Swamps and Other Wetlands
  - 1. The Contractor shall not construct permanent roadbeds, berms, drainage structures or any other structures which alter the original topographic features within the easement.
  - 2. All temporary construction or alterations to the original topography will incorporate measures to prevent erosion into the surrounding swamp or wetland. All areas within the easement shall be returned to their original topographic condition as soon as possible after work is completed in the area. All materials of construction and other non-native materials shall be disposed by the Contractor.
  - 3. The Contractor shall provide temporary culverts or other drainage structures, as necessary, to permit the free migration of water between portions of a swamp, wetland or stream which may be temporarily divided by construction.
  - 4. The Contractor shall not spread, discharge or dump any fuel oil, gasoline, pesticide, or any other pollutant to adjacent swamps or wetlands.
- G. Refer to Section 02920, Site Restoration

### **3.05 WATER FOR CONSTRUCTION PURPOSES**

- A. All water required for construction shall be furnished by the Owner. It shall be available by connecting to the Owner's water system at a point approved by the City's Authorized Representative. There shall be installed in every connection to the Owner's water supply, and water meter with backflow preventer meeting the requirements of the City. The Contractor is responsible to pay for and install the meter and backflow preventer that will connect to the connection to the Owner's water supply. The costs associated to the connection to the Owner's water supply system shall be incidental and at no additional cost to the Owner. The Contractor shall meter all water usage. The Contractor shall notify the City one week in advance prior to connecting to the water system.
- B. A total of the metered water used shall be submitted to the City's Authorized Representative with each monthly application for payment

### **3.06 EXISTING UTILITIES AND OBSTRUCTIONS**

- A. The Drawings indicate utilities or obstructions that are known to exist according to the best information available. The Contractor shall call the Utilities Protection Center (UPC) at 811

or (800-282-7411) as required by Georgia Law (O.C.G.A. Sections 25-9-1 through 25-9-13) at least 72 hours (three business days) prior to construction to verify the location of the existing utilities.

**B. Water and Sewer Separation**

1. Water mains should maintain a minimum 10-foot edge-to-edge separation from sewer lines, whether gravity or pressure. If the main cannot be installed in the prescribed easement or right-of-way and provide the 10-foot separation, the separation may be reduced, provided the bottom of the water main is a minimum of 18-inches above the top of the sewer. Should neither of these two separation criteria be possible, the water main shall be installed below the sewer with a minimum vertical separation of 18-inches.
  2. The water main, when installed below the sewer, shall be encased in concrete with a minimum 6-inch concrete thickness to the first joint in each direction. Where water mains cross the sewer, the pipe joint adjacent to the pipe crossing the sewer shall be cut to provide maximum separation of the pipe joints from the sewer.
  3. No water main shall pass through, or come in contact with, any part of a sanitary sewer manhole.
- C. Work shall be located as indicated on the Drawings, but the City's Authorized Representative reserves the right to make modifications in locations as may be found desirable to avoid interference with existing structures, utilities or other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve the Contractor for laying and joining different or additional items where required or when directed by the City's Authorized Representative.

**3.07 PIPE DISTRIBUTION**

- A. Pipe shall be distributed and placed in such a manner that will not interfere with traffic.
- B. Distribution and stringing of pipe along the route will be limited to the total length which will be installed in one work day/work shift. The Owner reserves the right to reduce the distance in residential and commercial areas based on the effects of the pipe distribution on the adjacent property owners.
- C. No street or roadway may be closed for unloading of pipe without first obtaining permission from the proper authorities. The Contractor shall furnish and maintain proper warning signs and obstruction lights for the protection of traffic along highways, streets and roadways upon which pipe is distributed.
- D. No distributed pipe shall be placed inside drainage ditches.
- E. Distributed pipe shall be placed as far as possible from the roadway pavement, but no closer than five feet from the roadway pavement, as measured edge-to-edge.

**3.08 CONSTRUCTION OPERATIONS**

- A. Do not open the trench any further ahead of pipe laying operations than is necessary. Backfill and remove excess material immediately behind laying operations. Complete excavation and backfill

for any portion of the trench in the same day.

- B. Construction operations shall be limited to 250 feet along the water main route, including clean-up and utility exploration.
- C. The Contractor shall insure that all work areas and roadways are free from excess excavated material, debris, mud, soil, and rocks etc. at the end of each work day. Contractor shall be responsible for sweeping all areas at the end of each work day.

### **3.09 CONNECTIONS TO WORK BY OTHERS**

- A. As shown on the Drawings, pipelines constructed under this Contract are to be connected to pipelines to be constructed by others.
- B. Pipelines built under this Contract will be connected to pipelines constructed by others by removing the plugs and making the connection.
- C. If the pipelines have not been constructed by others, the pipeline (under this Contract) shall be laid to the required line and grade, terminated with a plugged connection at the location indicated on the Drawings and then backfilled. The connection point shall be located by survey methods for future reference and construction tie-in.

**+++ END OF SECTION 01040 +++**

**SECTION 01055  
CONSTRUCTION STAKING**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. Construction staking shall include all of the surveying work required to layout the Work and control the location of the finished Project. The Contractor shall have the full responsibility for constructing the Project to the correct horizontal and vertical alignment, as shown on the Drawings, as specified, or as ordered by the Engineer.
- B. The Contractor shall assume all costs associated with rectifying work constructed in the wrong location.
- C. Work under this Section also includes surveying work required to prepare Record Drawings as specified herein.

**1.02 QUALITY ASSURANCE**

- A. The Contractor shall hire, at the Contractor's own expense, a Surveyor with current registration in the State of Georgia, acceptable to the Owner, to provide project construction staking and confirmation of the vertical and horizontal alignment.
- B. Any deviations from the Drawings shall be confirmed by the Engineer prior to construction of that portion of the Project.

**1.03 SUBMITTALS**

- A. Submit name and address of Registered Surveyor to Engineer.
- B. On request of Engineer, submit documentation to verify accuracy of construction staking.
- C. Submit record drawings in accordance with PART 3 of the Section.

**PART 2 PRODUCTS**

**(NOT USED)**

**PART 3 EXECUTION**

**3.01 PROJECT CONDITIONS**

- A. The Drawings provide the location of principal components of the Project. The Engineer may order changes to the location of some of the components of the Project or provide clarification to questions regarding the correct alignment.
- B. The Engineer will provide the following:



1. One vertical control point on the Project site with its elevation shown on the Drawings.
2. A minimum of two horizontal control points on the Project site with their coordinates shown on the Drawings.

### **3.02 GENERAL**

- A. From the information shown on the Drawings and the information to be provided as indicated in paragraph 3.01 above, the Contractor shall:
  1. Be responsible for establishing GPS control coordinate control system, setting reference points and/or offsets, establishment of baselines, and all other layout, staking, and all other surveying required for the construction of the Project.
    - a. The horizontal position of all points shall be referenced to the North American datum of 1983 (1986 adjustment) in the Georgia State Plane West 1002 Coordinate System.
    - b. The vertical position of all points shall be referenced to the North American Vertical datum of 1988.
    - c. All coordinate values shall be delivered as grid coordinates in US Survey Feet.
    - d. The minimum data accuracy required for all record drawings shall be +/- 0.10 USFT (one tenth of one foot).
  2. Safeguard all reference points, stakes, grade marks, horizontal and vertical control points, and shall bear the cost of re-establishing same if disturbed.
  3. Stake out the limits of construction to ensure that the Work does not deviate from the indicated limits.
  4. Stake out the pipeline horizontal and vertical alignment.
  5. Be responsible for all damage done to reference points, baselines, center lines and temporary bench marks, and shall be responsible for the cost of re-establishment of reference points, baselines, center lines and temporary bench marks as a result of the operations.
  6. Maintain a complete, accurate log of all control and survey work as it progresses.
- B. Baselines shall be defined as the line to which the location of the Work is referenced, i.e., edge of pavement, road centerline, property line, right-of-way or survey line.

### **3.03 STAKING PRECISION**

- A. The precision of construction staking shall match the precision of components location indicated on the Drawings. Staking of utilities shall be done in accordance with standard accepted practice for the type of utility.
- B. The precision of construction staking required shall be such that the location of the water main or sewer or storm drain can be established for construction and verified by the Engineer. Where the

location of components of the water main or sewer or storm drain, ( i.e. fittings, valves, manholes, road crossings, etc.) are not dimensioned, the establishment of the location of these components shall be based upon scaling these locations from the Drawings with relation to readily identifiable land marks, i.e. survey reference points, power poles, manholes etc.

- C. Paved Surfaces: The Contractor shall establish a reference point for establishing and verifying the paving subgrade and finished grade elevations. Any variance with grades shown on the Drawings shall be identified by the Contractor and confirmed by the Engineer prior to constructing the base.
- D. The Contractor's attention is directed to Section 01040, Paragraph 3.06.

### **3.04 RECORD DRAWINGS**

#### **A. Water Mains**

1. The Contractor shall submit record drawings which show the final installed location of the water main and survey data for all installed pipe, valves and fittings, tunnel and casing limits and service connections 3-inches in diameter and greater. Survey data shall consist of final coordinates for all valves, fittings, tunnel and casing limits and main tap locations for service connections 3-inches in diameter and greater and center line of pipe at points every 500 feet along the length of pipe installed.
2. In addition, the location of all valves and fittings and main tap location for service connections 3-inches in diameter and greater shall be indicated by at least 2 ties (measured distances) from permanent fixed objects within the public right of way, as accepted by the Engineer, to allow the Owner to locate the water main and components in the future without the use of GPS instruments.

#### **B. (Not Used)**

- C. The record drawings shall also indicate the horizontal and vertical location, dimensions and materials of all utilities encountered during excavation.
- D. Record drawings must be georeferenced to the U.S. State Plane Coordinate System, NAD 83 GA West Zone, US Survey Feet. All drawings must contain two reference pins which are labeled and tied to the Fulton County GPS Monument Network.
- E. Two full size hard copies of record drawings shall be furnished to the Engineer for review. Each record drawing shall be stamped with the name of the Contractor, signed and dated by the Contractor's Project Manager and signed, sealed and dated by the Surveyor. Record Drawings, once approved by the Engineer, shall be scanned and saved as PDF's.
- F. The contractor shall provide an electronic copy of the record drawings in AutoCAD Civil 3D 2011 (.DWG) format.
- G. Final submittal of record drawings shall be provided by two compact disks containing the signed and sealed PDF's and DWG files referenced above.

**+++ END OF SECTION 01055 +++**

**SECTION 01200  
MEASUREMENT AND PAYMENT**

**PART 1 – GENERAL**

**1.01 SCOPE**

- A. Work includes furnishing all plant, labor, equipment, tools, materials, and performing all operations required to complete the Work satisfactorily, in-place, as specified and as indicated on the Drawings.
- B. All costs of required items of work and incidentals necessary for the satisfactory completion of the Work shall be considered as included in the Total Bid. The cost of work not directly covered by the pay items shall be considered incidental to the contract and no additional compensation shall be allowed.
- C. The Contractor shall take no advantage of any apparent error or omission on the Drawings or Specifications, and the Engineer shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.

**1.02 SUBMITTALS**

- A. The Contractor shall submit to the Engineer for approval, in the form directed or acceptable to the Engineer, a complete schedule of values of the various portions of the Work, including quantities and unit prices, aggregating the Contract Price. An unbalanced breakdown providing for overpayment to the Contractor on items of Work, which would be performed first, will not be approved.
- B. Submit application for payment on a form approved by the Engineer showing allowances, lump sum schedule of value items, and unit price items in accordance with Section SC-15.

**1.03 UNIT PRICE ITEMS**

- A. Payment for all work shall be in accordance with the unit price bid items in the Bid Schedule and shall be full compensation for all labor, materials, and equipment required to furnish, install, construct, and test the Work covered under the unit price bid item. Work for which there is no price schedule item will be considered incidental to the Work and no additional compensation shall be allowed.
- B. Payment will be made only for the actual quantities of work performed in compliance with the Drawings and Specifications. The Contractor will be paid an amount equal to the approved quantity times applicable unit price. Any unused balance of the unit price work shall revert to the City upon completion of the project.

- C. All unit price work shall be considered as part of the Work to be performed within the time limits specified elsewhere for Substantial Completion and Project Completion. No increase in contract time will be allowed for increases in quantities of unit price work performed beyond the quantities shown in the Bid Schedule, unless it can be demonstrated that the additional Work performed under the unit price item is on the critical path of the Project Schedule.

**1.04 MEASUREMENT OF QUANTITIES**

- A. Final payment quantities shall be determined from the record drawings. The record drawing lengths, dimensions, quantities, etc. shall be determined by a survey after completion of all required work. The precision of final payment quantities shall match the precision shown for that item in the Bid Schedule. Measurements will be taken according to the United States standard measurements and in the manner as specified in these Specifications.
- B. Measurement Devices
  - 1. Scales shall be inspected, tested, and certified by the applicable Weights and Measures Department within the past year and shall be of sufficient size and capacity to accommodate the conveying vehicle.
  - 2. Metering devices shall be inspected, tested, and certified by the applicable department within the past year.
  - 3. Volume shall be determined by cubic dimension by multiplying mean length by mean width by mean height or thickness.
  - 4. Area shall be determined by square dimension by multiplying mean length by mean width or height.
  - 5. Linear measurement shall be measured by linear dimension, along the item centerline or mean chord.
  - 6. Stipulated price measurement shall include items measured by number, weight, volume area, length or combination thereof as appropriate.

<u>Item</u>	<u>Method of Measurement</u>
AC	Acre—Field Measure
AL	Allowance
CY	Cubic Yard—Field Measure within limits specified or shown, or measured in vehicle by volume, as specified
EA	Each—Field Count
GAL	Gallon—Field Measure
HR	Hour
LB	Pound(s)—Weight Measure by Scale
LF	Linear Foot—Field Measure
LS	Lump Sum—Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard
TON	Ton—Weight Measure by Scale (2,000 pounds)

**Item**

**Method of Measurement**

VF

Vertical Foot —Field Measure

**SECTION 1 – UNIT PRICE BID ITEMS**

**1.05 ITEMS 1 THROUGH 57 – DUCTILE IRON WATER DISTRIBUTION PIPE, PUSH ON JOINT**

- A. Measurement for payment of furnishing and installing ductile iron water distribution pipe will be on a linear foot basis as determined by measurement along the centerline of the pipe in-place. Payment will constitute full compensation for all work necessary for installation of ductile iron water distribution pipe, including but not limited to furnishing, transporting, storing, and installing the pipe, ground penetrating radar pipe location along the pipeline route, saw cutting asphalt pavement, excavation, removal and disposal of asphalt or concrete pavements and excavated material, excavation support system, utility support system, dewatering, temporary water service, backfilling and compaction, cleaning, testing, and all other specified work.
- B. Depth of installation is as indicated on the drawing details, or defined in the specifications, or as directed by the Engineer. Excavation is unclassified.

**1.06 ITEMS 58 THROUGH 64 – DUCTILE IRON WATER DISTRIBUTION PIPE, PUSH ON JOINT, ADDITION FOR DEEP BURY, 0-4' DEEPER**

- A. Measurement for payment of Ductile Iron Water Distribution Pipe, Push On Joint (size) Diameter, Addition for Deep Bury, 0-4' Deeper will be on a per linear foot basis. Payment for installing water main pipe at a lower grade than indicated will be based upon the actual depth as instructed by the Engineer, in accordance with the provisions of the contract documents. Payment for water main installed at depths greater than that shown in the drawings will be made in addition to the unit prices in this section. Payment will constitute full compensation for labor, materials, and equipment necessary to install the water distribution pipe at a depth greater than 4 feet.
- B. Depth of installation is as indicated on the drawing details or defined in the specification, or as directed by Engineer. Excavation is unclassified.

**1.07 ITEMS 65 THROUGH 67 – RESTRAINED JOINT DUCTILE IRON FITTINGS**

- A. Measurement for payment to furnish and install ductile iron fittings shall be at the unit price bid per ton for such fittings furnished. Weight shall be based on published weights provided by the fitting manufacturer. Payment for furnishing and installing fittings shall constitute full compensation for all work required to furnish and install the fittings, including but not limited to: providing and installing joint restraint; purchasing, transporting, storing, and delivering to the worksite necessary materials; tools; equipment; labor; excavation; dewatering; backfilling; compaction; site restoration, and cleanup.

**1.08 ITEMS 68 THROUGH 72 – COPPER PIPING**

- A. Measurement for payment to furnish and install copper pipe for water service will be on linear foot basis determined by measurement along the centerline of the pipe in-place. Payment for furnishing and installing copper piping shall constitute full compensation for all work required to furnish and install the pipe, including but not limited to materials, tools, equipment, labor, excavation, dewatering, backfilling, compaction, transporting, storing, and cleanup.
  - B. Depth of installation is as indicated on the drawing details, or defined in the specifications, or as directed by the Engineer. Excavation is unclassified.
- 1.09 ITEMS 73 THROUGH 76 - FURNISH AND INSTALL GATE VALVES (SIZE) WITH BOX AND EXTENSION
- A. Measurement for payment to furnish and install gate valves (size) will be on a per each basis. Payment will be based upon actual quantity, of each valve furnished and installed, in accordance with the requirements of the Contract Documents. Payment will constitute full compensation for all work necessary to install the valves, including, but not limited to, the purchase, delivery to the work site, on-site storage, delivery to the work areas, surface preparation, placement and cleanup, including valve box, extension, and concrete collar, if required.
- 1.10 ITEMS 77 THROUGH 79 - FURNISH AND INSTALL BUTTERFLY VALVES (SIZE) WITH BOX AND EXTENSION
- A. Measurement for payment to furnish and install butterfly valves (size) will be on a per each basis. Payment will be based upon actual quantity, of each valve furnished and installed, in accordance with the requirements of the Contract Documents. Payment will constitute full compensation for all work necessary to install the material, including, but not limited to, the purchase, delivery to the work site, on-site storage, delivery to the work areas, surface preparation, placement and cleanup, including valve box, extension, and concrete collar, if required.
- 1.11 ITEM 80 – FIRE HYDRANT ASSEMBLY
- A. Measurement for payment for furnishing and installing fire hydrant assemblies shall be at the unit price bid per each and shall include but is not limited to transporting, storing, furnishing, and installing. . Payment for furnishing and installing fire hydrant assemblies will be made at the unit price per each and shall constitute full compensation for the construction of fire hydrant assemblies, complete, including fire hydrant, fire hydrant extensions, tee, 4 linear feet of 6” restrained joint ductile iron piping, valves and valve boxes, concrete collars and thrust blocks, gravel pockets and all fittings as shown Details W-1, W-2 and W-3.
- 1.12 ITEM 81 – REMOVE AND SALVAGE FIRE HYDRANT ASSEMBLIES
- A. Measurement for payment to remove and salvage or disposal of existing fire hydrant

assemblies shall be based on the actual quantity at the unit price per each removed. Payment for removing and salvaging or disposal of fire hydrant assemblies shall be at the unit price bid per each and shall constitute full compensation for but not limited to removal of the hydrant assembly, plugging the existing main, transporting the salvaged hydrant assembly to a designated site within the City or disposal as directed by the Engineer and all restoration work. Materials to be salvaged shall be delivered to the City at no additional cost.

1.13 ITEM 82 THROUGH 88 –FURNISH AND INSTALL TAPPING SLEEVE AND VALVE

- A. Measurement for payment to furnish and install tapping sleeves and valves will be based upon actual quantity, each, of tapping sleeves and valves furnished, installed and tested, in accordance with the requirements of the Contract Documents. Payment for furnishing and installing tapping sleeves and valves will be made at the unit price per each and shall constitute full compensation for the complete installation of the tapping sleeve, valve and valve box.

1.14 ITEM 89, 90 - FURNISH AND INSTALL SINGLE WATER SERVICE

- A. Measurement for payment for furnishing and installing water service will be on a per each basis for the actual number of water services installed, in accordance with the requirements of the Contract Documents. Payment for furnishing and installing water services will be made at the unit price, per each, and shall constitute full compensation for the complete installation and testing of the water service from the water main to the meter box at the property line. Water services shall include all excavation and backfill, and fittings from the main to the upstream side of the meter including connection to the meter, all copper piping measured horizontally from the face of the meter box to the centerline of the main, casing measured horizontally, tracer wire, valves, corporation stop, saddle strap, meter stop, and all other fittings or items as required by the Contract Documents to provide a complete water service connection.

1.15 ITEM 91 THROUGH 93 - TRANSFER WATER SERVICE

- A. Measurement for payment for water service transfer will be on a per each basis for the actual number of water services transferred from an existing water main to a new, relocated water main. Payment for water service transfer shall constitute full compensation for the complete transfer of the water service from the main to the meter; the meter shall not be relocated. This item shall include all fittings, piping, and restoration, to transfer the service, including pressure testing and disinfection, including connection to the meter. Work shall be performed by a licensed plumber.

1.16 ITEMS 94 THROUGH 96 - RELOCATION OF EXISTING WATER SERVICE (SIZE THROUGH SIZE)

- A. Measurement for payment for water service relocation is on a per each basis. Payment will constitute full compensation for all work necessary to relocate the service including relocation of the water meter, including, but not limited to, the purchase, delivery to the

work site, on-site storage, delivery to the work areas, surface preparation, placement and cleanup, required for the complete relocation of the water service from the main to the property line. The existing meter shall be reset as directed by the Engineer. This item shall include all fittings, piping, and restoration, to relocate the service, including removal of the existing service, pressure testing and disinfection, including connection to the relocated meter. Work shall be performed by a licensed plumber.

1.17 ITEMS 97 THROUGH 104 – CUT AND PLUG WATER MAIN

- A. Measurement for payment of cutting, plugging and abandonment of existing water mains will be per each. Payment for abandoning existing water mains and installing caps will be made at the unit price per each, and shall constitute full compensation for all labor, materials and supplies required to cut and plug existing water mains.

1.18 ITEM 8 – ROCK EXCAVATION

- A. Measurement for payment for rock excavation shall be on a per cubic yard basis. Payment will constitute full compensation for all work necessary for rock excavation in accordance with the Plans and Specifications, including, but not limited to, labor, materials and equipment.
- B. For pipeline excavation, the volume of rock excavation shall be calculated by multiplying trench width times the horizontal distance along the survey centerline times vertical height of rock excavation.
- C. For all other structures including manholes, maximum width shall be 24 inches beyond each edge of the completed structure. Depth for payment purposes shall be no deeper than 12 inches below the bottom of the manhole or structure.
- D. No payment will be made for rock excavation below the required grade or outside the width pay limits as specified under paragraph Section 02324- Trenching and Trench Backfilling.
- E. Payment shall include the cost of removal and disposal of the rock from the site.
- F. Payment for rock excavation associated with micro-tunneling (items 28 through 34), tunnel construction (item 35) and tunnel access shaft (item 36) shall be considered incidental to the respective work.

1.19 ITEMS 20 THROUGH 27 AND ITEM 188 - JACKING AND BORING

- A. Measurement for payment for Jacking and Boring shall be on a linear foot basis. Payment will constitute full compensation for all work necessary for a complete installation including, but not limited to, labor, materials and supplies, and equipment required for the handling and installation of the casing and carrier pipe, access and receiving shafts, shaft support, shoring and bracing removal, groundwater control, annular space fill, spacers, casing end plugs and other associated materials, and surface settlement monitoring, on-site storage, delivery to the work areas, site preparation, restoration and cleanup.



1.20 ITEM 132 - NOT USED

1.21 ITEMS 133, 134 – TYPE B BASE FOR PERMANENT ASPHALT PAVEMENT REPLACEMENT

- A. Measurement for payment for Type B Base for Permanent Asphalt pavement replacement shall be per square yard, determined by multiplying the longitudinal length of the pavement cut times the specified payment width of the trench pursuant to Standard Detail G-2. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install Type B Base for Permanent Asphalt Pavement Replacement and shall include furnishing, hauling, preparation and placement of Type B base materials and prime coat for permanent asphalt paving. Pavement thickness shall be as shown on the standard details.
- B. Any pavement damaged outside the payment width shall be repaired as specified in Section 02700 and no additional payment will be allowed for such work outside the payment width.

1.22 ITEMS 135 AND 136 – TYPE E TOPPING FOR PERMANENT ASPHALT PAVEMENT

- A. Measurement for payment for Type E Topping for Permanent asphalt pavement replacement shall be per square yard, determined by multiplying the longitudinal length of the pavement to be replaced by the specified payment width. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install Type E Topping for Permanent Asphalt Pavement and shall include furnishing, hauling surface preparation and placement of Type E Topping and tack coat for permanent asphalt paving.
- B. Any installation or removal of temporary asphalt or crushed stone paving required shall be considered incidental to the permanent paving work. Pavement thickness shall be as shown on the standard details.

1.23 ITEMS 137 AND 138 –CONCRETE PAVEMENT REPLACEMENT FOR WATER OR SEWER LINES

- A. Measurement for payment of concrete pavement replacement for water or sewer lines shall be on a square yard basis determined by multiplying the longitudinal length of pavement to be replaced by the specified payment width. Payment will constitute full compensation for all work necessary to install the concrete pavement, including, but not limited to, the purchase, delivery to the work site, surface preparation, placement and cleanup.

1.24 ITEMS 139 THROUGH 141 – CONCRETE CURB AND GUTTER, CONCRETE CURB AND CONCRETE VALLEY GUTTER

- A. Measurement for payment of concrete curb and gutter, concrete curb, or granite curb and concrete valley gutter shall be made on a per linear foot basis.
- B. Payment will constitute full compensation for all work necessary to install the curb and gutter, including, but not limited to, the purchase, delivery to the work site, on-site storage, delivery to the work areas, excavation, backfilling, compaction, placement, disposal of existing materials, all joints, all special construction at driveways and other entrances or points, and cleanup. Payment shall include all approaches through curb and gutter indicated on the Plans.

#### 1.25 ITEM 142 – SPECIALTY BRICK PAVER SIDEWALK REPLACEMENT

- A. Measurement for payment for specialty brick paver sidewalk replacement shall be per square yard. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install specialty brick paver sidewalk and shall include: excavation; backfilling; compaction; disposal of existing materials; all joints; all special construction at driveways or other entrances and points; hauling and placing materials; and incidentals necessary to complete the work. Payment shall include all approaches through curb and gutter indicated on the Plans.

#### 1.26 ITEM 143 –CONCRETE SIDEWALK

- A. Measurement for payment for concrete sidewalk replacement shall be per square yard. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install concrete sidewalk and shall include: excavation; backfilling; compaction; disposal of existing materials; all joints; all special construction at driveways or other entrances and points; hauling and placing materials; and incidentals necessary to complete the work. Payment shall include all approaches through curb and gutter indicated on the Plans.

#### 1.27 ITEM 144 – SPECIALTY STAMPED CONCRETE (PAVER) SIDEWALK

- A. Measurement for payment for specialty stamped concrete (paver) sidewalk shall be per square yard. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install specialty concrete (paver) sidewalk and shall include: excavation; backfilling; compaction; disposal of existing materials; all joints; all special construction at driveways or other entrances and points; hauling and placing materials; and incidentals necessary to complete the work. Payment shall include all approaches through curb and gutter indicated on the Plans.

#### 1.28 ITEM 145 – WHEELCHAIR RAMPS

- A. Measurement for payment for wheelchair ramps shall be per square yard. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install wheelchair ramps including saw cut, removal and disposal of existing concrete, site preparation, hauling and placing materials, joint installation, and cleanup.

#### 1.29 ITEM 146 - NEW GRANITE CURB

- A. Measurement for payment of new granite curb shall be made on a per linear foot basis. Payment will constitute full compensation for all work necessary to install the new granite curb, including, but not limited to, the purchase, delivery to the work site, on-site storage, delivery to the work areas, removal and disposal of the existing granite curb, site preparation, and the installation of new granite curb, placement of joints, and cleanup.

#### 1.30 ITEM 147 - REUSED GRANITE CURB

- A. Measurement for payment of reused granite curb shall be made on a per linear foot basis. Payment will constitute full compensation for all work necessary to install the reused granite curb, including, but not limited to, the removal and storage of existing granite curb, cleaning of the curb, delivery to the work areas, site preparation, reinstallation of existing granite curb, placement of joints and cleanup.

#### 1.31 ITEMS 148 AND 149 – DRIVEWAYS RESIDENTIAL AND COMMERCIAL

- A. Measurement for payment for new concrete driveway, residential and commercial shall be per square yard. Payment will be full compensation for furnishing all labor, materials, tools, and equipment necessary to install driveways including saw cut, removal and disposal of existing concrete driveway sections, forming, delivering to the worksite, placing and finishing concrete for new driveway sections, and clean up.
- B. No extra compensation will be made for provision and maintenance of temporary paving.
- C. No separate measurement and payment will be made for any materials equipment or labor associated with steel plate bridging.
- D. No separate measurement and payment will be made for items associated with temporary patch paving.
- E. No additional payment will be made for saw-cutting of pavement due to pavement thickness or material changes.

#### 1.32 ITEMS 150 AND 151 – PAVEMENT MILLING

- A. Measurement for payment for pavement milling shall be per square yard. Payment will be full compensation for furnishing all labor, tools, and equipment necessary for pavement milling, including, removal and disposal of pavement.
- B. The depth of milling will range from zero (0) inches measured at the roadway centerline to a depth of three (3) inches measured at each edge of pavement. The Engineer shall determine the section(s) of roadway that will require pavement milling.

#### 1.33 ITEMS 152 THROUGH 157 - PAVEMENT MARKINGS

- A. Measurement for payment for furnishing and installing pavement markings will be per linear foot as determined by measurement along the centerline of the pavement markings

in-place, in accordance with the requirements of the Specifications. Removal of temporary pavement markings is considered incidental. Payment will be full compensation for pavement markings, including furnishing all labor, materials, tools, and equipment necessary for the installation of new pavement markings.

- B. Locations and quantities of such existing pavement markings, to be restored, shall be verified with the ENGINEER prior to disturbing the existing pavement markings.

1.34 ITEMS 158 THROUGH 165 – CROSS BARS, SCHOOL ZONE TEXT AND DIRECTIONAL ARROWS

- A. Measurement for payment for cross bars, school zone text and directional arrows shall be per each. Payment shall constitute full compensation for all labor, materials and equipment necessary to complete the work including clean up.

1.35 ITEM 166 – TOPSOIL

- A. Measurement for payment for topsoil shall be per cubic yard. Payment shall constitute full compensation for all labor, materials and equipment necessary to place topsoil, including excavation hauling, placement, and finish grading of all topsoil furnished.
- B. Topsoil will only be paid for when unavailable or in insufficient quantities at the site of the Work as determined by the Engineer.
- C. Payment will be made only for topsoil imported to the site of the Work.
- D. No payment shall be made for topsoil stripped from the site of the Work.

1.36 ITEM 170 - CLASS A-2 REINFORCED CONCRETE, FURNISH AND INSTALL

- A. Measurement for payment of Class A-2 reinforced concrete will be made on a cubic yard basis. Concrete will not be measured and paid for separately when included in another item of work for which payment is based on units of length or area. Payment will constitute full compensation for all work necessary to install the reinforced concrete, including, but not limited to: the purchase, delivery to the work site, on-site storage, and delivery to the work areas of materials, site preparation; placement of formwork, reinforcing steel and concrete and cleanup.

1.37 ITEM 171 - CLASS B UNREINFORCED CONCRETE, FURNISH AND INSTALL

- A. Measurement for payment of Class B unreinforced concrete will be made on a cubic yard basis. Concrete will not be measured and paid for separately when included in another item of work for which payment is based on units of length or area. Payment will constitute full compensation for all work necessary to install the unreinforced concrete, including, but not limited to: the purchase, delivery to the work site, on-site storage, and delivery to

the work areas; site preparation; placement of formwork and concrete; and cleanup.

- B. Payment for concrete encasement of water and sewer lines shall be calculated by multiplying the specified trench width times the longitudinal distance measured along the center line as indicated in the Plans times the depth from twelve (12) inches above the pipe barrel to twelve (12) inches below the pipe barrel.

### **SECTION 3 – ALLOWANCES**

#### **1.38 ALLOWANCES**

- A. The allowances specified in the Bid Schedule are to establish a fund to pay the cost of items for which the City could not establish accurate quantities and/or detailed scope of work. This work shall be completed only at the written direction of the Engineer, and the cost of such work shall be approved prior to performance of the work.
- B. The Contractor shall be responsible for the payment for these services to the appropriate payee providing such service, and shall submit evidence of payments to the Engineer prior to its inclusion in the progress payments.
- C. Payment will be made for invoices submitted by the Contractor subject to the Contract Documents. Contractor will not receive any additional compensation for bond or insurance costs for work executed using allowance funding.
- D. Allowance allocations shall only be paid to the Contractor for completed work authorized by the Engineer. All allowance dollar amounts not expended shall revert to the City at the completion of the project. Should the final allowance costs be less than the specified amount of the allowance the Contract will be adjusted accordingly by change order. The amount of change order will not recognize any changes in handling costs at the site, labor, overhead, profit and other expenses caused by the adjustment to the allowance item.
- E. Item 275 - City-Directed Compliance Testing:
  - 1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work, for supplemental confirmation testing where directed by the Engineer not covered in Section 1400, Quality Assurance/Quality Control.
- F. Item 276 - Incidental Replumbing:
  - 1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for House Replumbing Work as directed by the Engineer. The Contractor is required to complete house replumbing on a per each basis as described under Bid Item 40, House Replumbing. This allowance

will be used to cover any additional Engineer-directed house replumbing work necessitated as part of this project which is not shown on the drawings or covered by the included in the unit price bid item.

G. Item 277 - City Directed Site Restoration (Private Property):

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for additional site restoration work on private property not shown on the drawings or described in the specifications as directed by the Engineer.
2. The costs of final grading, site restoration consisting of grassing, shrub, and tree plantings, and maintenance thereof, shown in the Drawings and/or required by the Specifications are not covered in this allowance item, and are to be included in the appropriate unit price Bid Items. The re-grassing or re-sodding of property disturbed by the Contractor as well as the restoration of the landscaping and, structures are part of the Contractor's unit price bid amounts under the appropriate items.

H. Item 278 - Tree Replacement:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for tree replacement on private property not shown on the drawings or described in the specifications as directed by the Engineer. This allowance will also be used to reimburse the Contractor for payments made into the Tree Recompense Fund for the replacement of trees within easements that are not shown on the drawings.

I. Item 279 - Replacement and Repair of Traffic Control Devices:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for Replacement and Repair of Traffic Control Devices as directed by the Engineer.

J. Item 280 - Special Railroad Flagging and DOT Permit Requirements:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for any special railroad flagging or DOT permit requirements beyond those identified in the MUTCD.

K. Item 281 - Hazardous Material Disposal:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General

Condition Article GC-42.3, Force Account Work for Hazardous Material Disposal as directed by the Engineer. This allowance shall cover the remediation of any contaminated soils, water, asbestos or lead paint discovered during the course of the project which are not noted on the drawings.

2. Where areas of hydrocarbon contaminated soil have been identified, these have been noted on the drawings. The costs associated with the remediation of these areas have been identified under Section 1, Bid Item No. 10, Contaminated Soil Removal on the Bid Schedule.

L. Item 282 - City Directed Professional Services:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for City Directed Professional Services as directed by the Engineer. This allowance will be used to pay for any general system improvements requested by the City.

M. Item 283 - Traffic, Erosion Control, and Customer Service Incentives:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for Traffic, Erosion Control, and Customer Service Incentives as directed by the Engineer.
2. The City's "Daily Traffic Inspection Checklist" is attached. The Engineer will submit a completed copy of this checklist to the Contractor daily. If the Contractor has a calendar month without any "NEEDS IMPROVEMENT" items checked, the Contractor will receive a bonus \$1,000 for that month. If any items need improvement, no payment will be made to the Contractor for that month under this allowance. This incentive if earned will be paid over and above the monthly Traffic Regulation pay item. The Contractor is eligible for this incentive fund only until substantial completion of the entire project is achieved.
3. The City's "Daily Erosion and Sediment Control Inspection Checklist" is attached. The Engineer will submit a completed copy of this checklist to the Contractor daily. If the Contractor has a calendar month without any "NEEDS IMPROVEMENT" items checked, the Contractor will receive a bonus \$1000 for that month. If any items need improvement, no payment will be made to the Contractor for that month under this allowance. . This incentive if earned will be paid over and above the lump sum and unit price erosion and sediment control items. The Contractor is eligible for this incentive fund only until substantial completion of the entire project is achieved.
4. The City's "Weekly Customer Service Checklist" is attached. The Engineer will submit a completed copy of this checklist to the Contractor daily. If the Contractor has

a calendar month without any “NEEDS IMPROVEMENT” items checked, the Contractor will receive a bonus \$1000 for that month. If any items need improvement, no payment will be made to the Contractor for that month under this allowance. The Contractor is eligible for this incentive fund only until substantial completion of the entire project is achieved.

N. Item 284 - Unforeseen Utility Conflicts:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for Utility Conflicts as directed by the Engineer. This allowance will be used to pay the cost of: relocating utilities or other structures, not shown on the Drawings, or reasonably anticipated based upon a pre-bid inspection of project conditions and the work site; additional work to resolve unforeseen utility conflicts; or demolishing structures not shown on the Drawings.

O. Item 285 - Settlement Monitoring:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for Settlement Monitoring, as directed by the Engineer.
2. This allowance covers the costs of settlement detection of buildings, structures and at MARTA tunnels as described in the Special Conditions. The allowance is intended to cover the costs associated with ongoing monitoring of the vertical and horizontal control point network that the Contractor shall establish at his cost as part of the general requirements. This allowance will also be used to reimburse the Contractor for the payment for the MARTA Blasting Consultant. Other MARTA requirements described in the Special Conditions including submission of blasting plans to MARTA, coordination with MARTA and attendance of Contractor personnel at the Wayside Safety Training Class shall be considered incidental to the Work.
3. Costs associated with settlement monitoring required under Sections 02446, 02449, and 02450 are incidental to work under the bid items associated with those Sections, and shall not be paid under this allowance.

P. Item 286 – Management of Archeological Issues:

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for Archeological Relocation as directed by the Engineer. This item covers the costs of addressing any archeological issues discovered during the progress of the Work.

Q. Item 287 – City Directed Site Restoration (City Property):



1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for additional restoration of City property not shown on the drawings or described in the specifications as directed by the Engineer.
2. The re-grassing or re-sodding of City property disturbed by the Contractor are part of the Contractor's unit price items for site restoration items described earlier in this Section. The restoration of the landscaping and structures on City property in accordance with the requirements of the Special Conditions are part of the lump sum bid amount under Bid Item 179, Restoration lump sum as well as BID ITEMS 181 THROUGH 184, Tree Restoration, described earlier in this Section.

R. Item 288 – NOT USED

S. Item 289 – Temporary Easement and Schedule Mitigation

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General Condition Article GC-42.3, Force Account Work for obtaining additional rights of entry. This allowance will also be utilized to mitigate any schedule delays caused by the actions of the City.
2. Periods for rights of use of temporary construction easements are identified within the Easement Stipulations and SC-40. Should the Contractor fail to complete work in the temporary easement within the allocated period, any costs to obtain the use of the property for an additional period as well as any costs of the associated professional services, will be borne by the Contractor, dollar for dollar.

T. Item 290 – Dispute Resolution Board and Partnering

1. An allowance has been established as the value of this item. This allowance will be used to pay for the City's share of the costs for Partnering and Dispute Resolution as specified in the Special Conditions. The City will select the consultant to be used for this purpose.
2. The other 50 percent of this cost shall be the Contractor's expense. The Contractor shall include an amount equal to the value of this allowance as part of Item 177, Customer Service to cover their contribution to the costs for Dispute Resolution and Partnering.

U. Item 291 – Additional Inter-basin Traffic Management

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs, where the amounts are determined as specified in General

Condition Article GC-42.3, Force Account Work for additional traffic management costs caused by the construction activities of other General Contractors within the project area.

V. Item 292 – Washington Park Site Restoration

1. An allowance has been established as the value of this item. This allowance shall be used to pay the costs where the amounts are determined as specified in General Condition Article GC-42.3 for specific Washington Park Site restoration costs as further described in SC-51.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

**+++END OF SECTION 01200+++**

**SECTION 01320  
CONSTRUCTION PHOTOGRAPHY**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall furnish all labor, equipment and materials required to provide the Owner with digital construction photography of the Project as specified herein.
- B. The Contractor shall provide for professional videos and photographs to be made prior to and after construction to provide documentation of conditions and aid in any damage claims assessment. All conditions which might later be subject to disagreement shall be shown in sufficient detail to provide a basis for decisions.
- C. Video and photo files shall become the property of the Owner and none of the video or photographs herein shall be published without express permission of the Owner.

**1.02 PRE AND POST CONSTRUCTION PHOTOGRAPHY**

- A. Prior to the beginning of any work, the Contractor shall provide for professional videos and photographs of the work area to record existing conditions.
  - 1. The Contractor shall furnish a complete videotaped record of the pipeline route. The video tape shall include the date of taping and shall contain audio commentary to emphasize existing conditions along the entire route.
  - 2. The route shall be videotaped prior to beginning of construction. The Contractor shall furnish three sets of compact disks containing the videotaped data to the Engineer.
  - 3. The route shall also be videotaped at the completion of construction when directed by the Engineer. The video tape shall show the same areas and features as in the preconstruction videos. The Contractor shall furnish three sets of compact discs containing the videotaped data to the Engineer.
- B. The pre-construction videos shall be submitted to the Engineer within 15 calendar days after receipt of construction Notice to Proceed by the Contractor. Post construction videos and photographs shall be provided prior to final acceptance of the project.

**1.03 PROGRESS PHOTOGRAPHS**

- A. Photographs shall be taken to record the general progress of the Project during each pay period. Photographs shall be representative of the primary work being performed at the time.
- B. All photographs shall be taken with a digital camera. The photographs shall include the date and time marking in the digital record. All photographs shall be labeled on a tab connected to the bottom of the photo to indicate date and description of work shown.

**PART 2 PRODUCTS**

## **2.01 PHOTOGRAPHS**

- A. Photography and video files shall be provided in CD-ROM format.
- B. Photographs shall also be provided in hard copy format. The photographs shall include the date and time marking on the photograph. All photographs shall be labeled on a tab connected to the bottom of the photograph. Tab label shall contain:
  - 1. Project name.
  - 2. Orientation of view.
  - 3. Description of work shown.
- C. All compact disks (CDs) furnished under this section shall be suitable for viewing with Windows Media Player.

## **PART 3 EXECUTION**

### **3.01 SUBMITTALS**

- A. No construction shall start until pre-construction photography has been completed and accepted by the Engineer.
- B. A minimum of ten 8 x10-inch progress photographs shall be submitted with each application for payment. The view selection will be as determined by the Engineer. Photographs shall be submitted in Print File Archival Preservers, 8 1/2 x 11-inch plastic sleeves pre-punched for a 3-ring binder.
- C. Construction photographs shall be submitted with each payment request. Failure to include photographs may be cause for rejection of the payment request.
- D. The Contractor shall be responsible for all discrepancies not documented in the pre-construction videos and photography.

**+++ END OF SECTION 01320 +++**

**SECTION 01550  
TRAFFIC REGULATION**

**PART 1 - GENERAL**

**1.01 SCOPE**

The work specified in this section includes the provision of products, permits, services, procedures and personnel by the Contractor to effect traffic control during the Work.

**1.02 TRAFFIC CONTROL MANAGER REQUIREMENTS**

- A. The Contractor shall designate a qualified individual as the Traffic Control Manager (TCM) who shall be responsible for selecting, installing and maintaining all traffic control devices in accordance with the Plans and Specifications and the Manual of Uniform Traffic Control Devices (MUTCD). A written resume documenting the experience and credentials of the TCM shall be submitted and accepted by the Engineer prior to beginning any work that involves traffic control. The TCM 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 TCM. An alternate TCM must meet the same requirements and qualifications as the primary TCM and be accepted by the Engineer prior to beginning any traffic control duties. The Traffic Control Manager's traffic control responsibilities shall have priority over all other assigned duties.
- B. As the representative of the Contractor, the TCM shall have full authority to act on behalf of the Contractor in administering the Traffic Control Plan. The TCM shall have appropriate training in safe traffic control practices in accordance with Part VI of the MUTCD. In addition to the TCM all other individuals making decisions regarding traffic control shall meet the training requirements of Part VI of the MUTCD. The TCMs 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 TCMs.

**PART 2 - PRODUCTS**

**2.01 SIGNS, SIGNALS, AND DEVICES**

- A. The Contractor shall provide post-mounted and wall-mounted traffic control and informational signs as specified and required by local jurisdictions.
- B. The Contractor shall provide automatic traffic control signals as approved by local jurisdictions.
- C. The Contractor shall provide traffic cones and drums, and flashing lights as approved by local jurisdictions.
- D. The Contractor shall provide flagmen equipment as required by local jurisdictions.

## **PART 3 - EXECUTION**

### **3.01 PERMITS**

- A. The Contractor shall obtain permits from authorities having jurisdiction over road closures before closing any road. The Contractor shall use forms provided by authorities having jurisdiction (City of Atlanta Division of Traffic and Transportation, GDOT, etc.).
- B. The Contractor shall either fax or hand carry permit applications to the City of Atlanta Division of Traffic and Transportation. Permit applications shall indicate the time (in days); length (in feet); the number of lanes; and the purpose of the closure.
- C. All permits are approved for operations during off-peak hours 9:00 a.m. to 4:00 p.m. unless special approval is received.
- D. Operations between the hours of 6:00 p.m. and 10:00 p.m. and Saturdays and Sundays must be approved by the City
- E. Full street closures permits require ninety-six (96) hours advance notice prior to road closure. The following additional information is required prior to approval:
  - 1. The recommended detour route with signage and Traffic Management Plan as per the Manual of Uniform Traffic Control Devices (MUTCD).
  - 2. A copy of the resident and/or business notification letters about the closure. The residents/businesses located between the detour route must be notified about the closure at least five (5) business days prior to the proposed closure.
- F. The City of Atlanta Division of Traffic and Transportation will return full road closure permit applications to the Contractor with a cover letter to the Fire Chief, Chief of Police, Grady Memorial Hospital, MARTA, and the Atlanta Board of Education. The Contractor shall have received the permit application and cover letter at least seventy-two (72) hours before commencing road closure activities.
- G. Lane closures shall require a minimum of forty-eight (48) hour notice prior to closure. The Contractor shall continuously maintain the safety of the traveling public during lane closures in accordance with the requirements of the MUTCD and as stipulated by public officers. Lane closure permits are issued between 8:30 a.m. and 1:00 p.m. Mondays through Fridays.
- H. The City of Atlanta Division of Traffic and Transportation will return the lane closure applications to the Contractor with a cover letter with copies to the Fire Chief, Chief of Police, Grady Memorial Hospital, MARTA, and the Atlanta Board of Education. The Contractor shall have received the permit application and cover letter at least seventy-two (72) hours before commencing lane closure activities.

### **3.02 PREPARATION OF TRAFFIC CONTROL PLANS**

The Traffic Control Plan drawings included with the Contract Documents shall only be considered as a guide and are not intended to contain all the traffic regulation details that may be required by the specifications, permitting agencies and the MUTCD. The Contractor shall develop detailed staging and traffic control plans for performing specific areas of the Work including but not limited to all requirements for certified flagmen, additional traffic control devices, traffic shifts, detours, paces, lane closures or other activities that disrupt traffic flow. The Contractor shall submit these plans in accordance with the Specifications to receive final approvals from permitting agencies and provide any and all required traffic control devices as required by both the permitting agencies and these specifications at no additional cost to the City.

### **3.03 CONSTRUCTION PARKING CONTROL**

- A. The Contractor shall control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and City's operations.
- B. The Contractor shall monitor parking of construction personnel's vehicles in existing facilities and maintain vehicular access to and through parking areas.
- C. The Contractor shall prevent parking on or adjacent to access roads or in non-designated areas.

### **3.04 MAINTENANCE OF TRAFFIC**

- A. Whenever and wherever, in the Engineer's opinion, traffic is sufficiently congested, or public safety is endangered, the Contractor shall furnish uniformed officers to direct traffic and to keep traffic off the highway area affected by construction operations.
- B. When the Contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of Work that is otherwise provided for in the Plans and these Specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to safely accommodate traffic. The Contractor shall furnish, erect and maintain barricades, warning signs, flagmen, and other traffic control devices in conformity with the requirements of the Georgia Department of Transportation and other Local Jurisdictions. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary to ingress to and egress from abutting property or intersecting roads, streets, or highways. The Contractor shall maintain traffic in accordance with any traffic control plans furnished with and made a part of the Plan assembly.
- C. The Contractor shall make his own estimate of all labor, materials, equipment, and incidentals necessary for providing the maintenance of traffic as specified in this section.
- D. Unless specified in the Plans or these Specifications and subject to the approval of the City, the cost of maintaining traffic specified in this section shall be considered incidental to the Work and no separate measurement or payment will be made.

### **3.05 UNIFORMED POLICE OFFICER FOR TRAFFIC CONTROL**

- A. The Contractor shall provide uniformed police officers to regulate traffic when construction operations encroach on public traffic lanes, as approved by the Engineer.
- B. Officers will be currently employed by a local jurisdiction, be in full uniform and have full arrest power while working.
- C. Officers will be employed and paid by the Contractor.
- D. It is the Officers' responsibility to assist in the direction of traffic within the construction site.

### **3.06 FLAGMEN**

The Contractor shall provide trained and equipped flagmen to regulate traffic when construction operations or traffic encroach on public traffic lanes.

### **3.07 FLASHING LIGHTS**

The Contractor shall use flashing lights during hours of low visibility to delineate traffic lanes and to guide traffic.

### **3.08 HAUL ROUTES**

- A. The Contractor shall consult with authorities and establish public thoroughfares to be used for haul routes and site access.
- B. The Contractor shall confine construction traffic to designated haul routes.
- C. The Contractor shall provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.

### **3.09 ROAD CLOSURES ON CITY ROADS**

- A. No street, road, or highway shall be closed without the permission of the owner of any street, road, or highway and the fire department having jurisdiction. Prior to closing a street, road, or highway, signs shall be posted for a minimum of seven (7) days prior to actual closing, forewarning of the imminent closing. The City shall determine the information to be placed upon the signs by the Contractor. Where traffic is diverted from the Work, the Contractor shall provide all materials and perform all work for the construction and maintenance of all required temporary roadways, structures, barricades, signs, and signalization.
- B. To obtain approval to close a road or street maintained by the City, the Contractor must proceed as follows:
  - 1. The Contractor must obtain approval of his traffic plan from the Engineer unless a traffic plan approved by the Engineer is included in the Plans. The traffic plan must be in accordance with the requirements of the Georgia Department of Transportation and the City of Atlanta.



2. The Contractor must obtain a utility permit.
3. The Contractor must apply in writing to the City and obtain a permit to close the road on a specific date. Routine permit approval by the City requires from one (1) to two (2) weeks depending on when the application is received.
4. The Contractor must obtain a permit from the City before posting closure signs. Signs must be posted for seven (7) days prior to the first day of closure. Signs must be acceptable to the Engineer.
5. Emergency road closures will be handled by the Engineer.

### **3.10 PROCEDURES FOR TRAFFIC DETOUR ROUTE PLAN**

- A. The Contractor shall provide a sketch map showing his traffic detour route plan to the Engineer. The sketch map need not be drawn to scale but should resemble, as closely as possible, the actual location. The sketch map shall be drawn in a manner so as to provide emergency agencies a better understanding of the detour for quick response. The sketch map shall include directional arrows showing the flow of traffic.
- B. “Road Closed Ahead” signs shall be erected before the start point of the detour indicating the name of the street closed.
- C. Detour signs with appropriate directional arrows shall be erected at every intersection along the detour route until the end of the detour, when the traffic is back to the original street.
- D. The Contractor shall erect an “End Detour” sign at the end of the detour.
- E. Each detour and “End Detour” sign shall be accompanied by an accessory plate indicating the name of the street being detoured.
- F. The Contractor shall apply appropriate traffic control measures in accordance with the requirements of the MUTCD and the City of Atlanta codes.

### **3.11 BARRICADES AND WARNING SIGNS**

- A. The Contractor shall furnish, erect, and maintain all barricades and warning signs for hazards necessary to protect the public and the Work. When used during periods of darkness, such barricades, warning signs and hazard markings shall be suitably illuminated or reflectorized.
- B. For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights, and other traffic control devices in conformity with the requirements of the Georgia Department of Transportation and the City of Atlanta.
- C. The Contractor shall furnish and erect all barricades and warning signs for hazards prior to commencing Work which requires such erection and shall maintain the barricades and warning signs for hazards until their dismantling is directed by the Engineer.

### **3.12 REMOVAL**

The Contractor shall remove equipment and devices when no longer required and repair damage caused by installation.

**+++END OF SECTION 01550+++**

**SECTION 01610  
TRANSPORTATION AND HANDLING**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall provide transportation of all equipment, materials and products furnished under these Contract Documents to the Work site. In addition, the Contractor shall provide preparation for shipment, loading, unloading, handling and preparation for installation and all other work and incidental items necessary or convenient to the Contractor for the satisfactory prosecution and completion of the Work.
- B. All equipment, materials and products damaged during transportation or handling shall be repaired or replaced by the Contractor at no additional cost to the County prior to being incorporated into the Work.

**1.02 TRANSPORTATION**

- A. All equipment shall be suitably boxed, crated or otherwise protected during transportation.
- B. Where equipment will be installed using existing cranes or hoisting equipment, the Contractor shall ensure that the weights of the assembled sections do not exceed the capacity of the cranes or hoisting equipment.
- C. Small items and appurtenances such as gauges, valves, switches, instruments and probes which could be damaged during shipment shall be removed from the equipment prior to shipment, packaged and shipped separately. All openings shall be plugged or sealed to prevent the entrance of water or dirt.

**1.03 HANDLING**

- A. All equipment, materials and products shall be carefully handled to prevent damage or excessive deflections during unloading or transportation.
- B. Lifting and handling drawings and instructions furnished by the manufacturer or supplier shall be strictly followed. Eyebolts or lifting lugs furnished on the equipment shall be used in handling the equipment. Shafts and operating mechanisms shall not be used as lifting points. Spreader bars or lifting beams shall be used when the distance between lifting points exceeds that permitted by standard industry practice.
- C. Under no circumstances shall equipment or products such as pipe, structural steel, castings, reinforcement, lumber, piles, poles, etc., be thrown or rolled off of trucks onto the ground.
- D. Slings and chains shall be padded as required to prevent damage to protective coatings and finishes.

**PART 2 PRODUCTS**

**(NOT USED)**

**PART 3 EXECUTION**

**(NOT USED)**

**+++ END OF SECTION 01610 +++**

**SECTION 02150  
SHEETING, SHORING AND BRACING**

**PART I GENERAL**

**1.01 SCOPE**

- A. This section specifies requirements for sheeting, shoring, and bracing of trenches and excavations greater than 5-feet in depth. Where shoring, sheeting, bracing or other supports are necessary, they shall be furnished, placed, maintained, and except as specified otherwise, removed by the Contractor.
- B. Design Requirements:
1. The design, planning, installation and removal, if required, of all sheeting, shoring, lagging, and bracing shall be accomplished in such a manner as to maintain the required excavation or trench section and to maintain the undisturbed state of the soils below and adjacent to the excavation.
  2. The Contractor shall design sheeting, shoring, and bracing in accordance with the OSHA Safety and Health Standards as well as state and local requirements.
  3. Horizontal strutting below the barrel of a pipe and the use of pipe as support are not acceptable.
  4. When the construction sequence of structures requires the transfer of bracing to the completed portions of any new structure or to any existing structure, the Contractor shall provide the Engineer with a complete design analysis of the expected impact of that bracing on the structure. This action shall in no way absolve the Contractor of responsibility of damage resulting from said bracing.

**1.02 REFERENCES**

- A. This section contains references to the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
OSHA 2207	OSHA Safety and Health Standards, Revised 1987

**1.03 SUBMITTALS**

- A. Prior to starting any excavation work requiring sheeting, shoring, and bracing, the Contractor shall submit his plans for trench and excavation support systems to the Engineer as working drawings in accordance with the requirements of the General Conditions. No provisions of the above requirements shall be construed as relieving the Contractor of his overall responsibility and liability for the work.

- B. The Contractor shall submit a Certification of Compliance properly identified with the project name and project location. The Certification shall state that the sheeting, shoring and bracing have been designed in accordance with the prevailing codes and standards by a Professional Engineer registered in the State of Georgia with the Engineer's seal and signature appearing on the certification. Calculations shall not be submitted unless specifically requested by the Engineer.

**PART 2 PRODUCTS**

**(NOT USED)**

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. The construction of sheeting, shoring and bracing shall not disturb the state of soil adjacent to the trench and below the excavation bottom.
- B. Trench sheeting below the top of a pipe shall be left in place.
- C. Excavation shall not be started until the design for support systems has been accepted by the Engineer.

**+++ END OF SECTION 02150 +++**

**SECTION 02225**  
**TRENCH EXCAVATION AND BACKFILL**

**PART I GENERAL**

**1.01 SCOPE**

- A. The Contractor shall furnish all labor, materials, equipment, and incidentals required to perform all excavation and backfill required to complete the work as shown on the Drawings and as specified herein. The work shall include, but not be necessarily limited to, excavation and backfill for pipe and appurtenances, manholes and vaults, backfill and compaction, disposal of surplus and unsuitable material and all related work such as sheeting and bracing and dewatering.
- B. Work shall also include the removal of trees, stumps, brush, debris or other obstacles which remain after clearing and grubbing operations, which may obstruct the work, and the removal of all other materials, including rock, to the extent necessary to install the pipe and appurtenances in conformance with the lines and grades shown on the Drawings and as specified herein.
- C. Backfill shall include the refilling and compaction of the fill in the trenches and excavations up to the surrounding ground surface.
- D. The trench is divided into five specific areas:
  - 1. Foundation: The area beneath the bedding, sometimes also referenced to as trench stabilization.
  - 2. Bedding: The area above the trench bottom (or foundation) and below the bottom of the barrel of the pipe.
  - 3. Haunching: The area above the bottom of the barrel of the pipe up to a specified height above the bottom of the barrel of the pipe.
  - 4. Initial Backfill: The area above the haunching material and below a plane 12-inches above the top of the barrel of the pipe.
  - 5. Final Backfill: The area above a plane 12-inches above the top of the barrel of the pipe.
- E. The choice of method, means, techniques, and equipment rests with the Contractor. The Contractor shall select the method and equipment for trench excavation and backfill depending upon the: type of material to be excavated and backfilled, the depth of excavation, the amount of space available for operation of equipment, storage of excavated material, proximity of man-made improvements to be protected and available easement or right of way.

**1.02 QUALITY ASSURANCE**

- A. Reference Standards: The Contractor shall comply with the applicable provisions and recommendations of the latest editions of the following standards, except as otherwise shown on the Drawings or specified herein.
  - 1. ASTM C33 – Standard Specification for Concrete Aggregates
  - 2. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

3. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>)
  4. ASTM D4253 – Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using A Vibratory Table
  5. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
  6. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
  7. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>)
  8. ASTM D2937 – Standard Method for Density of Soil in Place by the Drive-Cylinder Method
- B. Density: All references to "maximum dry density" shall mean the maximum dry density defined by ASTM D698, except that for cohesionless, free draining soils "maximum dry density" shall mean the maximum index density as determined by ASTM D4253. Determination of the density of foundation, bedding, haunching, or backfill materials in place shall meet with the requirements of ASTM D1556, ASTM D6938 or ASTM D2937.
- C. Sources and Evaluation Testing: Testing of materials to certify conformance with the Specifications shall be performed by an independent testing laboratory.

### **1.03 SUBMITTALS**

- A. The Contractor shall submit record documents in accordance with the requirements of the General Conditions. The Contractor shall record locations of all pipelines installed referenced to survey benchmarks. The Contractor shall also include the locations of all underground utilities encountered and/or rerouted. The Contractor shall provide dimensions, materials, elevations, inverts and direction of flow. The Contractor shall use GPS technology or conventional survey methods to locate utilities.

### **1.04 SAFETY**

- A. Perform all trench excavation and backfilling activities in accordance with the Occupational Safety and Health Act of 1970 (PL 91-596), as amended. The Contractor shall pay particular attention to the Safety and Health Regulations Part 1926, Subpart P "Excavations" as described in OSHA publication 2226.

### **1.05 TESTING**

- A. Testing shall be performed by an approved independent laboratory.
- B. Compaction testing shall be performed in accordance with the requirements of ASTM D1556 or ASTM D6938.

## **PART 2 PRODUCTS**

### **2.01 TRENCH FOUNDATION MATERIALS**

- A. Crushed Stone: Crushed stone shall be utilized for trench foundation (trench stabilization) and shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I



(limestone, marble, or dolomite) or Group II (quartzite, granite, or gneiss). Stone size shall be between No. 57 and No. 4, inclusive.

**2.02 BEDDING AND HAUNCHING MATERIALS**

A. Water Mains

1. Unless specified otherwise, bedding and haunching materials shall be suitable materials that have been excavated from the trench and have been approved by the Engineer for use as pipe bedding and haunching. Materials shall be clean and free of rock larger than 2-inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes and other unsuitable materials.
2. Crushed stone, if utilized for bedding and haunching, shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I (limestone, marble, or dolomite) or Group II (quartzite, granite, or gneiss). Stone size shall be between No. 57 and No. 4, inclusive.
3. The Contractor’s attention is directed to Section 02616, paragraph 3.04.

B. Sewers and Storm Drains: Crushed stone utilized for bedding and haunching shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I (limestone, marble, or dolomite) or Group II (quartzite, granite, or gneiss). Stone size shall be between No. 57 and No. 4, inclusive.

C. Filter Fabric - Non-Woven Type

1. Filter fabric associated with bedding shall be a UV stabilized, spunbonded, continuous filament, needle-punched, polypropylene, non-woven geotextile.
2. The fabric shall have an equivalent open size (EOS or AOS) of 120 - 70. The fabric shall also conform to the minimum property values listed in the following table:

Fabric Property	Unit	Test Procedure	Average Value	
			Typical	Minimum
Weight	oz/yd <sup>2</sup>	ASTM D 3776	8.3	
Thickness	mils	ASTM D 1777	105	
Grab Strength	lbs.	ASTM D 4632	240	210
Grab Elongation	%	ASTM D 4632	>50	50
Tear Strength	lbs.	ASTM D 4533	100	85
Mullen Burst	psi	ASTM D 3786	350	320
Puncture Resistance	lbs.	ASTM D 4833	115	100
Permittivity	sec <sup>-1</sup>	ASTM D 4491	1.7	
Water Permeability	cm/sec	ASTM D 4491	0.4	
Water Flow Rate	gpm/ft <sup>2</sup>	ASTM D 4491	120	
UV Resistance (500 hrs.)	%	ASTM D 4355	>85	
pH			2 - 13	

3. If ordered by the Engineer, the filter fabric manufacturer shall furnish the services of a competent factory representative to supervise and/or inspect the installation of pipe. This service will be furnished for a minimum of 10 days during initial pipe installation.
4. Filter fabric shall be equal to Polyfelt TS 700, Trevira 1125 or SuPac 7-MP.

### **2.03 INITIAL BACKFILL**

- A. Initial backfill material shall be crushed stone or earth materials as specified for bedding and haunching materials.
- B. Earth materials utilized for initial backfill shall be suitable materials selected from materials excavated from the trench. Suitable materials shall be clean and free of rock larger than 2-inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes and other unsuitable materials. Should the material excavated from the trench be saturated, the saturated material may be used as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, initial backfill materials shall be moistened to facilitate compaction by tamping.
- C. If materials excavated from the trench are not suitable for use as initial backfill material, provide select material conforming to the requirements of this Section.

### **2.04 FINAL BACKFILL**

- A. Final backfill material shall be general excavated earth materials, shall not contain rock larger than 2-inches at its greatest diameter, cinders, stumps, limbs, man-made wastes and other unsuitable materials.
- B. If materials excavated from the trench are not suitable for use as final backfill material, provide select material conforming to the requirements of this Section.

### **2.05 SELECT BACKFILL**

- A. Select backfill shall be materials that meet the requirements as specified for bedding, haunching, initial backfill or final backfill materials, including compaction requirements.

### **2.06 CONCRETE**

- A. Concrete for bedding, haunching, initial backfill, or encasement shall have a compressive strength of not less than 3,000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5-inches. Ready-mixed concrete shall be mixed and transported in accordance with ASTM C94. Reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

### **2.07 FLOWABLE FILL**

- A. Controlled strength flowable fill shall be used as trench backfill only when authorized, in writing, by the Engineer.
- B. Controlled low strength flowable fill shall conform to Section 600 of the Georgia Department of Transportation Standard Specifications for Construction of Roads and Bridges – latest edition.

- C. Flowable fill design mix shall be for “excavatable” fill. Design mix shall be submitted to the Engineer for approval in accordance with Section 600.3.03 of the GDOT Standard Specifications.

## **2.08 GRANULAR MATERIAL**

- A. Granular material, where required for trench backfill, shall be sand, river sand, crushed stone or aggregate, pond screenings, crusher run, recycled concrete, or other angular material. Granular material shall meet gradation requirements for Size No. 57 or finer.

## **2.09 GRADED AGGREGATE BASE**

- A. Graded aggregate base shall be Class “A” meeting the requirements of the Georgia Department of Transportation Specification Section 815.01.

## **PART 3 EXECUTION**

### **3.01 TRENCH EXCAVATION**

- A. Topsoil and grass shall be stripped a minimum of 6-inches over the trench excavation site and stockpiled separately for replacement over finished graded areas.
- B. Trenches shall be excavated to the lines and grades shown on the Drawings with the centerlines of the trenches on the centerlines of the pipes and to the dimensions which provide the proper support and protection of the pipe and other structures and accessories.
- C. Trench Width:
  - 1. The sides of all trenches shall be vertical to a minimum of one foot above the top of the pipe. Unless otherwise indicated on the Drawings, the maximum trench width shall be equal to the sum of the outside diameter of the pipe plus two feet. The minimum trench width shall be that which allows the proper consolidation of the haunching and initial backfill material.
  - 2. Excavate the top portion of the trench to any width within the construction easement or right-of-way which will not cause unnecessary damage to adjoining structures, roadways, pavement, utilities, trees or private property. Where necessary to accomplish this, provide sheeting and shoring.
  - 3. Where rock is encountered in trenches, excavate to remove boulders and stones to provide a minimum of 12-inches clearance between the rock and any part of the pipe, manhole, vault or other structure.
- D. Trench Depth:
  - 1. The trenches shall be excavated to the required depth or elevation which allow for the placement of the pipe and bedding to the dimensions and elevations shown on the Drawings.
  - 2. Where rock is encountered in trenches for pipelines, excavate to the minimum depth which will provide a clearance below the pipe barrel of 8-inches for pipe 21-inches in diameter and smaller and 12-inches clearance for larger pipe, manholes and other structures. Remove boulders and

stones to provide above minimum clearances between the rock and any part of the pipe, manhole, vault or other structure.

E. Excavated Materials:

1. Excavated materials shall be placed adjacent to the work to be used for backfilling as required. Top soil shall be carefully separated and lastly placed in its original location.
2. Excavated material shall be placed sufficiently back from the edge of the excavation to prevent caving of the trench wall, to permit safe access along the trench and not cause any drainage problems.
3. Excavated material shall be placed so as not to damage existing landscape features or man-made improvements and also allow access to valves and hydrants.

### **3.02 SHEETING, SHORING AND BRACING**

- A. Sheeting, shoring and bracing is specified in Section 02150.
- B. Protection of the excavation against caving or settling of the banks shall be the sole responsibility of the Contractor. The Contractor shall protect the sides of his excavation by sheeting and bracing as may be necessary. No actions or instructions by the Engineer shall be regarded as the responsibility for security of the trench or the surrounding areas. The full responsibility remains with the Contractor.
- C. The Contractor shall furnish, put in place and maintain sheeting and bracing required to support the side of the excavation and prevent loss of ground which could damage or delay the work or endanger adjacent structures or vehicular traffic. If the Engineer is of the opinion that at any point sufficient or proper supports have not been provided, he may order additional supports placed at the expense of the Contractor. Compliance with such order shall not relieve the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.
- D. The Contractor shall leave in place to be imbedded in the backfill of the trench, all wood sheeting, bracing and other related items as shown on the Drawings, or which the Engineer may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Engineer may direct that timber used for sheeting and bracing in the trench be cut off at any specified elevation, after backfilling and tamping has reached this level.
- E. All sheeting and bracing not left in place shall be carefully removed in such manner as not to endanger the construction of other structures, utilities or property, whether public or private.
- F. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place in the trench sufficient sheeting and bracing to prevent any caving or moving of the ground adjacent to the sides of the trench.

- G. The Contractor shall receive no payment, other than that included in the price to be paid for pipe, for any extra timber used for sheeting, bracing and other related items. The Contractor shall receive no payment for such timber which was used for the convenience of the Contractor.

### **3.03 TEST PITS**

- A. Test pits for the purpose of locating underground utilities or structures as an aid in establishing the precise location of new work may be excavated by the Contractor. Test pits shall be backfilled as soon as the desired information has been obtained. The backfilled surface shall be maintained in a satisfactory condition for travel until resurfaced as hereinafter specified.
- B. Excavation and backfill of test pits shall be considered work incidental to the project and the cost shall be included in the appropriate bid item.
- C. If, for any reason, a test pit is left open for any period of time, it shall be properly barricaded and lighted by the Contractor.

### **3.04 ROCK EXCAVATION**

- A. Definition of Rock: Any material which, in the opinion of the Engineer, cannot be excavated with conventional excavating equipment, and must be removed by drilling and blasting.
- B. Blasting:
  - 1. Blasting is not an acceptable method to remove rock for this project.
- C. Removal of Rock: Dispose of rock off site that is surplus or not suitable for use as rip rap or backfill.
- D. The Contractor shall notify the Engineer prior to any blasting. Additionally, the Contractor shall notify the Owner, all cities and/or counties having jurisdiction, and the local fire department before any charge is set.
- E. Following review by the Engineer regarding the proximity of permanent buildings and structures to the blasting site, the Engineer may direct the Contractor to employ an independent, qualified specialty sub-contractor, approved by the Engineer, to: monitor the blasting by use of a seismograph; identify the areas where light charges must be used, conduct pre-blast and post-blast inspections of structures, including photographs or videos; and maintain a detailed written log.

### **3.05 DEWATERING EXCAVATIONS**

- A. Dewater excavation continuously to maintain a water level two feet below the bottom of the trench.
- B. Control drainage in the vicinity of excavation so the ground surface is properly pitched to prevent water running into the excavation.
- C. There shall be sufficient pumping equipment, in good working order, available at all times, to remove any water that accumulates in excavations. Where the utility crosses natural drainage channels, the work shall be conducted in such a manner that unnecessary damage or delays in the prosecution of the Work will be prevented. Provision shall be made for the satisfactory disposal of surface water to prevent damage to public or private property.

- D. In all cases, accumulated water in the trench shall be removed before placing bedding or haunching, laying pipe, placing concrete or backfilling.
- E. Where dewatering is performed by pumping the water from a sump, crushed stone shall be used as the medium for conducting the water to the sump. Sump depth shall be at least two feet below the bottom of the trench. Pumping equipment shall be of sufficient quantity and/or capacity to maintain the water level in the sump two feet below the bottom of the trench. Pumps shall be a type such that intermittent flows can be discharged. A standby pump shall be required in the event the operating pump or pumps clog or otherwise stop operation.
- F. Dewater by use of a well point system when pumping from sumps does not lower the water level two feet below the trench bottom. Where soil conditions dictate, the Contractor shall construct well points cased in sand wicks. The casing shall be jetted into the ground, followed by the installation of the well point, filling casing with sand and withdrawing the casing.

### **3.06 TRENCH FOUNDATION AND STABILIZATION**

- A. The bottom of the trench shall provide a foundation to support the pipe and its specified bedding. The trench bottom shall be graded to support the pipe and bedding uniformly throughout its length and width.
- B. If, after dewatering as specified above, the trench bottom is spongy, or if the trench bottom does not provide firm, stable footing and the material at the bottom of the trench will still not adequately support the pipe, the Engineer may determine that the trench bottom is unsuitable and the Engineer may then order trench stabilization by directing the Contractor to over excavate trench bottom and fill with crushed stone.
- C. Where the replacement of unsuitable material with crushed stone does not provide an adequate trench foundation, the trench bottom shall be excavated to a depth of at least two feet below the specified trench bottom. Place filter fabric in the bottom of the trench and support the fabric along the trench walls until the trench stabilization, bedding, haunching and pipe have been placed at the proper grade. The ends of the filter fabric shall be overlapped above the pipe.
- D. Where trench stabilization is provided, the trench stabilization material shall be compacted to at least 95 percent of the maximum dry density, unless shown or specified otherwise.

### **3.07 BEDDING AND HAUNCHING**

- A. Prior to placement of bedding material, the trench bottom shall be free of any water, loose rocks, boulders, or large dirt clods.
- B. Bedding material shall be placed to provide uniform support along the bottom of the pipe and to place and maintain the pipe at the proper elevation. The initial layer of bedding placed to receive the pipe shall be brought to the grade and dimensions indicated on the Drawings. All bedding shall extend the full width of the trench bottom. The pipe shall be placed and brought to grade by tamping the bedding material or by removal of the excess amount of the bedding material under the pipe. Adjustment to grade line shall be made by scraping away or filling with bedding material. Wedging or blocking up of pipe shall not be permitted. Applying pressure to the top of the pipe, such as with a backhoe bucket,

to lower the pipe to the proper elevation or grade shall not be permitted. Each pipe section shall have a uniform bearing on the bedding for the length of the pipe, except immediately at the joint.

- C. At each joint, excavate bell holes of ample depth and width to permit the joint to be assembled properly and to relieve the pipe bell of any load.
- D. After the pipe section is properly placed, add the haunching material to the specified depth. The haunching material shall be shovel sliced, tamped, chinked or otherwise consolidated to provide uniform support for the pipe barrel and to fill completely the voids under the pipe, including the bell hole. Prior to placement of the haunching material, the bedding shall be clean and free of any water, loose rocks, boulders, or dirt clods.
- E. Pipe Bedding:
  - 1. The Contractor shall furnish and install pipe on the type and thickness of bedding as shown on the Drawings or as specified by the Engineer.
  - 2. Pipe bedding requirements for large water transmission mains shall be as specified in Section 02225.
- F. Manholes, Vaults and Other Structures: Excavate to a minimum of 12-inches below the planned elevation of the base of the manhole, vault or structure. Place and compact crushed stone bedding material to the required grade before constructing the manhole, vault or structure.
- G. Compaction:
  - 1. Bedding and haunching materials under pipe, manholes, vaults, structures and accessories shall be compacted to a minimum of 95 percent of the maximum dry density, unless shown or specified otherwise.
  - 2. Bedding and haunching materials within the limits of restrained joint pipe shall be compacted to a minimum of 95 percent of the maximum dry density, unless shown or specified otherwise.

### **3.08 INITIAL BACKFILL**

- A. Initial backfill shall be placed to anchor the pipe, protect the pipe from damage by subsequent backfill and ensure the uniform distribution of the loads over the top of the pipe.
- B. Place initial backfill material carefully around the pipe in uniform layers to a depth of at least 12-inches above the pipe barrel. Layer depths shall be a maximum of 6-inches for pipe 18-inches in diameter and smaller and a maximum of 12-inches for pipe larger than 18-inches in diameter.
- C. Backfill on both sides of the pipe simultaneously to prevent side pressures.
- D. Compact each layer thoroughly with suitable hand tools or tamping equipment.
- E. Initial backfill shall be compacted to a minimum 95 percent of the maximum dry density, unless shown or specified otherwise. Initial backfill within the limits of restrained joint pipe shall be compacted to a minimum 95 percent of the maximum dry density, unless shown or specified otherwise.

- F. If materials excavated from the trench are not suitable for use as backfill materials, provide select backfill material conforming to the requirements of this Section for initial backfill.

### **3.09 CONCRETE ENCASEMENT FOR PIPELINES**

- A. Where concrete encasement is shown on the Drawings for pipelines, excavate the trench to provide a minimum of 12-inches clearance from the barrel of the pipe. Lay the pipe to line and grade on solid concrete blocks or solid bricks. In lieu of bedding, haunching and initial backfill, place concrete to the full width of the trench and to a height of not less than 12-inches above the pipe bell. Do not backfill the trench for a period of at least 24 hours after concrete is placed.

### **3.10 FINAL BACKFILL**

- A. Backfill carefully to restore the ground surface to its original condition.
- B. The top 6-inches of backfill shall be topsoil or graded aggregate base material, depending upon the trench location.
- C. Excavated material which is unsuitable for backfilling, and excess material, shall be disposed of in a manner approved by the Engineer. Surplus soil may be neatly distributed and spread over the site, if approved by the Engineer, except that surplus soil shall not be distributed and spread over the site in areas under Corps of Engineers jurisdiction. If such spreading is allowed, the site shall be left in a clean condition and shall not affect pre-construction drainage patterns. Surplus rock from the trenching operations shall be removed from the site.
- D. If materials excavated from the trench are not suitable for use as backfill materials, provide select backfill material conforming to the requirements of this Section.
- E. Pipelines: After initial backfill material has been placed and compacted, backfill with final backfill material. Place backfill material in uniform layers, compacting each layer thoroughly as follows:
  - 1. In 6-inch layers, if using light power tamping equipment, such as a "jumping jack"
  - 2. In 12-inch layers, if using heavy tamping equipment, such as hammer with tamping feet
- F. Manholes, Vaults and other Structures:
  - 1. Backfilling shall be carried up evenly on all walls of an individual structure simultaneously. A variation of 2-feet in elevation will be the maximum allowable. Backfill shall not be allowed against walls until they and their supporting slabs, if applicable, have attained sufficient strength. Backfill shall be subject to the approval of the Engineer.
  - 2. In locations where pipes pass through walls, the Contractor shall take the following precautions to consolidate the backfill up to an elevation of at least 2-feet above the bottom of the pipe:
    - a. Place fill in such areas for a distance of not less than 3-feet either side of the centerline of the pipe in level layers not exceeding 6-inches in depth.
    - b. Thoroughly compact each layer with a power tamper to the satisfaction of the Engineer.



3. Temporary bracing shall be provided as required during construction of all structures to protect partially completed structures against construction loads, hydraulic pressure and earth pressure. The bracing shall be capable of resisting all loads applied to the walls as a result of backfilling.
- G. Final backfill shall be compacted to a minimum 95 percent of the maximum dry density, unless specified otherwise. Final backfill underlying pavement and backfill under dirt and gravel roads and within the limits of restrained joint pipe shall be compacted to a minimum 95 percent of the maximum dry density, unless specified otherwise.
- H. Concrete or bituminous asphalt removed during construction shall not be placed in backfill.
- I. The surface of filled areas shall be graded to smooth true lines in conformance with the grades or elevations shown on the Drawings.

### **3.11 ADDITIONAL MATERIAL**

- A. Where final grades above the pre-construction grades are required to maintain minimum cover, additional fill material will be as shown on the Drawings. Utilize excess material excavated from the trench, if the material is suitable. If excess excavated materials are not suitable, or if the quantity available is not sufficient, provide additional suitable fill material.

### **3.12 BACKFILL WITHIN RIGHT-OF-WAYS**

- A. Compact backfill within the limits of the any right-of-way including the backfill underlying pavement and sidewalks, and backfill under dirt and gravel roads to a minimum 95 percent of the maximum dry density.

### **3.13 BACKFILL WITHIN GEORGIA DOT RIGHT-OF-WAY**

- A. Backfill within the Georgia DOT right-of-way shall meet the requirements stipulated in the "Utility Accommodation Policy and Standards", published by the Georgia Department of Transportation.

### **3.14 FLOWABLE FILL**

- A. Where flowable fill is utilized, excavate the trench to provide a minimum of 6-inches clearance on either side of the pipe barrel. Lay the pipe to line and grade on solid concrete blocks or bricks. In lieu of bedding, haunching and initial backfill, place flowable fill to the full width and depth of the trench.
- B. Flowable fill shall be protected from freezing for a period of 36 hours after placement. Minimum temperature of flowable fill at point of delivery shall be 50 degrees F.

### **3.15 COMPACTED GRANULAR MATERIAL**

- A. Where compacted granular material is required as initial and final backfill material, it shall be placed after bedding and haunching material specified elsewhere has been placed. Compacted granular material shall be compacted to a minimum 95 percent of the maximum dry density.

### **3.16 TESTING AND INSPECTION**

- A. The soils testing laboratory is responsible for compaction tests in accordance with paragraph 1.02 of this Section.
- B. Compaction tests:
  - 1. Compaction tests will be required in existing or proposed streets, sidewalks, driveways and other existing or proposed paved areas at varying depths and at intervals as determined by the Engineer.
  - 2. Minimum requirements for compaction testing shall be a minimum of one (1) test for each 400 feet or less of pipeline and one (1) test at each manhole, vault and other structure unless soil conditions or construction practices, in the opinion of the Engineer, warrant the need for additional tests. One (1) complete compaction test shall consist of individual tests in the same vertical plane over the installed pipe, beginning at a depth of 2-feet above the top of the pipe and at successive two feet vertical increments up to the top of the backfill.
  - 3. The Engineer shall direct where additional compaction tests will be performed along the Project route.
- C. The soils testing laboratory shall be responsible for inspecting and testing stripped site, sub grades and proposed fill materials.
- D. The Contractor's duties relative to testing include:
  - 1. Notifying laboratory of conditions requiring testing.
  - 2. Coordinating with laboratory for field testing.
  - 3. Providing excavation as necessary for laboratory personnel to conduct tests.
  - 4. Paying costs for additional testing performed beyond the required scope.
  - 5. Paying costs for re-testing where initial tests reveal non-conformance with specified requirements.
- E. Inspection
  - 1. Earthwork operations, acceptability of excavated materials for bedding or backfill, and placing and compaction of bedding and backfill shall be subject to inspection by the Engineer.
  - 2. Foundations and shallow spread footing foundations shall be inspected by a geotechnical engineer, who shall verify suitable bearing conditions.
- F. Contractor shall comply with applicable codes, ordinances, rules, regulations and laws of local, municipal, state and federal authorities having jurisdiction.

+ + + **END OF SECTION 02225** + + +

**SECTION 02575  
REMOVING AND REPLACING PAVEMENT**

**PART 1 – GENERAL**

**1.01.1 SCOPE**

- A. The work to be performed under this Section shall consist of existing pavement, sidewalks, steps, patios, curbs, and gutters in paved areas where such have been removed for construction of utilities and appurtenances.
- B. Existing pavement, sidewalks, curbs, and gutters shall be replaced to meet the current City of Atlanta standards, or to match existing pavement sidewalk, curb, or gutters; whichever is more stringent.

**1.02 SUBMITTALS**

- A. If required by the City or Engineer, provide certificates stating that materials supplied comply with Specifications. Certificates shall be signed by the asphalt producer and the Contractor.

**1.03 CONDITIONS**

- A. Weather Limitations:
  - 1. Apply bituminous tack coat only when the ambient temperature in the shade has been at least 50 degrees F for 12 hours immediately prior to application.
  - 2. Do not conduct paving operations when surface is wet or contains excess of moisture that would prevent uniform distribution and required penetration.
  - 3. Construct asphaltic courses only when atmospheric temperature in the shade is above 40 degrees F, when the underlying base is dry and when weather is not rainy.
  - 4. Place base course when air temperature is above 35 degrees F and rising.
- B. Grade Control: Establish and maintain the required lines and grades for each course during construction operations.

**PART 2 – PRODUCTS**

**2.01 MATERIALS AND CONSTRUCTION**

- A. Graded Aggregate Base: The sub-base shall be a minimum of 6-inches thick and a width equal to the width of the finished paving. Aggregate base shall be Class A, meeting the requirements of the Georgia Department of Transportation Specification Section 815.01. Compact to at least 95% Standard Proctor Density. (ASTM D-698)
- B. Base: The base for all paved roadways shall conform to the requirements of the Georgia Department of Transportation Specifications for the Hot Mix asphalt Section 828 Type “B”.

- C. Tack Coat: Tack coat shall conform to Section 413 of the Georgia Department of Transportation Standard Specifications.
- D. Binder Course: The binder course of all paved roadways shall conform to the requirements of Section 400, Type “B” of the Georgia Department of Transportation Standard Specifications.
- E. Surface Course: The surface course for all pavement, including prime or tack coat when required by the Engineer, shall conform to the requirements of Section 400, Type “E” of the Georgia Department of Transportation Standard Specifications
- F. Concrete: Provide concrete and reinforcing for concrete pavement or base courses in accordance with the requirements of the Georgia Department of Transportation Standard Specifications, Section 430. Concrete shall be minimum 3,000 psi compressive strength or as otherwise shown on the Drawings.
- G. Special Surfaces: Where pavement, sidewalks, steps, patios, curbs, or gutters are disturbed or damaged which are constructed of specialty type surfaces, e.g., brick or stone, these facilities shall be restored utilizing similar, if not original, materials. Where the nature of these surfaces dictate, a specialty contractor shall be used to restore the surfaces to their previous or better condition. Special surfaces shall be removed and replaced to the limits to which they were disturbed.

## **2.02 TYPES OF PAVEMENTS**

- A. General: All existing pavement removed, destroyed or damaged by construction shall be replaced with the same type and thickness of pavement as that existed prior to construction, unless otherwise directed by the Engineer/Owner. Materials, equipment and construction methods used for paving work shall conform to the Georgia Department of Transportation specifications applicable to the particular type required for replacement, repair, or new pavements.
- B. Aggregate Base: Aggregate base shall be constructed in accordance with the requirements of Section 310 of the Georgia Department of Transportation Standard Specifications. The maximum thickness to be laid in a single course shall be 6-inches compacted. If the design thickness of the base is more than 6-inches, it shall be constructed in two or more courses of approximate equal thickness. After the material placed has been shaped to line, grade, and cross-section, it shall be rolled until the course has been uniformly compacted to at least 100 percent of the maximum dry density when Group 2 aggregate is used, or to at least 98 percent of maximum dry density when Group 1 aggregate is used.
- C. Concrete Pavement: Concrete pavement or base courses shall be replaced with concrete. The surface finish of the replaced concrete pavement shall conform to that of the existing pavement. The surface of the replaced concrete base course shall be left rough. The slab depth shall be equivalent to the existing concrete pavement or base course, but in no case less than 6-inches thick. Transverse and longitudinal joints removed from concrete pavement shall be replaced at the same locations and to the same types and dimensions as those removed. Concrete pavements or concrete base courses shall be reinforced.

- D. Asphaltic Concrete Base, Bituminous Tack Coat, Binder, and Surface Course: Asphaltic concrete base, tack coat, and surface course construction shall conform to Georgia Department of Transportation Standard Specifications, Section 400. The pavement mixture shall not be spread until the designated surface has been previously cleaned and prepared; surface is intact, firm, properly cured, dry; and the tack coat has been applied. Apply and compact the base in maximum layer thickness by asphalt spreader equipment of design and operation approved by the Engineer/Owner. After compaction, the black base shall be smooth and true to established profiles and sections. Apply and compact the surface course in a manner approved by the Engineer/Owner. Immediately correct any high, low, or defective areas by cutting out the course, replacing with fresh hot mix, and immediately compacting to conform and thoroughly bond to the surrounding area.
- E. Surface Treatment Pavement: Bituminous penetration surface treatment pavement shall be replaced with a minimum thickness of 1-inch conforming to Section 424, Georgia Department of Transportation Standard Specifications.
- F. Gravel Surfaces: Existing gravel road, drive, and parking area replacement shall meet the requirements of graded aggregate base course. This surfacing may be authorized by the Engineer/Owner as a temporary surface for paved streets until replacement of hard surfaced pavement is authorized.
- G. Temporary Measures: During the period between pavement removal and complete replacement of permanent pavement, maintain highways, streets, and roadways by the use of steel running plates anchored to prevent movement. The backfill above the pipe shall be compacted, as specified in Section 02200/02225 of these Specifications, up to the existing pavement surface to provide support for the steel running plates. All pavements shall be replaced within seven calendar days of their removal.

## **PART 3 – EXECUTION**

### **3.01 LOCATIONS FOR PAVEMENT REPLACEMENT**

- A. Pavement Replacement:
  - 1. All trenches for roadway crossings
  - 2. All trench longitudinal installations
  - 3. All locations where pavement must be removed or is damaged in the execution of the Work
- B. "Graded Aggregate" pavement repair shall be used only where approved by the Engineer/Owner.

### **3.02 REMOVING PAVEMENT**

- A. General: Remove existing pavement as necessary for installing the pipeline and appurtenances. Existing pavement and sub-base shall be removed for trench construction and pipe installation. Existing pavement on either side of the trench construction area shall be

completely milled from edge of pavement to edge of pavement in order to replace pavement from edge of pavement to edge of pavement for all disturbed paved areas.

- B. Remove and replace pavement and base to outer edge of existing pavement if existing pavement width is 24-inches or less from side of trench to outer edge of pavement.
- C. Marking: Before removing any pavement, mark the pavement neatly paralleling pipelines and existing street lines. Space the marks the width of the trench.
- D. Saw Cutting: Under no circumstances shall the Contractor be allowed to remove concrete or asphalt without prior saw cutting. Asphalt pavement shall be saw cut along the marks using suitable equipment. The saw cutting shall be deep enough to produce an even, straight cut.
- E. Breaking: Break asphalt pavement along the marks using pavement shearing equipment, jack hammers or other suitable tools. Break concrete pavement along the marks by scoring with a rotary saw and breaking below the score by the use of jack hammers or other suitable tools.
- F. Machine Pulling: Do not pull pavement with machines until the pavement is completely broken and separated from pavement to remain.
- G. Damage to Adjacent Pavement: Do not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, remove and replace the damaged pavement.
- H. Sidewalks and Patios: Remove and replace any sidewalks or patios disturbed by construction for their full width and to the nearest undisturbed joint.
- I. Curbs and Gutters: Tunnel under or remove and replace any curb and/or gutter, which is disturbed by construction to the nearest undisturbed joint.
- J. Steps: Completely remove and replace any steps, constructed of concrete or special surfaces, which are disturbed by construction.

### **3.03 REPLACING PAVEMENT**

- A. Preparation of Subgrade: Upon completion of backfilling and compaction of the backfill, arrange to have the compaction tested by an independent testing laboratory approved by the Engineer/Owner. After compaction testing has been satisfactorily completed, replace all pavements, sidewalks, and curbs removed.
  - 1. The existing street pavement or surface shall be removed or milled along the lines of the work from edge of pavement to edge of pavement. Pavement shall be replaced from edge of existing pavement to edge of existing pavement.
  - 2. Trench backfill shall be compacted for the full depth of the trench as specified in Section 02225 of these Specifications.
  - 3. Temporary trench backfill along streets and driveways shall include 6-inches of crushed stone or cherty clay as a temporary surfacing of the trenches. This temporary surface shall be maintained carefully at grade, dust-free, by the Contractor until the

backfill of the trench has thoroughly compacted in the opinion of the Engineer/Owner, and permission is granted to replace the street pavement.

4. When temporary crushed stone or chert surface is considered by the Engineer/Owner to be sufficient surface for gravel pavement, the surface shall be graded smooth and to an elevation that will make the final permanent surfacing level with the adjacent surfacing that was undisturbed.

**B. Pavement Replacement:**

1. Prior to replacing pavement, make a final cut in concrete pavement 12-inches back from the edge of the damaged pavement with a concrete saw. Remove asphalt pavement 12-inches back from the edge of the damaged pavement using pavement shearing equipment, jackhammers or other suitable tools.
2. Replace and repave all street and roadway pavement from edge of pavement to edge of pavement as shown on the Drawings; as shown on the details contained herein. Replace driveways, sidewalks, and curbs with the same material, to nearest existing undisturbed construction joint and to the same dimensions as those existing.
3. If the temporary crushed stone or chert surface is to be replaced, the top 6-inches shall be removed and the crushed stone surfacing for unpaved streets or the base for the bituminous surface shall be placed.
4. Following this preparation, the chert or crushed stone base shall be primed with a suitable bituminous material and surfaced with the proper type of bituminous surface treatment.
5. Where the paved surface is to be replaced with asphaltic concrete pavement, concrete pavement or with a concrete base and a surface course, the temporary chert or crushed stone surface and any necessary backfill material, additional existing paving and new excavation shall be removed to the depth and width shown on the Drawings/details. All edges of the existing pavement shall be cut to a straight, vertical edge. Care shall be used to get a smooth joint between the old and new pavement and to produce an even surface on the completed street. Concrete base slabs and crushed stone bases, if required, shall be placed and allowed to cure for three days before bituminous concrete surface courses are applied. Expansion joints, where applicable, shall be replaced in a manner equal to the original joint.
6. Where driveways or roadways, constructed of specialty type surfaces, e.g., brick or stone are disturbed or damaged, these driveways and roadways shall be restored utilizing similar materials. Where the nature of these surfaces dictate, a specialty contractor shall be used to restore the surfaces to their previous or better condition. Special surfaces shall be removed and replaced to the limits to which they were disturbed.

**C. Pavement Resurfacing:**

1. After all pipe line installations are complete and existing pavement has been removed or milled from edge of pavement to edge of pavement, apply tack coat and surface course as specified.
  2. Resurfacing limits shall be perpendicular to the road centerline. The limits of resurfacing shall be 10 feet beyond the edge of the pavement replacement on the main road being resurfaced.
  3. Where pavement damaged with potholes, the Contractor shall remove all existing loose pavement material and fill the hole with black base, as specified, to the level of the existing pavement.
- D. Pavement Striping: Pavement striping removed or paved over shall be replaced with the same type, dimension, and material as original unless directed otherwise by the Engineer/Owner.
- E. Installation of Traffic Plates: Following completion of sewer works including backfilling but prior to replacement of pavement, steel plates shall be used to temporarily carry vehicular traffic as follows:
1. All Steel plates shall meet ASTM structural specifications having “A36” designation with minimum yield stress of 36 ksi (ksi = kilopounds per square inch).
  2. Asphaltic patching material (cold mix) shall be used to secure the steel plate around its edges. Alternatively, all sides of the plate or plates must be secured to the ground surface with A.R.E.A. standard railroad spikes. No spikes shall be left lying on the highway.
  3. Trench must be backfilled to within eight (8) inches from top of existing pavement prior to placing the steel plate.
  4. No plate is allowed over a trench having a width greater than 48 inches when adequate soil conditions are present. When the trench is greater than 48 inches, the entire lane containing the trench shall be closed. Before closing a lane, a “Lane Closure Permit” must be obtained from the City of Atlanta, Department of Public Works, Bureau of Traffic and Transportation. At least 24 hours prior notification is required for the “Lane Closure Permit”.
  5. All necessary warning signs, barricades, and lights shall be adequately provided and placed for the safety of the public and in full conformity with the MUTCD at no additional cost to the City. Before closing a “Lane Closure Permit” must be obtained from the City of Atlanta. The Department of Public Works, Bureau of Traffic and Transportation must be notified at least 24 hours in advance.
  6. The width of a trench is measured normal to the length of the trench. The largest reading of the measurements is the determining factor for width. For a series of steel plates on any continuous trench, all plates must have the same thickness.
  7. Trench must be fully covered with a minimum of twelve (12) inches of asphalt taper on all sides of the plate.



8. Upon the completion of the work, the existing surface shall be cleaned, and pavement restored to the City of Atlanta standards.

### **3.04 SIDEWALK, CURB, AND GUTTER REPLACEMENT**

#### Construction:

1. All concrete sidewalks, curbs, and gutters shall be replaced with concrete.
  2. See Section 02530 for concrete walk construction.
  3. See Section 02532 for concrete curb and gutter construction.
- Preformed joints shall be 1/2-inch thick, conforming to the latest edition of AASHTO M59 for sidewalks and AASHTO M 123 for curbs.
  - Forms for sidewalks shall be of wood or metal, shall be straight and free from warp, and shall be of sufficient strength, when in place, to hold the concrete true to line and grade without springing or distorting.
  - Forms for curbs shall be metal and of an approved section. They shall be straight and free from distortions, showing no vertical variation greater than 1/8-inch in 10 feet and no lateral variation greater than 1/4-inch in 10 feet from the true plain surface on the vertical face of the form. Forms shall be of the full depth of the structure and constructed such to permit the inside forms to be securely fastened to the outside forms.
  - Securely hold forms in place true to the existing lines and grades.
  - Wood forms may be used on sharp turns and for special sections, as approved by the Owner. Where wooden forms are used, they shall be free from warp and shall be the nominal depth of the structure.
  - All mortar and dirt shall be removed from forms and all forms shall be thoroughly oiled or wetted before any concrete is deposited.
- A. When a section is removed, the existing sidewalk, curb, or gutter shall be cut to a neat line, perpendicular to both the centerline and the surface of the concrete slab. Existing concrete shall be cut along the nearest existing construction joints; if such joints do not exist, the cut shall be made at minimum distances shown on the Drawings
  - B. Existing concrete sidewalks, curbs, and gutters that have been cut and removed for construction purposes shall be replaced with the same width and surface as the portion removed. Sidewalks shall have a minimum uniform thickness of 4-inches. The new work shall be neatly jointed to the existing concrete so that the surface of the new work shall form an even, unbroken plane with the existing surfaces

- C. The subgrade shall be formed by excavating to a depth equal to the thickness of the concrete, plus 2-inches. Subgrade shall be of such width as to permit the proper installation and bracing of the forms. Subgrades shall be compacted by hand tamping or rolling. Soft, yielding or unstable material shall be removed and backfilled with satisfactory material. Place 2-inches of porous crushed stone under all sidewalks, curbs, and gutters and compact thoroughly, then finish to a smooth, unyielding surface at proper line, grade, and cross-section.
- D. Joint for Curbs and Gutters:
1. Joints shall be constructed to match existing and as specified in Section 02532. Construct joints true to line with their faces perpendicular to the surface of the structure and within 1/4-inch of their designated position.
  2. Thoroughly spade and compact the concrete at the faces of all joints filling all voids.
  3. Install expansion joint materials at the point of curve at all street returns. Install expansion joint material behind the curb at abutment to sidewalks and adjacent structures.
  4. Place contraction joints every 10 feet along the length of the curbs and gutters. Form contraction joints using steel templates or division plates which conform to the cross section of the structure. Leave the templates in place until the concrete has set sufficiently to hold its shape but remove them while the forms are still in place. Contraction joint templates or plates shall not extend below the top of the steel reinforcement or they shall be notched to permit the reinforcement to be continuous through the joint. Contraction joints shall be a minimum of 1-1/2-inches deep.
- E. Expansion joints shall be required to replace any removed expansion joints or in new construction. Expansion joints shall be true and even, shall present a satisfactory appearance, and shall extend to within 1/2-inch of the top of finished concrete surface.
- F. Finishing:
1. Strike off the surface with a template and finish the surface with a wood float using heavy pressure, after which, contraction joints shall be made, and the surface finished with a wood float or steel trowel.
  2. Finish the face of the curbs at the top and bottom with an approved finishing tool of the radius indicated on the Drawings.
  3. Finish edges with an approved finishing tool having a 1/4-inch radius.
  4. Provide a final broom finish by lightly combing with a stiff broom after troweling is complete.
  5. The finished surface shall not vary more than 1/8-inch in 10 feet from the established grade.
- G. Driveway and Sidewalk Ramp Openings:

1. Provide driveway openings of the widths and at the locations directed by the Engineer/Owner.
  2. Provide sidewalk ramp openings in conformance with the applicable regulations and as directed by the Engineer/Owner.
- H. Concrete shall be suitably protected from freezing and excessive heat. It shall be kept covered with burlap or other suitable material and kept wet until cured. Provide necessary barricades to protect the work. All damage caused by people, vehicles, animals, rain, the Contractor's operations and the like shall be repaired by the Contractor, at no additional expense to the City.

### **3.05 MAINTENANCE**

- A. The Contractor shall maintain the surfaces of roadways built and pavements replaced until the acceptance of the Project. Maintenance shall include replacement, scraping, reshaping, wetting, and re-rolling as necessary to prevent raveling of the road material, the preservation of reasonably smooth surfaces and the repair of damaged or unsatisfactory surfaces, to the satisfaction of the Engineer. Maintenance shall include sprinkling as may be necessary to abate dust from the gravel surfaces.

### **3.06 SUPERVISION AND APPROVAL**

- A. Pavement restoration shall meet the requirements of the regulatory agency responsible for the pavement. Obtain agency approval of pavement restorations before requesting final payment.
- B. Obtain the Engineer's/Owner's approval of restoration of pavement, such as private roads and drives that are not the responsibility of a regulatory agency.
- C. Complete pavement restoration as soon as possible after backfilling.
- D. Failure of Pavement: Should any pavement restoration or repairs fail or settle during the life of the Contract, including the bonded period, promptly restore or repair defects.
- E. Prior to acceptance and approval of any asphaltic concrete binder and/or topping which is installed for the purpose of City maintenance, a representative of the City of Atlanta's Department of Traffic and Transportation may require one or all of the following tests: 1) coring, 2) extraction, 3) compaction, 4) density. The frequency and location of these tests will be left up to the discretion of the Inspector/Engineer.

### **3.07 CLEANING**

- A. The Contractor shall remove all surplus excavation materials and debris from the street surfaces and rights-of-way and shall restore street, roadway, or sidewalk surfacing to its original condition.

### **3.08 TRAFFIC CONTROL**

- A. Refer to General Conditions and Supplemental Conditions for Traffic Control and Temporary Control of Construction Operations for requirements.

**+++ END OF SECTION +++**

**SECTION 02616**  
**POLYETHYLENE ENCASUREMENT OF DUCTILE IRON PIPE**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall furnish all labor, materials, equipment and incidentals to furnish and install polyethylene encasement of ductile iron water mains.
- B. The polyethylene encasement shall prevent contact with the pipe and the surrounding backfill and bedding material, but it is not intended to be completely airtight or watertight.

**1.02 SUBMITTALS**

- A. Complete shop drawings, samples and engineering data shall be submitted to the Engineer in accordance with the requirements of the General Conditions of the Contract Documents. In addition, the following specific information shall be provided:
  - 1. Certificate of compliance with ANSI/AWWA C105/A21.5

**1.03 QUALITY ASSURANCE**

- A. Reference Standards: The Contractor shall comply with the applicable provisions and recommendations of the latest editions of the following standards, except as otherwise shown on the Drawings or specified herein.
  - 1. ANSI/AWWA C105/A21.5 – Polyethylene Encasement for Ductile-Iron Pipe Systems
  - 2. ANSI/AWWA C600 – Installation of Ductile-Iron Water Mains and Their Appurtenances.
  - 3. ASTM D149 – Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies.
  - 4. ASTM D882 – Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
  - 5. ASTM D1709 – Standard Test Methods for Impact Resistance of Thin Plastic Film by the Free-Falling Dart Method.
  - 6. ASTM D1992 – Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method.
  - 7. ASTM D4976 – Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.

**PART 2 PRODUCTS**

**2.01 POLYETHYLENE FILM**

A. Polyethylene film shall be shall be manufactured in accordance with AWWA/ANSI C105/A21.5.

B. Linear low-density polyethylene film.

1. Linear low-density polyethylene film shall be manufactured of virgin polyethylene material in accordance with ASTM D4976.

2. Physical properties of finished film:

Tensile Strength	3,600 psi*
Elongations	800 percent*
Dielectric Strength	800 V/mil thickness minimum
Impact Resistance	600 g minimum
Propagation Tear Resistance	2,550 grams force minimum*

\* Minimum in machine and transverse direction

3. Linear low-density polyethylene film shall have a minimum thickness of 0.008-inches (8 mil).

C. High-density cross laminated polyethylene film.

1. High-density cross laminated polyethylene film shall be manufactured of virgin polyethylene material in accordance with ASTM D4976.

2. Physical properties of finished film:

Tensile Strength	6,300 psi*
Elongations	100 percent*
Dielectric Strength	800 V/mil thickness minimum
Impact Resistance	800 g minimum
Propagation Tear Resistance	250 grams force minimum*

\* Minimum in machine and transverse direction

3. High-density cross laminated polyethylene film shall have a minimum thickness of 0.004-inches (4 mil).

D. Polyethylene film to be supplied shall be black (weather resistant) in color.

E. Tube or sheet width sizes shall be as shown on the following table:

Pipe Diameter (inches)	Polyethylene Width Flat Tube (inches)	Polyethylene Width Sheet (inches)
3	14	28
4	14	28
6	16	32
8	20	40
10	24	48
12	27	54
14	30	60
16	34	68
18	37	74
20	41	82
24	54	108
30	67	134
36	81	162
42	81	162
48	95	190
54	108	216
60	108	216
64	121	242

- F. The polyethylene film supplied shall be clearly marked every two feet along its length with the following information in one-inch high (minimum) letters:

Manufacturer's name or trademark  
 Year of manufacture  
 ANSI/AWWA C105/A21.5  
 Minimum film thickness and material type  
 Applicable range of nominal pipe diameter size(s)  
 Warning – Corrosion Protection – Repair any damage

- G. Polyethylene adhesive tape 1-1/2-inches wide shall be used to seal joints.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. The Contractor shall remove all lumps of clay, mud, cinders, etc. on the pipe surface before installation of the polyethylene encasement. During installation, soil or embedment material shall not be trapped between the pipe and the polyethylene.

- B. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings and to prevent damage to the polyethylene caused by backfilling operations. Overlaps shall be secured with adhesive tape.
- C. For installation below the water table tube form polyethylene shall be used with both ends sealed with tape or plastic tie straps at the joint overlap. Circumferential wraps of tape shall be placed at 2- foot intervals along the barrel of the pipe to minimize the space between the polyethylene and the pipe.
- D. Installation on ductile iron pipes shall be in accordance with methods A, B or C as outlined in ANSI/AWWA C105/A21.5 and as specified below. Methods A and B are for use with polyethylene tubes and Method C is for use with polyethylene sheets.

1. Method A:

- a. Cut polyethylene tube to a length approximately 2-feet longer than the pipe section. Slip the tube around the pipe, centering it to provide 1-foot overlap on each adjacent pipe section and bunching it accordion-fashion lengthwise until it clears the pipe ends.
- b. Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe. A shallow bell hole must be made at the joints to facilitate installation of the polyethylene tube.
- c. After assembling the pipe joint, make the overlap of the polyethylene tube. Pull the bunched polyethylene from the preceding length of pipe, slip secure it in place. Then slip the end of the polyethylene from the new pipe section over the end of the first wrap until it overlaps the joint at the end of the preceding length of pipe. Secure the overlap in place. Take up the slack along the barrel of the pipe, securing the fold at quarter points. Proceed to the next section of pipe in the same manner.

2. Method B:

- a. Cut polyethylene tube to a length approximately 1-foot shorter than that of the pipe section. Slip the tube around the pipe, centering it to provide 6-inch of bare pipe at each end. Take up the slack width at the top to the pipe for a snug but not tight fit along the barrel of the pipe securing the fold at quarter points. Secure the ends with polyethylene tape.
- b. Before making up a joint, slip a 3-foot length of polyethylene tube over the end of the preceding pipe section, bunching it accordion-fashion lengthwise. Alternatively, place a 3-foot length of polyethylene sheet in the trench under the joint to be made. After completing the joint, pull the 3-foot length of polyethylene over or around the joint. Overlapping the polyethylene previously installed on each end snug and secure with polyethylene tape. A shallow bell hole is necessary and shall be made at joints to facilitate the installation of the polyethylene tube or sheet.

3. Method C:

- a. Cut polyethylene sheet to a length approximately 2-feet longer than that of the pipe section. Center the cut length to provide a 12-inch overlap on each adjacent pipe section, bunching



it until it clears the pipe ends. Wrap the polyethylene around the pipe so that it circumferentially overlaps the top quadrant of the pipe. Secure the cut edge of the polyethylene sheet at intervals of approximately 3-feet.

- b. Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe. A shallow bell hole must be made at the joints to facilitate installation of the polyethylene. After completing the joint, make the overlap and secure the ends as specified in Paragraph 3.01B of this Section.
- E. Care shall be taken when installing backfill to prevent damage to the wrapping.

### **3.02 REPAIRS**

- A. Repair cuts, tears, punctures, or damage to polyethylene with adhesive tape or with a short length of polyethylene sheet, or with a tube cut open, wrapped around the pipe to cover the damaged area, and secured in place.

### **3.03 OPENINGS IN ENCASEMENT**

- A. Provide openings for blow-offs, air and vacuum valves, and similar appurtenances by cutting an X in the polyethylene and temporarily folding back the film. After the appurtenance is installed, tape the slack securely to the appurtenance, and repair the cut and any other damaged areas in the polyethylene with tape.
- B. Direct service taps may also be made through the polyethylene with any resulting damaged areas being repaired as described above. To make direct service taps, apply multiple wraps of adhesive tape completely around the polyethylene-encased pipe to cover the area where the tapping machine and chain will be mounted. After the tapping machine is mounted, the corporation stop shall be installed directly through the tape and polyethylene. After the direct tap is completed, the entire circumferential area shall be inspected for damage and repaired if needed.

### **3.04 JUNCTIONS BETWEEN WRAPPED AND UNWRAPPED PIPE**

- A. Where polyethylene-wrapped pipe joins an adjacent pipe that is not wrapped, extend the polyethylene wrap to cover the adjacent pipe for a distance of at least 3-feet. Secure the end with circumferential turns of adhesive tape.
- B. Service lines of dissimilar metals shall be wrapped with polyethylene or a suitable dielectric tape for a clear minimum distance of 3-feet away from the ductile iron pipe.

### **3.05 BACKFILL FOR POLYETHYLENE-WRAPPED PIPE**

- A. Use the same backfill as that specified for pipe without polyethylene wrap, exercising care to prevent damage to the polyethylene wrapping when placing backfill.

**+++ END OF SECTION 02616 +++**

**SECTION 02645  
FIRE HYDRANTS**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall furnish all labor, materials and equipment to install and test fire hydrants as specified herein and as shown on the Drawings.
- B. Fire hydrants shall be Mueller Super Centurion 250 A-423, modified to meet the City of Atlanta standard requirements as specified in this section. In order to insure compatibility with the City's existing inventory of hydrants and spare parts and standardized maintenance procedures, no other hydrants shall be acceptable. Existing hydrants shall be salvaged for spare parts to repair existing hydrants, which do not need to be replaced.

**1.02 SUBMITTALS**

Submittals shall be made in accordance with the requirements of 01300 Submittals. In addition the following specific information shall be provided:

- 1. Shop Drawings and Product Data
- 2. Certificate of compliance with the requirements of ANSI/AWWA C502.
- 3. Records of standard tests.

**1.03 QUALITY CONTROL**

- A. Reference Standards: The Contractor shall comply with the applicable provisions and recommendations of the latest editions of the following standards, unless indicated otherwise on the Drawings or specified herein.
  - 1. ANSI B18-2.1 - Standard specification for Square and Hex Bolt Screws, including Askew Head Bolts, Hex Cap Screws and Lag Screws
  - 2. ANSI/AWWA C110/A21.10 - Ductile Iron and Gray Iron Fittings
  - 3. ANSI/AWWA C111/A21.11 - Rubber Gaskets Joints for Ductile Iron Pressure Pipe and Fittings.
  - 4. ANSI/AWWA C151/A21.51 - Ductile Iron Pipe, Centrifugally Cast
  - 5. ANSI/AWWA C502 - Dry Barrel Fire Hydrants.

6. ANSI/AWWA C550 – Protective Epoxy Interior Coatings for Valves and Hydrants
  7. ANSI/AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
  8. AWWA M17 - Installation, Field Testing and Maintenance of Fire Hydrants.
- B. Testing and Inspection: The Contractor shall perform all tests and inspections required by this specification unless otherwise stated. The Contractor may use the manufacturer's facility or any independent laboratory acceptable to the Owner. The Owner reserves the right to perform any of the test and inspection requirements where such tests and inspections are needed to further determine compliance with this specification.
- C. Samples, visual tests and inspections may be required by the Owner. These shall be performed and witnessed in the presence of the City's Authorized Representative at no extra cost. Failure to comply with this provision may cause rejection of the hydrants.

## **PART 2 PRODUCTS**

### **2.01 FIRE HYDRANTS**

- A. Fire hydrants shall be three way, post type, dry top traffic design model with compression main valve opening against and closing in the direction of normal water flow. Hydrant shall be designed for 250 psi working pressure.
- B. Fire hydrants shall conform to the requirements of ANSI/AWWA C502.
- C. Manufacture:
1. Hydrant shall have the name of the manufacturer, the year of manufacture, operating pressure and valve size in legible raised letters cast on the barrel. Hydrant shall also have the letters "AWB" cast on the barrel for identification purposes.
  2. Dry Top Bonnet:
    - a. Bonnet shall be constructed with a moist proof lubrication chamber which encloses the operating threads and which provides automatic lubrication of the threads and bearing surfaces each time the hydrant is operated.
    - b. Bonnet assembly shall be comprised of a top O-ring serving as a dirt and moisture barrier and a lower O-ring which will serve as a pressure seal. The O-ring packing shall be included in an oil filled reservoir so that all operating parts are enclosed in a sealed oil bath.
    - c. O-rings shall be Buna N in accordance with ASTM D2000.

An oil filler plug shall be provided in the bonnet to permit checking of the oil level and adding oil when required.

3. Operating Nut:

- a. Operating nut shall be ASTM B584 bronze, 7/8 - 1 inch tapered square nut with tamper-proof device.
- b. The tamper proof device shall be a ductile iron combination hold-down nut and operating nut shield to eliminate operation of hydrant with wrenches other than a special socket-type wrench. Arrow shall be cast on the periphery of the bonnet indicating direction of the operation for opening the hydrant.

4. Nozzles:

- a. Fire hydrant shall have two (2) 2-1/2 inch hose connections, 120 degrees apart and one (1) 4-1/2 inch pumper connection, with National Standard threads. Nozzles to be made of bronze and have interlocking lugs to prevent blowout.
- b. Nozzle caps nuts shall have the same cross section as the operating nut on the bonnet. Nozzle caps shall be secured to the fire hydrant with non-kinking type steel chain with chain loop on cap ends to permit free turning of caps.
- c. Outlet Nozzle Threads shall conform to the National Fire Protection Association (NFPA) for National Standard Fire Hose Coupling Screw Threads.

5. Main Valve:

- a. The internal main valve diameter shall be a minimum of 5 1/4- inches.
- b. The valve shall be designed to open against pressure and close with pressure.
- c. Valve shall be made of synthetic rubber and formed to fit the valve seat accurately.
- d. The valve shall be reversible.

6. Main Valve Seat:

- a. The main valve seat shall be ASTM B584 bronze and its assembly into the hydrant shall involve bronze to bronze thread engagement.
- b. Two (2) O-ring seals shall be provided as a positive pressure seal between the bronze seat ring and the shoe.

- c. Valve assembly pressure seals shall be obtained without the employment of torque or torque compressed gaskets.
  - d. The hydrant shall be designed to allow the removal of all operating parts through the hydrant barrel by means of a single disassembly wrench without excavating.
7. Traffic Design:
- a. Hydrant barrel section shall be connected at the ground line in a manner that will prevent damage to the lower part of the hydrant when struck by a vehicle.
  - b. Main valve rod section shall be connected at the ground line by a frangible coupling.
  - c. The barrel and ground line safety construction shall be such that the hydrant nozzles can be rotated to any desired position without disassembling or removing the top operating components and top section of the hydrant barrel.
8. Drain:
- a. The drain mechanism shall be designed to operate with the operation of the main valve and shall allow a momentary flushing of the drain ports.
  - b. A minimum of two (2) internal positive opening drain valves and two (2) external bronze lined drain ports shall be required in the main valve assembly to drain the hydrant barrel.
  - c. The drain valve facings shall be made of either rubber or polyethylene material and retained in position with stainless steel screws.
9. Shoe:
- a. Shoe shall be ductile iron, ASTM A536, grade 65-45-12. Interior of shoe shall be epoxy coated in accordance with ANSI/AWWA C550.
  - b. Main valve travel stop shall be an integral part of the shoe permitting full opening of the hydrant and positive stop without over travel of the stem.
10. Barrel Extension Sections: Barrel extension sections shall be available in six (6) inch increments complete with rod, extension, coupling and necessary flanges gaskets and bolts so that extending the hydrant can be accomplished without excavating.
11. Nuts and Bolts: Nuts and bolts shall be corrosion resistant. Bolt material shall develop the physical strength requirements of ASTM A307 and may have either regular or square heads with dimensions conforming to ANSI B18.2.1 Nuts, bolts

and studs shall be cadmium-plated (ASTM A165, grade NS) or zinc-coated (ASTM A153 or ASTM B633), or rust-proofed by a process acceptable to the City's Authorized Representative.

12. O-Rings: O-rings shall be rubber and conform to the requirements of ASTM 2000.
13. Markings: Bury mark of fire hydrant shall be cast on the barrel of the hydrant. The bury mark shall provide not less than 18-inches of clearance from the centerline of the lowest nozzle to the ground.
14. Direction of Opening: Hydrant shall be designed to open "right" or clockwise.
15. Joint Assemblies: Complete joint assemblies consisting of glands, gaskets, bolts and nuts shall be furnished.
16. Coating and Painting:
  - a. All iron parts of the hydrant, inside and outside, shall be cleaned and all surfaces shall be coated with a two part epoxy. Epoxy shall be Amercoat 370.
  - b. The outside of the hydrant above ground level shall be cleaned and thereafter shop painted with two (2) coats of Sherwin Williams Quick Dry Alkyd Enamel, Mueller paint code RP. Color shall be aluminum.
17. Lubrication: All bronze, threaded contact moving parts shall, during shop assembly, be lubricated and protected by a coating of rustproof compound to prevent damage in shipment and storage.

## **PART 3 EXECUTION**

### **3.01 INSPECTION**

Prior to installation, inspect all hydrants for direction of opening, nozzle threading, operating nut and cap nut dimensions, tightness of pressure containing bolting, cleanliness of inlet elbow, handling damage and cracks. Defective hydrants shall be corrected or held for inspection by the City's Authorized Representative.

### **3.02 HYDRANT INSTALLATION**

- A. Hydrants shall be placed at the locations indicated on the Drawings. The Contractor shall install proper "bury" hydrants or shall use, at no cost to the City, proper length extensions to ensure that each fire hydrant is installed in accordance with the manufacturer's recommendation and the requirements of these Specifications.
- B. Hydrants shall stand plumb with pumper nozzle facing the roadway.
- C. Hydrants shall be set to the finished grade with the centerline of the lowest nozzle 18-inches above finished grade.
- D. When placed behind curb, the hydrant barrel shall be set such that the distance from the face of the curb to the edge of the hydrant shall be 21-inches. Where no curb exists, the hydrant shall be set as directed by the City's Authorized Representative.
- E. Fire Hydrants may be installed at designated locations in lieu of air relief valves as authorized by the City's Authorized Representative.

### **3.03 CONNECTION TO WATER MAIN**

- A. Fire hydrant shall be connected to the water main with a ductile iron branch connection. Gate valves shall be used on fire hydrant branches as shown on the Drawings.
- B. The connection of the hydrant to the water main shall be through a ductile iron hydrant tee or a welded outlet for main lines. Tapping sleeves shall not be allowed.
- C. Hydrants shall be attached to the water main by the following method:
  - 1. For water mains 20 inches and smaller, the isolation valve shall be attached to the water main by connecting the valve to the hydrant tee.
  - 2. For water mains 24 inches and larger, the isolation valve shall be attached to the water main by providing an anchor coupling between the valve and welded outlet or hydrant tee.
  - 3. The isolation valve shall be attached to the hydrant by providing an anchor coupling

between the valve and hydrant, if the hydrant and valve are less than two feet apart. Otherwise, provide mechanical joint ductile iron pipe with retainer glands on the hydrant and valve.

- D. Pipe connecting the fire hydrant to the water main shall be 6-inch diameter class 350 ductile iron pipe meeting the requirements of Section 02665, Water Mains and Accessories. Anchor coupling shall be as specified in Section 02665.
- E. Anchoring and Bracing: The shoe of each fire hydrant and the hydrant tee shall be braced against unexcavated earth at the ends of the trench with poured concrete thrust blocks as shown on the Drawings and detail W-34.
- F. Drainage: No. 57 stone shall be placed around the shoe of the fire hydrant for a minimum distance of 18-inches below the drain ports, 6-inches above the drain ports, 15-inches laterally on each side of the shoe and 24-inches from the back of the shoe towards the main.
- G. Provide resistance to avoid transmitting shock moment to the lower barrel and inlet connection by pouring a concrete collar 6-inches thick with a diameter of 24 inches at the ground line around the hydrant barrel.

**3.04 FIELD PAINTING**

- A. After hydrant is installed and approved by the City’s Authorized Representative, the Contractor shall touch up all exposed hydrant surfaces as directed by the City’s Authorized Representative. Touch up paint shall be as specified in paragraph. 2.01 C 16 of this Section.
- B. The bonnet of each hydrant shall be painted in one of the following colors to indicate the diameter of the water main that the hydrant is connected to:

Water Main Diameter (inches)	Hydrant Bonnet Color
6 - 8	Silver
10 - 12	Yellow
16 and larger	Green

- C. Hydrants that are connected to non-potable water mains (i.e. raw water mains) shall be painted violet (light purple).
- D. Private hydrants shall be painted red.



### **3.05 TESTING**

All fire hydrants shall be tested in strict accordance with the requirements of ANSI/AWWA C502, with no additional cost to the City. A certificate of compliance will be furnished to the City's Authorized Representative.

### **3.06 REMOVAL AND SALVAGE OF EXISTING HYDRANTS**

- A. Remove all existing hydrants shown on the Drawings to be removed. Hydrants shall be removed as follows:
1. Disconnect hydrant from barrel section.
  2. Saw cut or remove barrel section to a minimum of 12-inches below finished grade.
  3. Remove hydrant valve cover and concrete pad, valve box and extension stem. Insure that valve is closed. Valve shall remain in place.
  4. Deliver removed hydrant, valve cover, valve box and extension stem to the City's storage yard as directed by the City's Authorized Representative.
- B. Backfill excavations and compact as specified in Section 02225 and restore area as required and as directed by the City's Authorized Representative.

**+++ END OF SECTION 02645 +++**

**SECTION 02647**  
**MANHOLES FRAME AND COVER AND VALVE COVER ADJUSTMENT**

**PART 1 GENERAL**

**1.01 SCOPE**

The Contractor shall provide all labor, materials, equipment and incidentals required to adjust existing manhole frames and covers and valve covers to finished grade as specified herein.

**1.02 SUBMITTALS**

In addition, the following specific information shall be provided:

1. Manufacturer's data for pre-mix (bag) concrete
2. Description of the proposed method of concrete curing.

**1.03 QUALITY CONTROL**

Reference Standards: The Contractor shall comply with the applicable provisions and recommendations of the latest editions of the following standards, except as otherwise shown on the Drawings or specified herein.

1. ASTM C270 - Standard Specification for Mortar for Unit Masonry
2. ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe using Rubber Gaskets
3. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections
4. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (non-shrink)

**1.04 DESIGN CRITERIA**

- A. The elevation of manhole frame and covers and valve covers will vary with each location. The Contractor shall adjust the top of the manhole frame and cover and valve cover to the finished grade of the pavement or existing ground or higher than the ground surface as directed by the City's Authorized Representative.
- B. For Georgia Department of Transportation (GDOT) milling and resurfacing projects, refer to GDOT Utilities Accommodation Manual (UAM) Chapter 5.4 for recommendations on lowering and raising manholes and other utilities in order to adjust them to the new grades.

**PART 2 PRODUCTS**

**2.01 MANHOLE FRAMES AND COVERS AND VALVE COVERS**

Refer to the City Standard Details in the Appendix.

**2.02 BRICK**

- A. Bricks used to adjust manhole frames to grade shall conform to the requirements of ASTM C32, Grade MS. Bricks shall also conform to the following requirements, unless otherwise approved by the City's Authorized Representative.
- B. All brick shall be new and whole, of uniform standard size, and straight and parallel edges and square corners. Bricks shall be of compact textures, burned hard entirely through, free from injurious cracks and flaws, and shall have a clear ring when struck together. No soft or salmon brick shall be used in any part of the Work. Brick shall be culled after delivery, if required, and no culls shall be used except at such places, to such extent, and under such conditions as may be approved by the City's Authorized Representative.

### **2.03 MORTAR**

- A. Mortar used to adjust manhole frames to grade shall be made of one-part portland cement and two parts clean sand. Cement shall be type 1 and shall conform to ASTM C150. Sand shall meet requirements of ASTM C144.
- B. Mortar shall be prepared only in the quantities needed for immediate use. Mortar which has been mixed for more than thirty (30) minutes or which has set or has been retempered shall not be used in the Work.

### **2.04 GRADE ADJUSTMENT RINGS**

- A. Grade adjustment rings shall be used to adjust manhole frames to grade and shall be precast reinforced concrete conforming to ASTM C478. Rings shall be free of cracks, voids and other defects.
- B. Adjustment rings shall be tested to assure compliance with impact and loading requirements in accordance with AASHTO's Standard Specifications.

### **2.05 PRECAST CONCRETE MANHOLE TOP SECTIONS**

- A. Precast concrete manhole top sections shall conform to the typical manhole details as shown on the Drawings.
- B. Precast manhole section shall be manufactured, tested and marked in accordance with the latest provisions of ASTM C478.
- C. The minimum compressive strength of the concrete for all sections shall be 4,000 psi.
- D. The maximum allowable absorption of the concrete shall not exceed 8 percent of the dry weight.
- E. The circumferential reinforcement in the conical top section shall consists of one (1) line of steel and shall be not less than required by ASTM C478.
- F. Precast manhole section joints shall be offset tongue and groove type, supplied with Tylox Super Seal pre-lubricated gasket as manufactured by Hamilton Kent, RPS lubricated gasket as manufactured by Press-Seal Gasket Corporation or Conseal CS-202 butyl rubber sealant as manufactured by Concrete Sealants, Inc.

- G. Each section of the precast manhole shall have not more than two (2) slots for the purpose of handling and laying. These slots shall be tapered and shall be plugged with rubber stoppers or mortar after installation.
- H. The interior and exterior surfaces of the manhole section shall have a smooth hard finish, and shall be free from cracks, chips, and spalls.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

All activities shall be performed in accordance with the manufacturer's recommendations and regulations established by OSHA. Attention shall be drawn to those safety requirements involving working with scaffolding and entering confined spaces.

### **3.02 ADJUSTMENT OF MANHOLE FRAMES AND COVERS**

- A. The top elevation of manhole frames shall be adjusted to grade unless shown otherwise on the Drawings. A maximum adjustment of twelve (12) inches will be allowed using brick and mortar or grade adjustment rings. Brick used will be in accordance with the requirements of this section.
- B. The cast iron frame for the manhole cover shall be set at the required elevation and properly anchored to the riser section. Where manholes are constructed in paved areas, the top surface of the frame and cover shall be tilted to conform to the exact slope, crown and grade of the existing adjacent pavement.

### **3.03 ADJUSTMENT OF VALVE COVERS**

Valve covers shall be adjusted to grade as directed by the City's Authorized Representative. All components required to adjust the valve box and cover to the required grade will be furnished by the City.

### **3.04 BACKFILL**

The Contractor shall place and compact backfill materials, in the area of excavation surrounding manholes and valve covers in accordance with the requirements of Section 02225, Trench Excavation and Backfill.

### **3.05 CONCRETE PAD AND PRE-CAST RINGS**

After the manhole covers and valve covers have been adjusted to final grade, cast-in-place or precast concrete pads or rings shall be installed around the valve covers as shown on the Standard Details and as directed by the City's Authorized Representative.

### **3.06 CLEANUP**

After the manhole frame and cover and valve cover adjustment work has been completed, the Contractor shall cleanup the area. All excess material and debris not incorporated into the

permanent installation shall be disposed of by the Contractor. Site restoration shall be performed in accordance with the requirements of Section 02575, Removing and Replacing Pavement and Section 02920, Site Restoration.

**+++ END OF SECTION 02647 +++**

**SECTION 02665  
WATER MAINS AND ACCESSORIES**

**PART I GENERAL**

**1.01 SCOPE**

- A. Furnish all labor, materials, equipment and incidentals required for the complete installation of water mains and accessories as shown on the Drawings and as specified herein. The Work of this Section also includes, but is not limited to, hydraulic testing and disinfection of the completed water mains after installation.
- B. This Section includes ductile iron pipe and fittings ranging in size from 4-inches in diameter through 64-inches in diameter.
- C. Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. Latest revisions of all standards are applicable.
- D. Galvanized pipe and fittings shall not be used as any part of the Water Transmission and Distribution System, nor shall it be used to join any appurtenances to the System.

**1.02 QUALITY ASSURANCE**

- A. Reference Standards: The design, manufacturing and assembly of elements of the products herein specified shall comply with the applicable provisions and recommendations of the latest editions of the following standards, except as otherwise shown on the Drawings or otherwise specified.
  - 1. ANSI/AWWA C104/A21.4 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings
  - 2. ANSI/AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings
  - 3. ANSI/AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
  - 4. ANSI/AWWA C115/A21.15 – Flanged Ductile-Iron Pipe with Ductile- Iron or Gray-Iron Threaded Flanges
  - 5. ANSI/AWWA C150/A21.50 - Thickness Design of Ductile-Iron Pipe
  - 6. ANSI/AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast
  - 7. ANSI/AWWA C153/A21.53 – Ductile-Iron Compact Fittings for Water Service
  - 8. ANSI/AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances
  - 9. ANSI /AWS D11.2 – Guide for Welding Iron Castings
  - 10. AWWA C651 – Disinfecting Water Mains

### **1.03 SUBMITTALS**

- A. Submittals shall be made in accordance with the requirements of the General Conditions of the Contract Documents. In addition, the following specific information shall be provided:
  - 1. Product data and engineering data, including shop drawings.
  - 2. Evidence that manufacturers have consistently produced products of satisfactory quality and performance for a period of at least two (2) years.
  - 3. Written certification that all products furnished comply with all applicable requirements of these specifications.
- B. For pipe 24-inches in diameter or greater, submit shop drawings to the Engineer for review showing a complete laying plan of all pipe, including all fittings, adapters, valves and specials along with the manufacturer's drawings and specifications indicating complete details of all items. The pipe details shall include stationing, pipe class or design and supporting computations; and laying schedule which specifies pipe class, class coding, pipe stationing for all changes in grade or horizontal alignment, transition stations for various pipe classes and the limits of each reach of restrained joint pipe. The above shall be submitted to the Engineer for review before fabrication and shipment of these items.

### **1.04 TRANSPORTATION AND HANDLING**

- A. Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. Any materials dropped or dumped will be subject to rejection without additional justification. Pipe handled on skids shall not be rolled or skidded against the pipe on the ground.
- B. Handle pipe, fittings, and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front-end loader. Do not use material damaged in handling. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior coatings or internal lining of the pipe.

### **1.05 STORAGE AND PROTECTION**

- A. Store all pipe which cannot be distributed along the route. Make arrangements for the use of suitable storage areas.
- B. Stored materials shall be kept safe from damage. The interior of all pipe, fittings and other appurtenances shall be kept free from dirt or foreign matter at all times.
- C. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tier shall be kept off the ground on timbers, rails or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. At least two rows of timbers shall be placed between tiers and chocks, affixed to each other in order to prevent movement. The timbers shall be large enough to prevent contact between the pipe in adjacent tiers.

- D. Stored mechanical and push-on joint gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.
- E. Mechanical joint bolts shall be handled and stored in such a manner that will ensure proper use with respect to types and sizes.

**1.06 WATER MAIN LOCATION**

- A. The minimum depth of cover over the pipe shall be four (4) feet and the maximum cover shall be five (5) feet. Any deviations must be approved by the Engineer.
- B. The installation of the water main parallel to another utility in the same vertical plane is not permitted, i.e., “stacking of utilities is not permitted.

**PART 2 PRODUCTS**

**2.01 DUCTILE IRON PIPE**

- A. Ductile iron pipe shall be manufactured in accordance with ANSI/AWWA C151/A21.51. All pipe, except specials, shall be furnished in nominal lengths of 18 to 20 feet. Sizes will be as shown on the Drawings. All pipe shall have a minimum pressure rating as indicated in the following table and corresponding minimum wall thickness, unless otherwise specified or shown on the Drawings:

<b>Pipe Sizes (inches)</b>	<b>Pressure Class (psi)</b>
4 - 12	350
14 - 18	350
20	300
24	250
30 - 64	200

- B. Flanged pipe minimum wall thickness shall be equal to Special Class 53. Flanges shall be furnished by the pipe manufacturer.
- C. Fittings shall be ductile iron and shall conform to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 with a minimum rated working pressure of 250 psi.
- D. Joints
  - 1. Unless shown or specified otherwise, joints shall be push-on or restrained joint type for pipe and standard mechanical, push-on or restrained joints for fittings. All pipe and fittings attached to bridge structures shall have restrained joints. Push-on and mechanical joints shall conform to ANSI/AWWA C111/A21.11.
  - 2. The only acceptable restrained joint systems are identified in the table below. No field welding of restrained joint pipe will be allowed.



<b>Acceptable Restrained Joints</b>				
<b>Pipe Dia. (inches)</b>	<b>ACIPCO</b>	<b>U.S. Pipe</b>	<b>McWane</b>	<b>Generic*</b>
4 – 12	Fast-Grip Flex Ring	Field Lok TR Flex	Push-On Restrained Joint Type A	MJ with Retainer Gland
16 – 24	Fast-Grip Flex Ring	Field Lok TR Flex	Push-On Restrained Joint Type A	MJ with Retainer Gland
30 – 36	Flex Ring	TR Flex	Push-On Restrained Joint Type B	MJ with Retainer Gland
42 – 48	Flex-Ring	TR Flex	N/A	MJ with Retainer Gland
54 – 64	Lok-Ring	TR Flex	N/A	N/A

\* Fittings and valves only, and only where specifically allowed.

3. Restrained joint pipe (RJP) on supports shall have bolted joints and shall be specifically designed for clear spans of at least 36 feet.
4. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.

E. Gaskets: Gaskets for the various types of joints shall be as follows:

1. Gaskets for mechanical joints shall be made of vulcanized styrene butadiene (SBR) as specified in ANSI/AWWA C111/A21.11 unless specified otherwise. Reclaimed or natural rubber shall not be used. Gaskets shall be free from porous areas, foreign material and other defects that make them unfit for the use intended.
2. Gaskets for flanged joints shall be made of synthetic rubber, ring type or full-face type and shall be 1/8-inch thick. Gaskets shall conform to the dimensions specified in ANSI/AWWA C111/A21.11.
3. Gaskets for push-on and restrained joints shall be in accordance with the pipe manufacturer's design dimensions and tolerances. Gaskets shall be made of vulcanized styrene butadiene (SBR) as specified in ANSI/AWWA C111/A21.11 unless specified otherwise.

F. Bolts and Nuts

1. Provide the necessary bolts for connections. All bolts and nuts shall be threaded in accordance with ANSI B1.1, Coarse Thread Series, Class 2A external and 2B internal fit.

2. Bolts and nuts for mechanical joints shall be tee head bolts and nuts of high- strength low-alloy steel having a minimum yield strength of 45,000 psi. Dimensions of bolts and nuts shall be in accordance with the dimensions shown in ANSI/AWWA C111/ A21.11.
3. Flanged joints shall be bolted with through stud or tap bolts of required size as directed. Bolt length and diameter shall conform to ANSI/AWWA C115 for Class 125 flanges shown in ANSI/ASME B16.1.
4. Bolts for exposed service shall be zinc plated, cold pressed, steel machine bolts conforming to ASTM A307, Grade B. Nuts for exposed service shall be zinc plated, heavy hex conforming to ASTM A563. Zinc plating shall conform to ASTM B633, Type II.
5. Bolts for submerged service shall be stainless steel machine bolts conforming to ASTM A193, Grade B8. Nuts shall be heavy hex, stainless steel conforming to ASTM A194, Grade 8.

G. Mechanical joint glands shall be ductile iron.

H. Welded Outlets: Welded outlets may be provided in lieu of tees or saddles on mains with a diameter greater than or equal to 24-inches. The pipe joint on the outlet pipe shall meet the joint requirements specified above. The minimum pipe wall thickness of the parent pipe and the outlet pipe shall be Special Thickness Class 53 (Pressure Class 350 for 60 and 64-inch sizes). The welded outlet shall be rated for 250 psi working pressure. Each welded outlet shall be hydrostatically tested at 500 psi. The welded outlet shall be fabricated by the manufacturer of the parent pipe. The maximum outlet diameters shall not exceed those listed in the table below:

<b>Parent Pipe Diameter, Inches</b>	<b>Maximum Outlet Diameter, Inches</b>
24	16
30	20
36	24
42	30
48	30
54	30
60	30
64	30

- I. Thrust collars shall be welded-on ductile iron body type designed to withstand thrust due to 250 psi internal pressure on a dead end from either direction on that pipe size. The thrust collars shall be continuously welded to the pipe by the pipe manufacturer.
- J. Solid sleeves shall be used to connect plain end ductile iron pipe. Solid sleeves shall meet the requirements of ANSI/AWWA C110/A21.10 for long pattern and have a minimum pressure rating of 250 psi. Solid sleeves shall have mechanical or restrained joints as specified in this section or as shown on the Drawings. Solid sleeves shall be used only in locations shown on the Drawings or at the discretion of the Engineer. Solid sleeves shall be manufactured by American Cast Iron Pipe Company or U. S. Pipe.

K. Pipe stubs for all structure connections shall not exceed 2-feet in length. Caps shall be furnished where required.

M. Cement Lining

1. Interior surfaces of all ductile iron pipe and fittings shall be cleaned and lined with a cement mortar lining applied in conformity with ANSI/AWWA C104/A21.4. If lining is damaged or found faulty upon delivery, the damaged pipe sections shall be repaired or removed from the site as directed by the Engineer.
2. The minimum lining thickness shall be as shown in the following table. Lining shall be square and uniform with regard to the longitudinal axis of the pipe.

<b>Pipe Diameter (Inches)</b>	<b>Minimum Lining Thickness (Inches)</b>
3 - 12	1/8
14 - 24	3/32
30 - 64	1/8

N. Pipe Coating: Unless otherwise specified, pipe and fittings shall be coated with a 1 mil asphaltic coating as specified in ANSI/AWWA C151/A21.51.

O. Polyethylene Encasement: Ductile iron pipe shall be encased with polyethylene film where shown on the Drawings, specified or directed by the Engineer. Polyethylene film shall be as specified in Section 02616.

P. Pipe Insulation: Where a water main is exposed to the elements because the pipe is above ground, the Engineer shall determine whether the pipe is to be insulated or not. Where insulation is to be furnished and installed it shall conform to the following:

1. Insulating material shall be 3-inch thick polyurethane pipe covering formed to fit the pipe diameter.
2. Outer covering shall be 0.016-inch thick aluminum chiller jacket with moisture shield and secured with stainless steel wire or stainless-steel straps.

Q. Acceptance will be on the basis of the Engineer's inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards.

**2.02 PIPING APPURTENANCES**

A. Mechanical Joint Restraint

1. Design

- a. Restraint devices for pipe sizes 3 inches through 48 inches in diameter shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.

- b. Restraint devices shall have a working pressure rating of 350 psi for 3-inch through 16-inch diameter pipe and 250 psi for 18-inch through 48-inch diameter pipe. Ratings shall be for water pressure and shall include a minimum safety factor of 2 to 1 for all pipe diameters.
2. Material
- a. Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536.
  - b. Ductile iron gripping wedges shall be contoured to fit on the pipe and shall be heat treated within a range of 370 to 470 BHN.
  - c. Dimensions of the glands shall be such that they can be used with the standard mechanical joint bell and tee head bolts conforming to the requirements of ANSI/AWWA C111/A21.11 and ANSI/AWWA C 153/A21.53, latest editions.
3. Approvals
- a. Restraint devices shall be listed by Underwriters Laboratories (3-inch through 24-inch size) and approved by Factory Mutual (3-inch through 12-inch size).
  - b. Mechanical joint restraint shall be Megalug Series 1100 as manufactured by EBAA Iron Inc., Uni-Flange Series 1400, as manufactured by Ford Meter Box Company or approved equal.

#### B. Hydrant Connections

1. Pipe: Pipe shall have mechanical joint ends and be as specified in paragraph 2.02 of this Section.
2. Hydrant Tees: Hydrant tees shall conform to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53. Tapping saddles shall not be allowed.
3. Anchor Couplings:
  - a. Anchor couplings for hydrant installation shall be class 350 ductile iron pipe meeting the requirements of AWWA C151/ANSI A21.51, Class 53 and shall have an anchoring feature at both ends so that when used with mechanical joint split glands a restrained joint is provided.
  - b. Anchor couplings shall be cement lined in accordance with ANSI/AWWA C104/ A21.4 and shall have a bituminous coating in accordance with ANSI/AWWA C151/A21.51.
  - c. Anchor couplings shall be equal to swivel anchor pipe and couplings as manufactured by Fab Pipe, Inc., Tyler Utilities Division of Union Foundry Company or approved equal.
4. Hydrant Connector Pipe:
  - a. Hydrant connector pipe shall be class 350 ductile iron meeting the requirements of ANSI/AWWA C153/A21.53 and shall be offset design so that the hydrant can be adjusted to

ensure placement at the proper grade. Connector pipe shall have an anchoring feature at both ends so that when used with mechanical joint split glands a restrained joint is provided.

- b. Hydrant connector pipe shall be cement lined in accordance with ANSI/AWWA C104/ A21.4 and have a bituminous coating in accordance with ANSI/AWWA C151/A21.51.
  - c. Hydrant connector pipe shall be equal to the Gradelok as manufactured by Assured Flow Sales, Inc., Sarasota, Florida.
  - d. Hydrant connector pipe shall not be used unless specifically directed by the Engineer.
- C. Tapping Saddles: Tapping saddles are not allowed.
- D. Detection Tape: Detection tape shall be composed of a solid aluminum foil encased in a protective plastic jacket. Tapes shall be color coded in accordance with APWA color codes with the following legends: Water Systems, Safety Precaution Blue, "Caution Water Line Buried Below". Colors may be solid or striped. Tape shall be permanently printed with no surface printing allowed. Tape width shall be a minimum of 2-inches when buried less than 10-inches below the surface. Tape width shall be a minimum of 3-inches when buried greater than 10-inches and less than 20-inches. Detection tape shall be equal to Lineguard Type III Detectable or Allen Systems Detectatape.

## **PART 3 EXECUTION**

### **3.01 LAYING AND JOINTING PIPE AND ACCESSORIES**

- A. Lay all pipe and fittings to accurately conform to the lines and grades as shown on the Drawings or as established by the Engineer.
- B. Pipe Installation
  1. Proper equipment, tools and facilities shall be provided for the safe performance of the Work. All pipe, fittings, valves and hydrants shall be lowered carefully into the trench by means of slings, ropes or other suitable tools or equipment in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.
  2. All pipe, fittings, valves, and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Engineer, who may prescribe corrective repairs or reject the materials.
  3. All lumps, blisters and excess coating shall be removed from the socket and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry and free from dirt, sand, grit or any foreign materials before the pipe is laid. No pipe containing dirt shall be laid.
  4. Foreign material shall be prevented from entering the pipe while it is being placed in the trench. No debris, tools, clothing or other materials shall be placed in the pipe at any time.

5. As each length of pipe is placed in the trench, the joint shall be assembled, and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.
6. It is not mandatory to lay pipe with the bells facing the direction in which work is progressing.
7. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade, shall not be permitted.
8. Provide detection tape for all pipe greater than 12-inches in diameter. Detection tape shall be buried 4 to 10-inches deep. Should detection tape need to be installed deeper, the Contractor shall provide 3-inch wide tape. In no case shall detection tape be buried greater than 20-inches from the finish grade surface.

C. Alignment and Gradient

1. Lay pipe straight in alignment and gradient or follow true curves as nearly as practicable. Do not deflect any joint more than the maximum deflection recommended by the manufacturer.
2. Maintain a transit, level and accessories at the work site to lay out angles and ensure that deflection allowances are not exceeded.

D. Expediting of Work: Excavate, lay the pipe, and backfill as closely together as possible. Do not leave unjointed pipe in the trench overnight. Backfill and compact the trench as soon as possible after laying and jointing is completed. Cover the exposed end of the installed pipe each day at the close of work and at all other times when work is not in progress. If necessary to backfill over the end of an uncompleted pipe or accessory, close the end with a suitable plug, either push-on, mechanical joint, restrained joint or as approved by the Engineer.

E. Joint Assembly

1. Push-on, mechanical, flange and restrained type joints shall be assembled in accordance with the manufacturer's recommendations.
2. The Contractor shall inspect each pipe joint within 1,000 feet on either side of main line valves to insure 100 percent seating of the pipe spigot, except as noted otherwise.
3. Each restrained joint shall be inspected by the Contractor to ensure that it has been "homed" 100 percent.
4. The Contractor shall internally inspect each pipe joint to insure proper assembly for pipe 24-inches in diameter and larger after the pipe has been brought to final alignment.

F. Cutting Pipe: The Contractor shall cut the pipe and bevel the end, as necessary, to provide the correct length of pipe necessary for installing the fittings, valves, accessories and closure pieces in the correct location. Only push-on or mechanical joint pipe shall be cut. Cement lining shall be undamaged.

G. Polyethylene Encasement: Installation shall be in accordance with ANSI/AWWA C105/A21.5 and the manufacturer's instructions. All ends shall be securely closed with tape and all damaged areas shall be completely repaired to the satisfaction of the Engineer.

### **3.02 CONNECTIONS TO WATER MAINS**

- A. Make connections to existing pipe lines with tapping sleeves and valves, unless specifically shown otherwise on the Drawings.
- B. Location: Before laying pipe, locate the points of connection to existing water mains and uncover as necessary for the Engineer to confirm the nature of the connection to be made.
- C. Interruption of Services: Make connections to existing water mains only when system operations permit and only when notices are issued to the customer. The Contractor will operate existing valves only with the specific authorization and direct supervision of the Owner.
- D. Tapping Sleeves
  - 1. Holes in the new pipe shall be machine cut, either in the field or at the factory. No torch cutting of holes shall be permitted.
  - 2. Prior to attaching sleeve, the pipe shall be thoroughly cleaned utilizing a brush and rag as required.
  - 3. Before performing field machine cut, the watertightness of the sleeve assembly shall be pressure tested. The interior of the assembly shall be filled with water. An air compressor shall be attached, which will induce a test pressure as specified in this Section. No leakage shall be permitted for a period of five minutes.
  - 4. After attaching the sleeve to an existing main, but prior to making the tap, the interior of the assembly shall be disinfected. All surfaces to be exposed to potable water shall be swabbed or sprayed with a one percent hypochlorite solution.
- E. Connections using Solid Sleeves: Where connections are shown on the Drawings using solid sleeves, the Contractor shall furnish materials and labor necessary to make the connection to the pipe line including cutting, excavation and backfill.
- F. Connections Using Couplings: Where connections are shown on the Drawings using couplings, the Contractor shall furnish materials and labor necessary to make the connection to the existing pipe line, including all necessary cutting, excavation and backfill.

### **3.03 THRUST RESTRAINT**

- A. Provide restraint at all points where hydraulic thrust may develop.
- B. Retainer Glands: Provide retainer glands where shown on the Drawings. Retainer glands shall be installed in accordance with the manufacturer's recommendations, particularly, the required torque of the set screws. The Contractor shall furnish a torque wrench to verify the torque on all set screws which do not have inherent torque indicators.
- C. Harnessing
  - 1. Provide harness rods only where specifically shown on the Drawings or directed by the Engineer.

2. Harness rods shall be manufactured in accordance with ASTM A36 and shall have an allowable tensile stress of no less than 22,000 psi. Harness rods shall be hot dip galvanized or field coated with bitumastic before backfilling.
3. Where possible, harness rods shall be installed through the mechanical joint bolt holes. Where it is not possible, provide 90-degree bend eye bolts.
4. Eye bolts shall be of the same diameter as specified in ANSI/AWWA C111/A21.11 for that pipe size. The eye shall be welded closed. Where eye bolts are used in conjunction with harness rods, an appropriate size washer shall be utilized with a nut on each end of the harness rod. Eye bolts shall be of the same material and coating as the harness rods.

D. Thrust Collars: Collars shall be constructed as shown on the Drawings.

E. Concrete Blocking

1. Provide concrete blocking for all bends, tees, valves, and other points where thrust may develop, except where other exclusive means of thrust restraint are specifically shown on the Drawings.
2. Concrete shall be as specified in Section 03301, Concrete and Reinforcing Steel.
3. Form and pour concrete blocking at fittings as shown on the Drawings and as directed by the Engineer. Pour blocking against undisturbed earth. Increase dimensions when required by over excavation.

### **3.04 INSPECTION AND TESTING**

- A. All sections of the water main shall be hydrostatically pressure tested in accordance with AWWA C600 and these Specifications. A section of main will be considered ready for testing after completion of all thrust restraint and backfilling.
- B. Water used for flushing and testing mains and other construction purposes will be made available to the Contractor as specified in Section 01040.
- C. Each segment of newly installed water main between main valves shall be tested individually in the presence of the project engineer or inspector.
- D. Test Preparation
  1. For water mains less than 24-inches in diameter, flush sections thoroughly at flow velocities, greater than 2.5 feet per second, adequate to remove debris from pipe and valve seats. For water mains 24-inches in diameter and larger, the main shall be carefully swept clean, and mopped if directed by the Engineer. Partially open valves to allow the water to flush the valve seat.
  2. Partially operate valves and hydrants to clean out seats.
  3. Provide temporary blocking, bulkheads, flanges and plugs as necessary, to assure all new pipe, valves and appurtenances will be pressure tested.



4. Before applying test pressure, air shall be completely expelled from the pipeline and all appurtenances. Insert corporation stops at high points to expel air as main is filled with water as necessary to supplement automatic air valves. Corporation stops shall be constructed with a meter box as shown on the Drawings.
  5. Fill pipeline slowly with water. Provide a suitable pump with an accurate water meter to pump the line to the specified pressure.
  6. The differential pressure across a valve or hydrant shall equal the maximum possible, but not exceed the rated working pressure. Where necessary, provide temporary backpressure to meet the differential pressure restrictions.
  7. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure.
- E. Test Pressure: Test the pipeline at 250 psi measured at the lowest point for at least two hours. Maintain the test pressure within 5 psi of the specified test pressure for the test duration. Should the pressure drop more than 5 psi at any time during the test period, the pressure shall be restored to the specified test pressure. Provide an accurate pressure gauge with graduation not greater than 5 psi.
- F. Testing Allowance
5. Testing allowance shall be defined as the sum of the maximum quantity of makeup water that must be added into the pipeline undergoing hydrostatic pressure testing, or any valved section, in order to maintain pressure within 5 psi of the specified test pressure for the test duration plus water required to return line to test pressure at the end of the test. Leakage shall be the total cumulative amount measured on a water meter.
  6. The Owner assumes no responsibility for leakage occurring through existing valves.
- G. Test Results: No installed pipe shall be accepted if the quantity of makeup water exceeds the limits determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{148,000}$$

Where: L = allowable leakage, in gallons per hour

S = length of pipe tested, in feet

D = nominal diameter of the pipe, in inches

P = average test pressure during the hydrostatic test, in pounds per square inch (gauge)

As determined under Section 5 of ANSI/AWWA C600.

- H. If the water main section being tested contains lengths of various pipe diameters, the allowable leakage shall be the sum of the computed leakage for each diameter. The leakage test shall be repeated until the test section is accepted. All visible leaks shall be repaired regardless of leakage test results.

- I. After a pipeline section has been accepted, relieve test pressure. Record type, size and location of all outlets on record drawings.
- J. At the conclusion of the work, the Contractor shall thoroughly clean all new pipelines by flushing with water or other means to remove all dirt, stone, pieces of wood or other material which may have entered the pipeline during the construction period.
- K. The Contractor shall be responsible for legal disposal of all water used for flushing and testing.
- L. A written copy of the test results with the observed allowable leakage confirmed by the project inspector shall be provided to the city through coordination and written correspondence with the County.

**+++ END OF SECTION 02665 +++**

**SECTION 02668  
WATER SERVICE CONNECTIONS**

**PART I - GENERAL**

**1.01 SCOPE**

- A. The work covered by this Section includes furnishing all materials and equipment, providing all required labor and installing water service connections and all appurtenant work according to these Specifications and/or to the Water Connection Detail as shown schematically on the Drawings.
- B. Water meters are not to be furnished nor installed. However, the water meter connection must be compatible with the water meters currently used by the owner.
- C. No galvanized pipe or fittings shall be used on water services.

**1.02 LOCATIONS**

Locations shall be directed by the City Engineer along the route of the water mains.

**1.03 SERVICE COMPATIBILITY**

It is the intent of these Specifications that the water service connections shall duplicate those presently being provided by the owner in order to be compatible with their service maintenance procedures.

**1.04 QUALITY CONTROL**

All materials installed under this Section shall have the approval of the NSF for water services.

**PART 2 -- PRODUCTS**

**2.01 MATERIALS AND CONSTRUCTION**

- A. Service Line
  - 1. Copper Tubing: Tubing shall be ASTM B 88, Type K, rolled type. Fittings shall be brass with flare connection inlets and outlets, ANSI B16.26. Where required, adapters shall be brass. Unions shall be cast bronze. Joints shall be flare type. All fittings shall be of bronze construction with flare type connections.
  - 2. Detection tape shall be as specified in Section 02665.
- B. Meter Boxes
  - 1. Meter box for 5/8" and 3/4" meters shall be Oldcastle BCF 1324-18 with the Oldcastle SKU number 13242521. The box shall have a paving flange around the top to allow it to remain level with the surface and a wide footer at the bottom to prevent knifing into the soil below. The box shall be black with two mouse holes for pipe entry.

Meter box lid shall be Oldcastle Fiberlyte FL30 with dimensions of 13"x 24"x 2" with the Oldcastle SKU number 02001473. The lid shall be black with the words ATLANTA WATER and the Atlanta Resurgens logo embossed onto the lid. The lid shall have a recessed touch read hole to accommodate the Neptune R900 antenna pad and a Penta L-bolt to secure the lid to the box.

2. Meter box for 1" and 1-1/2" meters shall be Oldcastle BCF 1730-18 with the Oldcastle SKU number 17302521. The box shall have a paving flange around the top to allow it to remain level with the surface and a wide footer at the bottom to prevent knifing into the soil below. The box shall be black with two mouse holes for pipe entry.

Meter box lid shall be Oldcastle Fiberlyte FL36 with dimensions of 17"x 30"x 2" with the Oldcastle SKU number 02001585. The lid shall be black with the words ATLANTA WATER and the Atlanta Resurgens logo embossed onto the lid. The lid shall have a recessed touch read hole to accommodate the Neptune R900 antenna pad and a Penta L-bolt to secure the lid to the box.

#### D. Valves and Accessories

1. Ball valves shall be full port bronze, heavy duty type. Valve ends shall be threaded. Valves shall have a minimum 200 psi working pressure for water. Valves shall have stainless steel nut and handle. Valves shall be made in the U.S.A.
2. Corporation Cocks
  - a. Corporation cocks shall be ground key type, shall be made of bronze conforming to ASTM B61 or B62 and shall be suitable for the working pressure of the system. Ends shall be suitable for flare type joint. Coupling nut for connection to flared copper tubing shall conform to ANSI B16.26.
  - b. Corporation cocks shall be equal to Ford FB-600-4.

### PART 3 -- EXECUTION

#### 3.01 GENERAL

- A. Immediately following completion of the water main system, the Contractor shall install water taps and meter boxes for each planned lot of the subdivision. All taps shall remain exposed at the main until the system has been successfully inspected, disinfected and tested for pressure.
- B. Installation shall conform to the details for water service connections appearing schematically on the Drawings. Contractor shall provide any and all appurtenant work required to provide the intended water service connections.
- C. The Contractor shall be prepared to make emergency repairs to the water system, if necessary, due to damage by others working in the area. In conjunction with this requirement, the Contractor shall furnish and have available at all times, a tapping machine, for the purpose of

making temporary water service taps or emergency repairs to damaged water services. The Contractor shall furnish the Owner a phone number of an individual with the authority to initiate emergency repair work. This number must be provided prior to starting work on the Project.

### **3.02 TAPPING MAIN**

- A. All services connected to water main shall be through a 1-inch direct tap, regardless of service and meter size.
- B. The water main shall be tapped with a tapping machine specifically designed for that purpose. The tap shall be a direct tap into the water main through a 1-inch brass corporation cock. All taps shall be supervised by the owner. All taps shall be made on the water main at a position so as not to be the top side of the pipe nor the bottom of the pipe. Distance between taps must be a minimum of 12-inches apart.

### **3.03 SERVICE LINES**

- A. Copper tubing between tap and water meter shall be one continuous length of pipe with no intermediate joints or connections. The service line shall be placed without sharp turns or bends from the water main to the meter box.
- B. When meters are located on the opposite side of the street from the water main, new copper service lines shall be extended through a common 6-inch bore, Schedule 40 PVC conduit to the service side. Replacement of existing services may be by free bore without a casing.
- C. Provide detection tape over all service lines.
- D. 1-1/2-inch water services (meter box installation only) are made by utilizing a branch connection (wye) and two 1-inch direct taps. 1-inch copper tubing lines are joined at the branch connection at the meter box (meter box equal to CdR box 17 x 30 x 20 dimensions with water logo). Branch connections shall be equal to Ford Model #Y-28-246 with two 1-inch copper flare connections x 1-1/2-inch male iron pipe threads. A curb stop equal to Ford Model #B11-666W is threaded onto the 1-1/2-inch end of branch connection. Utilizing a 1-1/2-inch, 3-piece meter coupling equal to Ford Model #CF31-66 and meter coupling bushing Model #BIM-66 is threaded onto the opposite side of the curb stop.
- E. 2-inch water services (meter box installation only) are made by utilizing a branch connection and three 1-inch direct water taps. 1-inch copper tubing lines are joined at the branch connection at the meter box (meter box equal to CdR box 24 x 36 x 24 dimensions with water logo). Branch connections shall be equal to Ford Model #Y-28-347 with three 1-inch copper flare connections x 2-inch male iron pipe threads. A curb stop equal to Ford Model #B11-777W is threaded onto the 2-inch end of branch connection. Utilizing a 2-inch, 3-piece meter coupling equal to Ford Model #C38-77 with bushing Model #BIM-77 is threaded onto the opposite side of the curb stop.

### **3.04 METER BOXES**

- A. The meter box shall be located parallel to the curb and centered within the space two feet behind the back of the curb. The meter box lid shall be set at finished grade of the road shoulder. The

meter box shall be placed on a bed of gravel or crushed stone. The bed shall be 3-inches thick and extend 6-inches in all directions beyond the edge of the meter box. The box shall be carefully and uniformly backfilled to prevent distortion that would cause leaks. Meter boxes shall be located in pairs within two feet of the common property lines between the lots.

- B. All water meters shall have fluorescent markings at curb. Markings shall not be the same color as markings denoting hydrants.
- C. An 8-inch long threaded brass nipple shall be provided between the meter and a ball valve on the residence side of the meter box. The ball valve shall be located in an 8-inch diameter fiberglass valve box with lid. The valve box shall be placed on a blanket of granular crushed stone. The bed shall be 3-inches thick and extend 3-inches in all directions beyond the edge of the valve box.

### **3.05 RELOCATION OF SERVICE LINES**

- A. Relocate the existing meter to the new right-of-way limits and reconnect to the house service. Existing meters already located at the new right-of-way limits will not need relocating.
- B. Before disconnecting the existing meter, the existing corporation in the main shall be closed. All existing meters and meter boxes shall be removed, if not already located at the right-of-way, reinstalled and reconnected as indicated on the Drawings.
- C. Existing service lines shall be field-located by the Contractor. The Contractor shall be responsible for locating existing water meters, relocating the meters and meter boxes as necessary, and determining the existing size service line to reconnect the meters to the new water mains. All service lines installed under existing pavement, including streets, driveways and sidewalks, shall be installed by boring.

### **3.06 TRANSFER OF SERVICE**

Immediately before connecting to the relocated or existing meter, all service lines shall be flushed to remove any foreign matter. Any special fittings required to reconnect the existing meter to the new copper service line, or the existing private service line, shall be provided by the Contractor. To minimize out of service time, the Contractor shall determine the connections to be made and have all the required pipe and fittings on hand before shutting off the existing service. After completing the connection, the new corporation stop shall be opened and all visible leaks shall be repaired.

### **3.07 MAINTENANCE AND REPAIRS**

The tap, service line and meter box shall remain under the developer's maintenance responsibility for the same warranty period as the water main. The developer shall promptly repair any damage to the water system during the warranty period.

+++ END OF SECTION 02668 +++

**SECTION 02675  
DISINFECTION OF WATER MAINS**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The work covered by this Section includes furnishing all labor, equipment, materials, chemicals and incidentals required to disinfect all water mains installed under this contract in accordance with the procedures specified herein and as directed by the Engineer.

**1.02 QUALITY ASSURANCE**

- A. Reference Standards: Procedures for disinfecting water mains unless otherwise modified herein, shall conform to the requirements of AWWA Standard C651, Disinfecting Water Mains.

**1.03 SUBMITTALS**

- A. Submittals shall be made in accordance with the requirements of the General Conditions of the Contract Documents. In addition, the following specific information shall be provided:
  - 1. Disinfection shall be performed by an approved specialty contractor. Before disinfection is performed, the Contractor shall submit a written pipeline disinfection procedure for approval before being permitted to proceed with the disinfection. The plan shall also include the steps to be taken for the neutralization of the chlorinated water.
  - 2. In addition, for mains 24-inches in diameter and larger, the Contractor shall submit the resume of a Disinfection Supervisor. The Disinfection Supervisor shall have demonstrated prior disinfection experience with at least 10 miles of 24-inch diameter or greater water transmission mains in the state of Georgia. Approval of the Disinfection Supervisor shall also include a 1-hour interview with the Owner.

**PART 2 PRODUCTS**

**2.01 DISINFECTION AGENT**

- A. The disinfection agent shall be free chlorine or chlorine compound.

**PART 3 EXECUTION**

**3.01 DISINFECTION OF PIPELINE**

- A. After successfully pressure testing each pipeline section, disinfect in accordance with AWWA C651 for the continuous-feed method and these Specifications.
- B. Chlorination:
  - 1. Contractor shall meet the disinfection requirements of the current version of the Georgia Environmental Protection Division, Drinking Water Permitting & Engineering Program,

Minimum Standards for Public Water Systems, or the requirements below, whichever are more stringent.

2. Contractor shall apply chlorine solution to achieve a concentration of at least 25 milligrams per liter free chlorine in new line. Retain chlorinated water for 24 hours. Water shall be supplied from a temporary source protected by appropriate backflow prevention devices. Backflow preventer must be approved by the Owner prior to connection. Chlorine shall be injected no more than 10 feet from the beginning of the new main.
  3. Chlorine concentration shall be recorded at every outlet along the line at the beginning and end of the 24-hour period.
  4. After 24 hours, all samples of water shall contain at least 10 milligrams per liter free chlorine. Re-chlorinate if required results are not obtained on all samples.
  5. Final pipeline disinfection shall occur at the end of the construction period immediately prior to putting the main in service.
  6. Main disinfection shall be performed and evaluated in sequential and contiguous pipe sections between in-line valves.
- C. Disposal of Chlorinated Water: Reduce chlorine residual of disinfected water to less than 1 milligram per liter if discharged directly to a body of water or to less than 2 milligrams per liter if discharged onto ground prior to disposal. Treat water with sulfur dioxide or other reducing chemicals to neutralize the chlorine residual. Flush all lines until residual is equal to existing system. Contractor shall be responsible for any state or local permits required for the disposal of flushing water.
- D. Bacteriological Testing: After final flushing and before the water main is placed in service, the Owner shall collect samples from the main and deliver them to the Owner's designated laboratory for bacteriological testing. One set of samples shall be collected from every 1,200 feet of water main, plus one set from each end of main. Testing shall be performed by the Owner's water laboratory. If test results are not satisfactory, the Contractor shall re-chlorinate the mains until required results are obtained.

**+++ END OF SECTION 02675 +++**



**SECTION 02690  
PIPE COUPLINGS**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall furnish labor, materials, equipment and incidentals required to install and test mechanical couplings, complete in place as shown on the Drawings and as specified herein.
- B. Restrained pipe couplings shall be installed together and provide for a leak proof seal at the joint.
- C. Sleeve type couplings shall be installed to join sections of buried pipe together where restraint is not required.

**1.02 SUBMITTALS**

- A. The Contractor shall submit the following:
  - 1. Certified dimensional drawings of all couplings.
  - 2. Design calculations of each critical section of the coupling thickness, all sufficient to ascertain conformance of the coupling with these Specifications.
  - 3. Material list and schedules which include and describe all materials to be utilized.
- C. The Contractor shall furnish a certified affidavit of compliance for all couplings furnished under this Section, as specified and applicable in ANSI/AWWA C210, C213, and C219, respectively, and the following supplemental requirements:
  - 1. Physical and chemical properties of all steel.
  - 2. Hydrostatic test reports.

**1.03 QUALITY CONTROL**

Reference Standards: The Contractor shall comply with the applicable provisions and recommendations of the latest editions of the following standards, except as otherwise shown on the Drawings or specified herein.

- 1. ANSI/ASTM E165 – Standard Practice for Liquid Penetrate Inspection for General Industry
- 2. ANSI/AWS D1.1 - Structural Welding Code – Steel
- 3. ANSI/AWWA C200 - Steel Water Pipe 6 Inches and Larger
- 4. ANSI/AWWA C210 - Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
- 5. ANSI/AWWA C213 - Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines
- 6. ANSI/AWWA C219 - Bolted, Sleeve-Type Couplings for Plain-End Pipe
- 7. ANSI/AWWA C227 – Bolted Split Sleeve Restrained and Non-Restrained Couplings for Plain-End Pipe
- 8. ANSI C2000 - Classification System for Rubber Products in Automotive Applications

9. AWWA M11 - Steel Water Pipe – A Guide for Design and Installation

**1.04 VERIFICATION**

- A. Inspection: All couplings shall be subject to inspection at the place of manufacture in accordance with the provisions of ANSI/AWWA C210, C213, and C219, respectively, as supplemented by the requirements herein. The Contractor shall notify the City’s Authorized Representative in writing of the manufacturing starting date not less than 3 calendar days prior to the start of manufacture.
- B. During the manufacture of the couplings, the City’s Authorized Representative shall be given access to all areas where manufacturing is in process and shall be permitted to make all inspections necessary to confirm compliance with these Specifications.
- C. Testing Requirements: One coupling of each diameter and pressure class shall be shop tested and certified to pressure of 500 psi.

**PART 2 PRODUCTS**

**2.01 COUPLING SYSTEM DESIGN AND COMPONENT UNIT RESPONSIBILITY**

- A. Gaskets, bolts, nuts, glands, end rings and hardware for pipe couplings of all types shall be furnished by the pipe coupling manufacturer. Gaskets shall be designed for the coupling and appropriately sized to provide a watertight seal at the design pressure and temperature.
- B. Gaskets, bolts, nuts, glands, end rings and hardware shall be shipped with the pipe coupling.

**2.02 RESTRAINED COUPLINGS**

- A. General: Coupling shall be a bolted, split-sleeve type and consist of four basic components: one- or two-piece housing, gasket assembly, bolts and nuts and restraint rings.
- B. Coupling Design:
  - 1. Couplings shall be designed to perform under the most critical combination of internal pressure and external loads as determined by the design procedures per AWWA M11 and the requirements of these specifications.
  - 2. Coupling Thickness for Internal Pressure: For resistance to internal pressure, the thickness of the steel coupling shall be as determined by the following formula:

$$t = \frac{P_w D_y}{2F_s}$$

- Where: t = Steel coupling thickness, in.
- P<sub>w</sub> = Design working pressure, psi
- D<sub>y</sub> = Pipe outside diameter, in.
- F<sub>s</sub> = 50% of specified minimum yield point of the steel, psi

- 3. Couplings shall be designed for a working pressure of 250 psi.

- C. Coupling Housing:

1. Material: Coupling shall be manufactured from ASTM A36 carbon steel.
2. Description: The coupling shall be of the split-sleeve type with a double arch cross section which closes around pipe ends with steel restraint rings affixed for pipe end restraint requirements.
3. As the coupling closes, it shall confine an elastomeric gasket beneath the arches of the sleeve to create a radial seal. The axial seal shall be affected at the sealing plates as the bolts pull the coupling snug around the pipe. The coupling shall permit angular pipe deflection.

D. Gaskets:

1. Material: Elastomers shall have properties as designated by ASTM C2000.
2. Description: The sealing members shall be comprised of two O-Ring gaskets and an elastomer-sealing pad bonded to the sealing plate. Internal pressure shall not be required to affect the seal.
3. Service: Gasket supplied shall be Isoprene or EPDM conforming to ASTM D2000 for water service within the temperature range of -20 to 180 degrees Fahrenheit.

E. Bolts, Studs and Nuts

1. Material: Carbon steel bolts shall conform to ASTM A325 with a minimum tensile strength equal to 105,000 psi. Carbon steel studs shall conform to ASTM A193 Grade B7 with a minimum tensile strength of 125,000 psi. Carbon steel nuts shall conform to ASTM A194 Grade 2H.
2. Installation: The coupling shall be assembled with bolts or studs at the closure plates and tightened to assure snug coupling contact with the pipe. Contractor shall follow the manufacturer's written instructions regarding installation and tightening of bolts or studs.

F. Restraint Rings:

1. Material: Restraint rings shall be furnished with the couplings. Carbon steel restraint rings shall conform to ASTM A108 grade 1018.
2. Application: Coupling shall provide a fully restrained pipe joint and shall be Type FxF as manufactured by Depend-O-Lok. One restraint ring welded to each of the pipe ends shall fit inside the coupling shoulders and prevent the pipe ends from pulling out of the coupling. The Contractor shall follow the manufacturer's recommendation for the size and amount of welding required to attach the restraint rings.

G. Epoxy Coating: Fusion Bonded Epoxy Coatings: A fusion bonded epoxy coating shall be applied to the inside and outside of the coupling in conformance with ANSI/AWWA C213.

H. Insulation Sleeve: If required due to the material of the pipe to be joined, insulating sleeves shall be supplied to provide for electrical isolation between the two pipe ends. One sleeve shall be provided for each pipe end. The sleeve width shall be equal to  $\frac{1}{2}$  the coupling body width plus 1 inch. Thickness shall be  $\frac{1}{8}$  -inch. Each sleeve shall have a lip that extends down between the pipe ends that is  $\frac{3}{8}$  -inch thick by  $\frac{3}{4}$  -inch deep, fully bonded to the sleeve. The insulating sleeve material shall be an EPDM elastomer suitable for potable water services.

- I. Restrained couplings shall be Depend-O-Lok as manufactured by Victaulic Inc. or an approved equal.

### **2.03 SLEEVE TYPE COUPLINGS**

- A. Pipe coupling shall be a gasketed sleeve-type design and shall consist of a steel middle ring, two steel followers and two rubber compounded wedge section gaskets and track head bolts to compress the gaskets.
- B. The middle ring and followers of the coupling shall be true circular sections free of irregularities, flat spots or surface defects. They shall be formed with the follower ring section of such design as to provide containment of the gasket.
- C. Coupling shall be provided with gaskets of a composition suitable for exposure to the liquid within the pipe.
- D. A fusion bonded epoxy coating shall be applied to the inside and outside of the coupling in conformance with ANSI/AWWA C213. Coating shall also be NSF-61 approved.
- E. The coupling shall be provided with high strength low alloy steel bolts and hexagonal semi-finished nuts.
- F. Coupling shall have a minimum working pressure rating of 250 psi.
- G. Sleeve type couplings shall be Dresser Style 38, Smith Blair Style 411 or approved equal.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION OF RESTRAINED COUPLINGS**

- A. The Contractor shall inspect each coupling to ensure that there are no damaged portions of the coupling. Particular attention should be paid to the sealing pad/sealing plate area.
- B. Before installation of the couplings, each coupling shall be thoroughly cleaned of any foreign substance, which may have collected thereon and shall be kept clean at all times thereafter.
- C. In no case shall the deflection in the joint between pipe ends exceed the maximum deflection recommended by the manufacturer. No joint shall be misfit any amount that will be detrimental to the strength and water tightness of this finished joint. The couplings shall be assembled and installed in conformity with the recommendations and instructions of the manufacturer.
- D. Wrenches used shall be of a type and size recommended by the manufacturer. Bolts (or studs) shall be tightened so as to secure uniform gasket compression between the coupling and the body of the pipe with all bolts (or studs) tightened approximately the same amount. Final tightening shall be by hand (no air impact wrenches) and shall be complete when the coupling is in uniform contact around the circumference of the pipe.

### **3.02 INSTALLATION OF SLEEVE TYPE COUPLINGS**

- A. Sleeve type couplings shall not be installed in sections of restrained pipelines.

- B. Sleeve type couplings shall be installed in non-restrained sections of pipelines. Sleeves shall only be installed in locations as directed by the City's Authorized Representative.
- C. Prior to the installation of sleeve type couplings, the pipe ends shall be cleaned. A follower and gasket shall be slipped over each pipe and the middle ring shall be placed on the already laid pipe end until it is centered over the joint. The other pipe end shall be inserted into the middle ring and brought into proper position in relation to the pipe already laid. The gaskets and followers shall then be placed evenly and firmly into the middle ring flares. After the bolts have been inserted and all nuts have been made finger tight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint by use of a torque wrench of the appropriate size and torque for the bolts.

### **3.03 TESTING**

Pressure test the pipeline in accordance with Sections 02665, Water Mains and Accessories. There shall be no visible leakage allowed at any pipe joints that utilize couplings. Any visible leaks at coupled pipe joints shall be repaired to the satisfaction of the City's Authorized Representative.

### **3.04 CLEANING**

Prior to acceptance of the work of this Section, thoroughly clean all installed materials, equipment and related areas.

**+++ END OF SECTION 02690 +++**

**SECTION 02691  
VALVES AND APPURTENANCES**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.
- B. Items included under this Section are:
  - 1. Gate Valves
  - 2. Butterfly Valves
  - 3. Insert Valves
  - 4. Valve Boxes
  - 5. Tapping Sleeves and Gate Valves
  - 6. Meter Box Sampling Station
  - 7. Flange Insulating Gasket Kits
  - 8. Electronic Locating and Marking Systems

**1.02 SUBMITTALS**

The following specific information shall be provided:

- 1. Complete shop drawings of all valves and appurtenances
- 2. Manufacturer's certificate certifying that the products meet or exceed the specified requirements

**1.03 QUALITY CONTROL**

Reference Standards: The design, manufacturing and assembly of elements of the products herein specified shall comply with the applicable provisions and recommendations of the latest editions of the following standards, except as otherwise shown on the Drawings or otherwise specified.

- 1. ANSI/AWWA C504 – Rubber-Seated Butterfly Valves
- 2. ANSI/AWWA C509 – Resilient-Seated Gate Valves for Water Supply Service
- 3. ANSI/AWWA C515 – Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service.

4. ANSI/AWWA C550 – Protective Epoxy Interior Coatings for Valves and Hydrants.
5. ANSI/AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
6. ANSI/NSF Standard 61 – Drinking Water System Components – Health Effects

#### **1.04 DESCRIPTION OF SYSTEMS**

All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of water.

#### **1.05 TOOLS**

- A. Special tools, if required for normal operation and maintenance shall be supplied with the equipment.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS AND EQUIPMENT**

- A. All valves and appurtenances shall be of the size shown on the Drawings and all equipment of the same type shall be from one manufacturer.
- B. All valves and appurtenances shall have the name of the maker and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body.

#### **2.02 GATE VALVES (GV)**

- A. 20-Inches in Diameter and Smaller:
  1. Gate valves shall be resilient seated type conforming to the requirements of AWWA C509 or AWWA C515.
  2. Valves shall have a minimum working pressure of 250 psi.
  3. Valve manufacturer shall submit an affidavit to the City and/or City's Authorized Representative indicating valve compliance with all applicable AWWA standards.
  4. Valves less than 4-inches in diameter shall have threaded ends. Larger valves shall be mechanical joint unless shown otherwise on the Drawings.
  5. Valve shall be non-rising stem type with a 2-inch square operating nut and shall open right (clockwise).
  6. All internal and external ferrous surfaces shall be coated with epoxy to a minimum thickness of 4 mils. The epoxy shall conform to ANSI/AWWA C550 and shall be applied electrostatically prior to assembly. Epoxy shall be NSF61 approved.

7. Valve shall have a ductile iron body, bonnet and stuffing box. All joints between valve parts, such as body and bonnet, bonnet and bonnet cover, shall be supplied with O-ring seals.
8. Valve wedges shall be symmetrical, made of ductile iron and totally encapsulated in rubber. Rubber shall be permanently bonded to the wedge per ASTM D429.
9. Valves shall be manufactured by American Flow Control, Mueller, or M & H Valve.

**B. 24-Inches in Diameter and Larger:**

1. Gate valves shall be resilient seated type conforming to the requirements of AWWA C509 or AWWA C515.
2. Valves shall have a minimum working pressure of 250 psi.
3. Valve manufacturer shall submit an affidavit to the City and/or City's Authorized Representative indicating valve compliance with all applicable AWWA standards.
4. Valves shall be designed for horizontal installation with tracks and rollers, bypass valves, and bevel gear type operator.
5. Valve ends shall be mechanical joint type except where restrained joint ends are shown. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.
6. Valve shall be non-rising stem type with a 2-inch square operating nut and shall open right (clockwise).
7. All internal and external ferrous surfaces shall be coated with epoxy to a minimum thickness of 4 mils. The epoxy shall conform to ANSI/AWWA C550 and shall be applied electrostatically prior to assembly. Epoxy shall be NSF61 approved.
8. Valve shall have a ductile iron body, bonnet and stuffing box. All joints between valve parts, such as body and bonnet, bonnet and bonnet cover, shall be supplied with O-ring seals.
9. Valve wedge shall be symmetrical, made of ductile iron and totally encapsulated in rubber. Rubber shall be permanently bonded to the wedge per ASTM D429.
10. Valves shall be non-rising stem type with a 2-inch square operating nut and shall open right (clockwise).
11. Valves shall be manufactured by American Flow Control, Mueller, or M & H Valve.

**2.03 BUTTERFLY VALVES (BV)**

**A. Class 150 Valves:**

1. Class 150 butterfly valves shall be short body design and shall be designed, manufactured and tested in accordance with the requirements of ANSI/AWWA C504 for Class 150B butterfly valves.



2. Valve bodies shall be ductile iron conforming to ASTM A536, Grade 65-45-12 or ASTM A126, Grade B cast iron. Shafts shall be ASTM A276, Type 304 stainless steel, machined and polished. Valve discs shall be ductile iron, ASTM A536, Grade 65-45-12 or ASTM A126, Grade B cast iron.
3. The valve shall have a resilient seat.
4. Valve shall have a 2-inch square operating nut and shall open right (clockwise).

B. Class 250 Valves:

1. Class 250 butterfly valves shall be short body design and shall be designed, manufactured, and tested in accordance with the requirements of ANSI/AWWA C504 for class 250B butterfly valves.
2. Valve bodies shall be ductile iron conforming to ASTM A536, Grade 65-45-12 or ASTM A126, Grade B cast iron. Shafts and shaft hardware shall be ASTM A564, Type 630 stainless steel, machined and polished. Valve discs shall be ductile iron, ASTM A536, Grade 65-45-12.
3. The valve shall have a resilient seat.
4. Valve shall have a 2-inch square operating nut and shall open right (clockwise).
5. ANSI/AWWA C504 Section 5.1 testing requirements for class 250 valves shall be modified as follows:
  - a. The leakage test shall be performed at a pressure of 250 psi.
  - b. The hydrostatic test shall be performed at a pressure of 500 psi.
  - c. Proof of design tests shall be performed and certification of such proof of design test shall be provided to the City and/or City's Authorized Representative.

C. 24-inch and larger valves shall have a resilient seat that is located either on the valve disc or in the valve body. The valve seat shall be fully field adjustable and field replaceable.

D. Valves shall be installed with the valve shafts horizontal. Valves and actuators shall have seals on all shafts and gaskets on valve actuator covers to prevent the entry of water. Actuator mounting brackets shall be totally enclosed and shall have gasket seals.

E. Actuators

1. Valves shall be equipped with traveling nut, self-locking type actuators designed, manufactured and tested in accordance with ANSI/AWWA C504. Actuators shall be capable of holding the valve disc in any position between full open and full closed without any movement or fluttering of the disc.
2. Actuators shall be furnished with fully adjustable mechanical stop-limiting devices to prevent over travel of the valve disc in the open and closed positions. Actuators that utilize the sides

of the actuator housing to limit disc travel are unacceptable.

3. Valve actuators shall be capable of withstanding a minimum of 450-foot pounds of input torque in either the open or closed position without damage.
- F. The valve actuator shall be factory mounted on the valve by the valve manufacturer and shipped to the project site as a complete operating unit. Valve shall be designed to open right (clockwise).
- G. Valve ends shall be mechanical joint type, except where flanged or restrained joint ends are shown on the Drawings. Flange joints shall meet the requirements of ANSI B16.1, Class 125.
- H. Butterfly valves shall be manufactured by Mueller, Pratt, M&H, Val-Matic, Rodney Hunt, or DeZurik.

#### **2.04 BYPASS VALVES AND PIPING**

- A. Where shown on the Drawings, valves 24-inches in diameter and larger shall be installed with bypass piping and valve as specified in the following table:

Valve Diameter (Inches)	Bypass Valve and Pipe Diameter (Inches)
24	4
30	4
36	6
42	6
48	8
54	8
60	10

#### **2.05 INSERT VALVES (IV)**

- A. Insert valves shall be a resilient seat wedge gate valve. Valve design shall allow the valve to be installed in an existing pressurized pipeline.
- B. The valve shall have a ductile iron body, bonnet and wedge suitable for a design working pressure of 250 psi. Valve shall meet the requirements of ANSI/AWWA C515. Ductile iron shall meet the requirements of ASTM A536, Grade 65-45-12.
- C. Valves 12-inches and smaller shall be capable of working on cast iron or ductile iron, class A, B, C and D pipe diameters without changing either top or bottom portion of the split valve assembly.
- D. Resilient Wedge Gate Assembly
  1. The construction of the resilient wedge shall comply with ANSI/AWWA C509.
  2. The ductile iron wedge shall be fully encapsulated with EPDM rubber by a high pressure and high temperature compression or injection mold process. There shall be no exposed trim.
  3. The resilient wedge shall seat on the valve body and not on the pipe to obtain the maximum seating and flow control results. The resilient wedge shall be totally independent of the carrier pipe. The resilient wedge shall not come into contact with the carrier pipe or depend on the

carrier pipe to create a seal.

4. Pressure equalization on the downstream or upstream side of the closed wedge shall not be necessary to open the valve.
5. The wedge shall be symmetrical and seal equally well with flow in both directions.
6. The resilient wedge shall ride inside the body channels to maintain wedge alignment throughout its travel to achieve maximum fluid control regardless of high or low flow pressure or velocity. The resilient wedge shall have more support than the operating stem as the resilient wedge enters and exits the water way.
7. Valve shall have an oversized and unobstructed flow way.

E. Fusion Bonded Epoxy

1. The insert valve shall be fully epoxy coated on the interior and exterior. The fusion bonded coating shall be applied prior to assembly so that all bolt holes and body-to-bonnet flange surfaces are fully epoxy coated.
2. Valve shall be coated with a minimum of 8 mils epoxy in compliance with ANSI/AWWA C550 and certified to ANSI/NSF 61.

F. Gaskets and Triple O-ring Seals

1. The insert valve shall have triple O-ring stem seals. Two O-rings shall be located above, and one O-ring located below the thrust collar.
2. The lower two O-rings shall provide a permanently sealed lubrication chamber. The upper O-ring shall insure that sand, dirt or grit cannot enter the valve to cause damage to the lower O-rings.
3. Side flange seals shall be of the O-ring type of either round, oval or rectangular cross-sectional shape.

G. Valve Stem and Thrust Washers

1. The gate valve stem and wedge nut shall be copper alloy in accordance with Section 4.4.5.1 of ANSI/AWWA C515
2. The stem shall have an integral thrust collar in accordance with Section 4.4.5.3 of ANSI/AWWA C515. Two-piece stem collars are not acceptable. The wedge nut shall be independent of the wedge and shall be held in place on three sides by the wedge to prevent possible misalignment.
3. Two thrust washers shall be used One shall be located above the stem thrust collar and the other below the stem collar.
4. The stem shall be non-rising type with AWWA standard turns.

- 5. Valve operating nut shall be 2-inches square in accordance with ASTM A126, Class B. Valve shall open right (clockwise)
- H. Hardware: Hardware materials shall develop the physical strength characteristics of ASTM A307 with dimensions conforming to ANSI B18.2.1
- I. Split Restraint Devices: Split restraint devices shall be as specified in Section 02665.
- J. The stuffing box, operating stem and resilient wedge (complete bonnet and moving parts) shall be removable and replaceable under pressure.

## **2.06 VALVE BOXES (VB) AND EXTENSION STEMS**

- A. All buried valves shall be equipped with valve boxes and lids unless access to the valve operator is provided by a manhole or vault.
- B. Valve boxes shall be gray cast iron two-piece screw type with drop lids. Valve boxes shall be adjustable a minimum of 6-inches up or down from the nominal required cover over the pipe. Valve boxes shall have a five and one quarter (5-1/4) inch inside diameter. Valve boxes shall be of sufficient length that the bottom flange of the lower belled portion of the box is below the valve operating nut. Cast iron risers shall be provided as necessary. Valve boxes shall be model 8550 as manufactured by East Jordan Iron Works or equal.
- C. Valve box lids shall be gray cast iron and shall have "WATER" cast into the top of the lid in 3/4-inch (minimum) raised letters. Valve box lids shall weigh a minimum of 13 pounds. Valve box lids shall be model 6800 as manufactured by East Jordan Iron Works or equal.
- D. Valve boxes, risers and lids shall be coated with black asphalt.
- E. All valves shall be furnished with extension stems if operating nut is greater than four feet deep, to bring the operating nut to within 24-inches of the top of the valve box. Connection to the valve shall be with a wrench nut coupling and a set screw to secure the coupling to the valve's operating nut. The coupling and square wrench nut shall be welded to the extension stem. Extension stems shall be stainless steel and shall be furnished by the valve manufacturer. Extension stems shall be sized by the valve manufacturer to withstand the maximum valve operator output.
- F. Where pavement exists, the box shall be adjusted to finished grade. When valves are located out of pavement, the box shall be adjusted to finished grade. A concrete pad shall be poured around the box as detailed on the Drawings.
- G. Stem guides shall be fully adjustable stem guides with bronze bushings, and shall be furnished by the valve manufacturer. Stem guides shall be installed as shown on the Drawings and shall conform to the extension guide spacing requirements as specified in AWWA/ANSI C501.

## **2.07 WRENCHES**

Four tee handled wrenches of suitable length shall be furnished to operate all valves.

## **2.08 VALVE MARKERS (VM)**

For installed valves, the Contractor shall furnish and install a concrete valve marker as detailed on the Drawings when directed by the City and/or City's Authorized Representative, except on hydrant isolation valves. Valve markers shall be stamped "WATER".

## **2.09 TAPPING SLEEVES AND GATE VALVES (TS&V)**

- A. Tapping sleeves for mains 12-inches in diameter and smaller shall be ductile iron of the split-sleeve, mechanical joint type. Tapping sleeves shall be equal to Mueller H-615.
- B. Tapping sleeves for mains larger than 12-inches shall be of all stainless-steel construction.
- C. The Contractor shall be responsible for determining the outside diameter of the pipe to be connected to prior to ordering the sleeve. The tapping sleeve shall be rated for 250 psi. working pressure
- D. Valves shall be gate valves as specified in Paragraph 2.02 of this Section, with a flanged connection to the tapping sleeve and a mechanical joint connection to the branch pipe. The tapping sleeve shall be supplied by the valve manufacturer.

## **2.10 METER BOX SAMPLING STATION**

- A. Sampling station shall be meter box, retrofit style. Inlet and outlet connections shall be standard 3/4-inch meter threads. The station shall consist of a standard meter resetter with the inlet leading up through the water system's residential meter, through a check valve and then out an outlet.
- B. The sampling station shall consist of a 1/2-inch lockable shut off valve leading to a valve riser and a 3/8-inch male quick disconnect valve. The valve and riser shall be positioned directly in line with the meter setter to avoid turning of the entire sampling station when pushing the sampling rod down on the valve.
- C. Sampling station parts shall be brass.
- D. Sampling station shall be furnished with a plastic PVC push on cap to protect the quick disconnect valve when not in use. The cap shall be sealed watertight with an O-ring below the quick disconnect valve.
- E. A portable sampling rod shall also be provided with each sampling station. The sampling rod shall be furnished with a female inlet which shall couple to the male quick coupling, and a quarter turn valve. The rod shall be brass and shall have two outlets, one for flushing and the other for sampling.
- F. The meter box sampling station and portable sampling rod shall be equal to Kupferle Foundry Company, Model 94WM

## **2.11 FLANGE INSULATION GASKET KITS**

- A. Flange insulating gasket kits shall be installed as required to isolate dissimilar metals when connecting to pipelines of different metal composition.
- B. Flange kits shall consist of insulation gaskets, insulating sleeves and washers, nuts and bolts.

## **2.12 ELECTRONIC LOCATING AND MARKING SYSTEMS**

- A. The Contractor shall furnish and install an electronic locating and marking system for all buried water main piping. System shall consist of electronic markers buried above the water main and stand-alone locators.
- B. The marker shall contain an antenna or three orthogonal tuned circuits. Electronic ball markers shall be made of high strength 4 1/2-inch (maximum) diameter plastic. Electronic ball markers shall be 3M EMS model 1403-XR as manufactured by 3M, Omni Markers as manufactured by Tempo or approved equal.
- C. Full range markers shall be equal to EMS model 1252 as manufactured by 3M or approved equal.
- D. The Contractor shall also furnish two (2) 3M Dynatel locators. Locators shall be 3M model 2250M-ID/UU3W-RT or approved equal.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the City and/or City's Authorized Representative before they are installed.
- B. Buried flanged or mechanical joints shall be made with cadmium plated bolts.
- C. Prior to installation, valves shall be inspected for direction of opening clockwise, number of turns to open, freedom of operation, tightness of pressure containing bolting and test plugs, cleanliness of valve ports and especially seating surfaces, handling damage and cracks. Defective valves shall be corrected or held for inspection by the City and/or City's Authorized Representative. Valves shall be closed before being installed.

### **3.02 LAYING AND JOINTING VALVES AND APPURTENANCES**

- A. Valves, fittings, plugs, and caps shall be set and joined to the pipe in accordance with the manufacturer's recommendations for cleaning, laying and joining pipe. Twelve (12) inch and larger valves shall be provided with special support, such as crushed stone, concrete pads or a tamped trench bottom so that the pipe will not be required to support the weight of the valve.
- B. In no case shall valves be used to bring misaligned pipe into alignment during installation. Pipe shall be supported in such a manner as to prevent stress on the valve.
- C. A valve box shall be provided on each buried valve. The valve box shall be set over the center of the valve operating nut and plumbed. The box shall not transmit shock or stress to the valve. The bottom portion of the lower belled portion of the box shall be placed below the valve operating nut. The flange shall be set on brick, so arranged that the weight of the valve box and superimposed loads will bear on the base and not on the valve or pipe. The valve box cover shall be flush with the surrounding surface or such other level as directed by the City and/or City's Authorized Representative.

- D. Underground valves shall be installed in vaults where indicated on the Drawings. The vault shall be precast or cast-in-place concrete as indicated on the Drawings. The valve box shall not transmit shock or stress to the valve and shall be as detailed on the Drawings. The valve vault cover shall be flush with the surface of the finished area or such other level as directed by the City and/or City's Authorized Representative.
- E. Settlement Joints: The first joint on all pipe connected to and outside of a valve vault shall be designed to allow differential settlement. The following joints will be allowed for settlement:
  - 1. Steel Pipe shall use a bolted, sleeve style coupling with joint harness as specified in AWWA M11.
  - 2. Ductile iron pipe shall use standard gasketed joints if unrestrained, or mechanically restrained gasketed joints if required by thrust restraint design.
- E. Pipe within 20 feet of each side of a direct-buried butterfly valve shall be protected from vertical deflection to protect proper function of butterfly valve. Vertical deflection of pipe shall be limited to butterfly valve manufacturer recommendation.

**3.03 PRESSURE RELIEF VALVES**

Pressure Relief Valves shall be installed in locations as directed by the City and/or City's Authorized Representative. Pressure Relief Valves shall not be connected to any sewer, submerged in any stream or creek, or be installed in any manner that will permit back siphonage into the water distribution system.

**3.04 ELECTRONIC LOCATING AND MARKING SYSTEM**

- A. The Contractor shall install a ball marker at each bend, tee, valve and 500 feet of pipe length installed.
- B. Ball markers shall be installed at a maximum depth of 5 feet.
- C. Ball markers shall be secured to the pipe with cable ties as shown on the Drawings and shall be installed in accordance with the manufacturer's instructions.
- D. Full range markers shall be installed on bends, tees, valves and pipe with 5-feet of cover or greater.

**3.05 TESTING**

After installation, all valves and appurtenances shall be tested at least 1 hour at 250 psi, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the City and/or City's Authorized Representative.

+++ **END OF SECTION 02691** +++

**SECTION 02920  
SITE RESTORATION**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. The Contractor shall provide all, labor, materials, equipment and incidentals required for all site restoration and related operations necessary shown on the Drawings or specified in these Specifications.
- B. This section includes disposition of materials and structures encountered in the Work, all cleanup and any other similar, incidental, or appurtenant operations which may be necessary to properly complete the Work.

**1.02 SUBMITTALS**

Submittals shall be made in accordance with the requirements of the General Conditions of the Contract Documents. In addition, the following specific information shall be provided:

- 1. The Contractor shall submit certificates of inspection as required by government authorities. The Contractor shall submit other data substantiating that materials comply with specified requirements.
- 2. The Contractor shall submit instructions recommending procedures to be established by the City for maintenance of site restoration work for one (1) full year.

**1.03 QUALITY ASSURANCE**

- A. The Contractor shall ship site restoration materials with certificates of inspection required by authorities having jurisdiction. The Contractor shall comply with regulations applicable to site restoration materials.
- B. If specified site restoration materials are not obtainable, the Contractor shall submit proof of non-availability to the Engineer together with proposal for use of equivalent material.

**1.04 SAFETY REQUIREMENTS**

- A. Hazards Control:
  - 1. The Contractor shall store volatile wastes in covered metal containers and remove from the site of the Work daily.
  - 2. The Contractor shall prevent accumulation of wastes that create hazardous conditions.



3. The Contractor shall provide adequate ventilation during use of volatile or noxious substances.
- B. The Contractor shall conduct cleaning and disposal operations in compliance with local ordinances and environmental laws and regulations.
1. The Contractor shall not burn or bury rubbish and waste materials on the site of the Work without prior written permission from the Engineer.
  2. The Contractor shall not dispose of volatile wastes such as mineral spirits, oil, or fuel in open drainage ditches or storm or sanitary drains.

### **1.05 DELIVERY**

The Contractor shall deliver packaged materials in containers showing weight, analysis, and name of manufacturer. The Contractor shall protect materials from deterioration during delivery and while stored at the site of the Work.

## **PART 2 PRODUCTS**

(NOT USED)

## **PART 3 EXECUTION**

### **3.01 DISPOSITION OF MATERIALS AND STRUCTURES ENCOUNTERED IN THE WORK**

- A. Existing materials or structures that may be encountered (within the lines, grades, or trenching sections established for completion of the Work), if unsuitable or unacceptable to the Engineer for use in the Work, and for which the disposition is not otherwise specified, shall either be disposed of by the Contractor or shall remain the property of the City as further provided in this section.
- B. At the option of the City, any existing materials or structures of "value" encountered in the Work shall remain the property of the City. The term "value" shall be defined by the City.
- C. Any existing materials or structures encountered in the Work and determined not to be of "value" by the City, shall be disposed of by the Contractor, in an approved manner.

### **3.02 JOB CONDITIONS**

- A. The Contractor shall determine the locations of underground utilities and perform Work in a manner which will avoid possible damage. The Contractor shall hand excavate, as required. The Contractor shall maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
- B. All bare earth areas within the limit of work shall be grassed, mulched, or covered with other plant material as shown on the Drawings.
- C. On a continuous basis, the Contractor shall maintain the site of the Work free from accumulations

of waste, debris, and rubbish caused by his operations.

- D. At completion of the Work, the Contractor shall remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces. The Contractor shall leave the site of the Work clean and ready for occupancy or use.
- E. The Contractor shall proceed with the complete site restoration work as rapidly as portions of the site of the Work become available, working within seasonal limitations for each kind of site restoration work required. The Contractor will not be allowed to postpone cleanup and seeding or sodding until the end of the Work.
- F. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, the Contractor shall notify the Engineer before planting.
- G. The Contractor shall install materials during normal planting seasons for each type of site restoration work.
- H. The Contractor shall plant or replace trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to the Engineer. If planting of trees and shrubs occurs after lawn work, the Contractor shall protect lawn areas and promptly repair damage to lawns resulting from planting operations. Refer to Section 02900, Trees, Plants and Ground Covers.
- I. The Contractor may, at his option, employ additional measures (other than those specified) to prevent loss of, or damage to the Work resulting from the effects of wind and/or water. No additional compensation will be made for the employment of such additional measures.

### **3.03 CLEANUP**

- A. During site restoration work, the Contractor shall keep pavements clean and the site of the Work in an orderly condition.
- B. The Contractor shall protect site restoration work and materials from damage due to site restoration operations, operations by other contractors, and trades and trespassers. The Contractor shall maintain protection during installation and maintenance periods. The Contractor shall treat, repair, or replace damaged site restoration work as directed by the Engineer.
- C. Immediately upon completion of any section of the Work and before payment therefore has been made, the Contractor shall remove from the site of the Work all construction equipment, temporary structures, and debris, and shall restore the site of the Work to a condition equal to or better than that which existed prior to construction. Waste materials shall be disposed of at locations satisfactory to the City or affected regulatory agencies.
- D. The Contractor shall not remove barricades and warning and direction signs until directed by the Engineer.
- E. After completion of all Work required by the Contract and before final payment has been made,

the Contractor shall make a final cleanup of each separate part of the Work; shall restore all surfaces to a neat and orderly condition; and shall remove all construction equipment, tools, and supplies.

### **3.04 INSPECTION AND ACCEPTANCE**

- A. When site restoration work is completed, including maintenance, the Engineer will, upon request, make an inspection to determine acceptability.
- B. Where inspected site restoration work does not comply with the requirements of the Engineer, the Contractor shall replace rejected work and continue specified maintenance until reinspected by the Engineer and found to be acceptable. The Contractor shall remove rejected plants and materials promptly from the site of the Work.

**+++ END OF SECTION 02920 +++**

**SECTION 03100**  
**CONCRETE FORMWORK**

**PART 1 -- GENERAL**

**1.01 THE REQUIREMENT**

Provide materials, labor, and equipment required for the design and construction of all concrete formwork, bracing, shoring and supports in accordance with the provisions of the Contract Documents.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 03200 - Reinforcing Steel
- B. Section 03250 - Concrete Accessories
- C. Section 03290 - Joints in Concrete
- D. Section 03300 - Cast-in-Place Concrete

**1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS**

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
  - 1. Georgia State Minimum Standard Building Code
  - 2. ACI 318 - Building Code Requirements for Structural Concrete
  - 3. ACI 301 - Specifications for Structural Concrete for Buildings
  - 4. ACI 347 - Recommended Practice for Concrete Formwork
  - 5. U.S. Product Standard for Concrete Forms, Class I, PS 1
  - 6. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials

**1.04 SUBMITTALS**

- A. Submit the following in accordance with Section 01300, Submittals.
  - 1. Manufacturer's data on proposed form release agent
  - 2. Manufacturer's data on proposed formwork system including form ties

## **1.05 QUALITY ASSURANCE**

Concrete formwork shall be in accordance with ACI 301, ACI 318, and ACI 347.

## **PART 2 -- PRODUCTS**

### **2.01 FORMS AND FALSEWORK**

- A. All forms shall be smooth surface forms unless otherwise specified.
- B. Wood materials for concrete forms and falsework shall conform to the following requirements:
  - 1. Lumber for bracing, shoring, or supporting forms shall be Douglas Fir or Southern Pine, construction grade or better, in conformance with U.S. Product Standard PS20. All lumber used for forms, shoring or bracing shall be new material.
  - 2. Plywood for concrete formwork shall be new, waterproof, synthetic resin bonded, exterior type Douglas Fir or Southern Pine high density overlaid (HDO) plywood manufactured especially for concrete formwork and shall conform to the requirements of PS1 for Concrete Forms, Class I, and shall be edge sealed. Thickness shall be as required to support concrete at the rate it is placed, but not less than 5/8-inch thick.
- C. Other form materials such as metal, fiberglass, or other acceptable material that will not adversely affect the concrete and will facilitate placement of concrete to the shape, form, line and grade indicated may be submitted to the Engineer for approval, but only materials that will produce a smooth form finish equal or better than the wood materials specified will be considered.

### **2.02 FORMWORK ACCESSORIES**

- A. Form ties shall be provided with a plastic cone or other suitable means for forming a conical hole to insure that the form tie may be broken off back of the face of the concrete. The maximum diameter of removable cones for rod ties, or of other removable form-tie fasteners having a circular cross-section, shall not exceed 7/8-inch, and all such fasteners shall be such as to leave holes of regular shape for reaming.

- B. Form ties for water-retaining structures shall have integral waterstops. Removable taper ties may be used when acceptable to the Engineer. A preformed mechanical EPDM rubber plug shall be used to seal the hole left after the removal of the taper tie. Plug shall be X-Plug by the Greenstreak Group, Inc., or approved equal. Friction fit plugs shall not be used.
- C. Form release agent shall be a blend of natural and synthetic chemicals that employs a chemical reaction to provide quick, easy and clean release of concrete from forms. It shall not stain the concrete and shall leave the concrete with a paintable surface. Formulation of the form release agent shall be such that it would minimize formation of "bug holes" in cast-in-place concrete.

### **PART 3 -- EXECUTION**

#### **3.01 FORM DESIGN**

- A. Forms and falsework shall be designed for total dead load, plus all construction live load as outlined in ACI 347. Design and engineering of formwork and safety considerations during construction shall be the responsibility of the Contractor.
- B. Forms shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete. The maximum deflection of facing materials reflected in concrete surfaces exposed to view shall be 1/240 of the span between structural members.
- C. All forms shall be designed for predetermined placing rates per hour, considering expected air temperatures and setting rates.

#### **3.02 CONSTRUCTION**

- A. The type, size, quality, and strength of all materials from which forms are made shall be subject to the approval of the Engineer. No falsework or forms shall be used which are not clean and suitable. Deformed, broken or defective falsework and forms shall be removed from the work.
- B. Forms shall be smooth and free from surface irregularities. Suitable and effective means shall be provided on all forms for holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation of ridges, fins, offsets, or similar surface defects in the finished concrete. Joints between the forms shall be sealed to eliminate any irregularities. The arrangement of the facing material shall be orderly and symmetrical, with the number of seams kept to a practical minimum.
- C. Forms shall be true to line and grade, and shall be sufficiently rigid to prevent displacement and sagging between supports. Curved forms shall be used for curved and circular structures. Straight panels joined at angles will not be acceptable for forming curved structures. Forms shall be properly braced or tied together to maintain their position and

shape under a load of freshly-placed concrete. Facing material shall be supported with studs or other backing which shall prevent both visible deflection marks in the concrete and deflections beyond the tolerances specified.

- D. Forms shall be mortar tight so as to prevent the loss of water, cement and fines during placing and vibrating of the concrete. Specifically, the bottom of wall forms that rest on concrete footings or slabs shall be provided with a gasket to prevent loss of fines and paste during placement and vibration of concrete. Such gasket may be a 1 to 1-1/2 inch diameter polyethylene rod held in position to the underside of the wall form.
- E. All vertical surfaces of concrete members shall be formed, and side forms shall be provided for all footings, slab edges and grade beams, except where placement of the concrete against the ground is called for on the Drawings. Not less than 1-inch of concrete shall be added to the thickness of the concrete member as shown where concrete is permitted to be placed against trimmed ground in lieu of forms. Such permission will be granted only for members of comparatively limited height and where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing until the concrete has been placed.
- F. All forms shall be constructed in such a manner that they can be removed without hammering or prying against the concrete. Wood forms shall be constructed for wall openings to facilitate loosening and to counteract swelling of the forms.
- G. Adequate clean-out holes shall be provided at the bottom of each lift of forms. Temporary openings shall be provided at the base of column forms and wall forms and at other points to facilitate cleaning and observation immediately before the concrete is deposited. The size, number and location of such clean-outs shall be as acceptable to the Engineer.
- H. Construction joints shall not be permitted at locations other than those shown or specified, except as may be acceptable to the Engineer. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete. For flush surfaces at construction joints exposed to view, the contact surface of the form sheathing over the hardened concrete in the previous placement shall be lapped by not more than 1 inch. Forms shall be held against hardened concrete to prevent offset or loss of mortar at construction joints and to maintain a true surface.
- I. The formwork shall be cambered to compensate for anticipated deflections in the formwork due to the weight and pressure of the fresh concrete and due to construction loads. Set forms and intermediate screed strips for slabs accurately to produce the designated elevations and contours of the finished surface. Ensure that edge forms and screed strips are sufficiently strong to support vibrating screeds or roller pipe screeds if the nature of the finish specified requires the use of such equipment. When formwork is cambered, set screeds to a like camber to maintain the proper concrete thickness.

- J. Positive means of adjustment (wedges or jacks) for shores and struts shall be provided and all settlement shall be taken up during concrete placing operation. Shores and struts shall be securely braced against lateral deflections. Wedges shall be fastened firmly in place after final adjustment of forms prior to concrete placement. Formwork shall be anchored to shores or other supporting surfaces or members to prevent upward or lateral movement of any part of the formwork system during concrete placement. If adequate foundation for shores cannot be secured, trussed supports shall be provided.
- K. Runways shall be provided for moving equipment with struts or legs. Runways shall be supported directly on the formwork or structural member without resting on the reinforcing steel.

### 3.03 TOLERANCES

- A. Unless otherwise indicated in the Contract Documents, formwork shall be constructed so that the concrete surfaces will conform to the tolerance limits listed in ACI 117.
- B. Structural framing of reinforced concrete around elevators and stairways shall be accurately plumbed and located within 1/4 in. tolerance from established dimensions.
- C. The Contractor shall establish and maintain in an undisturbed condition and until final completion and acceptance of the project, sufficient control points and bench marks to be used for reference purposes to check tolerances. Plumb and string lines shall be installed before concrete placement and shall be maintained during placement. Such lines shall be used by Contractor's personnel and by the Engineer and shall be in sufficient number and properly installed. During concrete placement, the Contractor shall continually monitor plumb and string line form positions and immediately correct deficiencies.
- D. Regardless of the tolerances specified, no portion of the building shall extend beyond the legal boundary of the building.

### 3.04 FORM ACCESSORIES

- A. Suitable moldings shall be placed to bevel or round all exposed corners and edges of beams, columns, walls, slabs, and equipment pads. Chamfers shall be 3/4 inch unless otherwise noted.
- B. Form ties shall be so constructed that the ends, or end fasteners, can be removed without causing appreciable spalling at the faces of the concrete. After ends, or end fasteners of form ties have been removed, the embedded portion of the ties shall terminate not less than 2 inches from the formed face of the concrete that is exposed to water or enclosed surfaces above the water surface, and not less than 1 inch from the formed face of all other concrete. Holes left by the removal of form tie cones shall be reamed with suitable toothed reamers so as to leave the surface of the holes clean and rough before being filled with mortar as specified in Section 03350 - Concrete Finishing. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such



manner as to leave a hole extending through the interior of the concrete member. The use of snap-ties which cause spalling of the concrete upon form stripping or tie removal will not be permitted. No snap ties shall be broken off until the concrete is at least three days old. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste.

### 3.05 APPLICATION - FORM RELEASE AGENT

Forms for concrete surfaces that will not be subsequently waterproofed shall be coated with a form release agent. Form release agent shall be applied on formwork in accordance with manufacturer's recommendations.

### 3.06 INSERTS AND EMBEDDED ITEMS

Sleeves, pipe stubs, inserts, anchors, expansion joint material, waterstops, and other embedded items shall be positioned accurately and supported against displacement prior to concreting. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable material to prevent the entry of concrete into the voids.

### 3.07 FORM CLEANING AND REUSE

The inner faces of all forms shall be thoroughly cleaned prior to concreting. Forms may be reused only if in good condition and only if acceptable to the Engineer. Light sanding between uses will be required wherever necessary to obtain uniform surface texture. Unused tie rod holes in forms shall be covered with metal caps or shall be filled by other methods acceptable to the Engineer.

### 3.08 FORM REMOVAL AND SHORING

- A. Forms shall not be disturbed until the concrete has attained sufficient strength. Sufficient strength shall be demonstrated by structural analysis considering proposed loads, strength of forming and shoring system, and concrete strength data. Shoring shall not be removed until the supported member has acquired sufficient strength to support its weight and the load upon it. Members subject to additional loads during construction shall be adequately shored to sustain all resulting stresses. Forms shall be removed in such manner as not to impair safety and serviceability of the structure. All concrete to be exposed by form removal shall have sufficient strength not to be damaged thereby.
- B. Provided the strength requirements specified above have been met and subject to the Engineer's approval, forms may be removed at the following minimum times. The Contractor shall assume full responsibility for the strength of all such components from which forms are removed prior to the concrete attaining its full design compressive strength. Shoring may be required at the option of the Engineer beyond these periods.

### **Ambient Temperature (°F.) During Concrete Placement**

	<u>Over 95°</u>	<u>70°-95°</u>	<u>60°-70°</u>	<u>50°-60°</u>	<u>Below 50°</u>
Walls	5 days	2 days	2 days	3 days	Do not remove until directed by Engineer (7 days minimum)
Columns	7 days	2 days	3 days	4 days	
Beam Soffits	10 days	7 days	7 days	7 days	
Elevated Slabs	12 days	7 days	7 days	7 days	

- C. When, in the opinion of the Engineer, conditions of the work or weather justify, forms may be required to remain in place for longer periods of time.
- D. An accurate record shall be maintained by the Contractor of the dates of concrete placings and the exact location thereof and the dates of removal of forms. These records shall be available for inspection at all times at the site, and two copies shall be furnished the Engineer upon completion of the concrete work.

### 3.09 RESHORING

- A. When reshoring is permitted or required the operations shall be planned in advance and subjected to approval by the Engineer.
- B. Reshores shall be placed after stripping operations are complete but in no case later than the end of the working day on which stripping occurs.
- C. Reshoring for the purpose of early form removal shall be performed so that at no time will large areas of new construction be required to support their own weight. While reshoring is under way, no construction or live loads shall be permitted on the new construction. Reshores shall be tightened to carry their required loads but they shall not be overtightened so that the new construction is overstressed. Reshores shall remain in place until the concrete has reached its specified 28-day strength, unless otherwise specified.
- D. For floors supporting shores under newly placed concrete, the original supporting shores shall remain in place or reshores shall be placed. The shoring or reshoring system shall have a capacity sufficient to resist the anticipated loads and in all cases shall have a capacity equal to at least one-half of the capacity of the shoring system above. Reshores shall be located directly under a reshore position above unless other locations are permitted.
- E. In multi-story buildings, reshoring shall extend over a sufficient number of stories to distribute the weight of newly placed concrete, forms, and construction live loads so the design superimposed loads of the floors supporting shores are not exceeded.

**+++ END OF SECTION 03100 +++**

**SECTION 03200**  
**REINFORCING STEEL**

**PART 1 -- GENERAL**

**1.01 THE REQUIREMENTS**

- A. Provide all concrete reinforcing including all cutting, bending, fastening and any special work necessary to hold the reinforcing steel in place and protect it from injury and corrosion in accordance with the requirements of this section.
- B. Provide deformed reinforcing bars to be grouted into reinforced concrete masonry walls.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 03100 - Concrete Formwork
- B. Section 03250 - Concrete Accessories
- C. Section 03300 - Cast-in-Place Concrete

**1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS**

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
  - 1. Georgia State Minimum Standard Building Code
  - 2. CRSI - Concrete Reinforcing Institute Manual of Standard Practice
  - 3. ACI SP66 - ACI Detailing Manual
  - 4. ACI 315 - Details and Detailing of Concrete Reinforcing
  - 5. ACI 318 - Building Code Requirements for Structural Concrete
  - 6. ICC-ES AC193 Acceptance Criteria for Expansion and Screw Anchors (Concrete)
  - 7. WRI - Manual of Standard Practice for Welded Wire Fabric

8. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcing
9. ASTM A 1064- Standard Specification for Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete

#### **1.04 SUBMITTALS**

- A. Submit the following in accordance with Section 01300, Submittals.
  1. Detailed placing and shop fabricating drawings, prepared in accordance with ACI 315 and ACI Detailing Manual - (SP66), shall be furnished for all concrete reinforcing. These drawings shall be made to such a scale as to clearly show joint locations, openings, and the arrangement, spacing and splicing of the bars.
  2. Mill test certificates - 3 copies of each.
  3. Description of the reinforcing steel manufacturer's marking pattern.
  4. Requests to relocate any bars that cause interferences or that cause placing tolerances to be violated.
  5. Proposed supports for each type of reinforcing.
  6. Request to use splices not shown on the Drawings.
  7. Request to use mechanical couplers along with manufacturer's literature on mechanical couplers with instructions for installation, and certified test reports on the couplers' capacity.
  8. Request for placement of column dowels without the use of templates.
  9. Request and procedure to field bend or straighten partially embedded reinforcing.
  10. International Code Council–Evaluation Services Report (ICC-ES ESR) for dowel adhesives.
  11. Certification that all installers of dowel adhesive are certified as Adhesive Anchor Installers in accordance with the ACI-CRSI Anchor Installer Certification Program.
  12. Adhesive dowel testing plan.

#### **1.05 QUALITY ASSURANCE**

- A. If requested by the Engineer, the Contractor shall provide samples from each load of reinforcing steel delivered in a quantity adequate for testing. Costs of initial tests will be paid by the Owner. Costs of additional tests due to material failing initial tests shall be paid by the Contractor.
- B. Provide a list of names of all installers who are trained by the Manufacturer's Field Representative on this jobsite prior to installation of products. Record must include the installer name, date of training, products included in the training and trainer name and contact information.
- C. Provide a copy of the current ACI/CRSI "Adhesive Anchor Installer" certification cards for all installers who will be installing adhesive anchors in the horizontal to vertically overhead orientation.
- D. Special inspections for adhesive dowels shall be conducted in accordance with the manufacturer's instructions and Specification Section 01450. Downward installations require periodic inspection and horizontal and overhead installations require continuous inspection.

## PART 2 -- PRODUCTS

### 2.01 REINFORCING STEEL

- A. Bar reinforcing shall conform to the requirements of ASTM A 615 for Grade 60 Billet Steel reinforcing. All reinforcing steel shall be from domestic mills and shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type and grade. All reinforcing bars shall be deformed bars. Smooth reinforcing bars shall not be used unless specifically called for on Drawings.
- B. Welded wire fabric reinforcing shall conform to the requirements of ASTM A 1064 and the details shown on the Drawings.
- C. A certified copy of the mill test on each load of reinforcing steel delivered showing physical and chemical analysis shall be provided, prior to shipment. The Engineer reserves the right to require the Contractor to obtain separate test results from an independent testing laboratory in the event of any questionable steel. When such tests are necessary because of failure to comply with this Specification, such as improper identification, the cost of such tests shall be borne by the Contractor.
- D. Field welding of reinforcing steel will not be allowed.
- E. Use of coiled reinforcing steel will not be allowed.

### 2.02 ACCESSORIES

- A. Accessories shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers and other devices to position reinforcing during concrete placement. Wire bar supports shall be plastic protected (CRSI Class 1).
- B. Concrete blocks (dobies), used to support and position bottom reinforcing steel, shall have the same or higher compressive strength as specified for the concrete in which it is located.

#### 2.03 MECHANICAL COUPLERS

- A. Mechanical couplers shall develop a tensile strength which exceeds 100 percent of the ultimate tensile strength and 125 percent of the yield strength of the reinforcing bars being spliced. The reinforcing steel and coupler used shall be compatible for obtaining the required strength of the connection.
- B. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be supplied.
- C. Hot forged sleeve type couplers shall not be used. Acceptable mechanical couplers are Dayton Superior Dowel Bar Splicer System by Dayton Superior, Dayton, Ohio, or approved equal. Mechanical couplers shall only be used where shown on the Drawings or where specifically approved by the Engineer.
- D. Where the threaded rebar to be inserted into the coupler reduces the diameter of the bar, the threaded rebar piece shall be provided by the coupler manufacturer.

#### 2.04 DOWEL ADHESIVE SYSTEM

- A. Where shown on the Drawings, reinforcing bars anchored into hardened concrete with a dowel adhesive system shall use a two-component adhesive mix which shall be injected with a static mixing nozzle following manufacturer's instructions.
- B. All holes shall be drilled in accordance with the manufacturer's instructions except that core drilled holes shall not be permitted unless specifically allowed by the Engineer. Cored holes, if allowed by the manufacturer and approved by the Engineer, shall be roughened in accordance with manufacturer's requirements.
- C. Thoroughly clean drill holes of all debris, drill dust, and water in accordance with manufacturer's instructions prior to installation of adhesive and reinforcing bar.
- D. Degree of hole dampness shall be in strict accordance with manufacturer recommendations. Installation conditions shall be either dry or water-saturated. Water filled or submerged holes shall not be permitted unless specifically approved by the Engineer.
- E. Injection of adhesive into the hole shall be performed in a manner to minimize the formation of air pockets in accordance with the manufacturer's instructions.

F. Embedment Depth:

1. The embedment depth of the bar shall be as shown on the Drawings. Although all manufacturers listed below are permitted, the embedment depth shown on the Drawings is based on "Pure 110+" by DeWalt" ESR 3298 issued 7/2016. If the Contractor submits one of the other named dowel adhesives from the list below, the Engineer shall evaluate the required embedment and the Contractor shall provide the required embedment depth stipulated by the Engineer specific to the approved dowel adhesive.
2. Where the embedment depth is not shown on the Drawings, the embedment depth shall be determined to provide the minimum allowable bond strength equal to the tensile strength of the rebar according to the manufacturer's ICC-ES ESR.
3. The embedment depth shall be determined using the actual concrete compressive strength, a cracked concrete state, maximum long term temperature of 110 degrees F, and maximum short term temperature of 140 degrees F. In no case shall the embedment depth be less than the minimum, or more than the maximum, embedment depths stated in the manufacturer's ICC-ES ESR.

G. Engineer's approval is required for use of this system in locations other than those shown on the Drawings.

H. The adhesive system shall be IBC compliant for use in both cracked and uncracked concrete in all Seismic Design Categories and shall be "Epcon C6+ Adhesive Anchoring System" as manufactured by ITW Redhead, " HIT-HY 200 Adhesive Anchoring System" as manufactured by Hilti, Inc. "SET-XP Epoxy Adhesive Anchors" as manufactured by Simpson Strong-Tie Co. or "Pure 110+ Epoxy Adhesive Anchor System" by DeWalt. Fast-set epoxy formulations shall not be acceptable. No or equal products will be considered, unless pre-qualified and approved.

I. All individuals installing dowel adhesive system shall be certified as an Adhesive Anchor Installer in accordance with the ACI-CRSI Anchor Installation Certification Program.

## PART 3 – EXECUTION

### 3.01 TEMPERATURE REINFORCING

Unless otherwise shown on the Drawings or in the absence of the concrete reinforcing being shown, the minimum cross sectional area of horizontal and vertical concrete reinforcing in walls shall be 0.0033 times the gross concrete area and the minimum cross sectional area of reinforcing perpendicular to the principal reinforcing in slabs shall be 0.0020 times the gross concrete area. Temperature reinforcing shall not be spaced further apart than five times the slab or wall thickness, nor more than 18 inches.

### 3.02 FABRICATION

- A. Reinforcing steel shall be accurately formed to the dimensions and shapes shown on the Drawings and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings.
- B. The Contractor shall fabricate reinforcing bars for structures in accordance with the bending diagrams, placing lists and placing Drawings.
- C. No fabrication shall commence until approval of Shop Drawings has been obtained. All reinforcing bars shall be shop fabricated unless approved to be bent in the field. Reinforcing bars shall not be straightened or rebent in a manner that will injure the material. Heating of bars will not be permitted.
- D. Welded wire fabric with longitudinal wire of W9.5 size or smaller shall be either furnished in flat sheets or in rolls with a core diameter of not less than 10 inches. Welded wire fabric with longitudinal wires larger than W9.5 size shall be furnished in flat sheets only.

### 3.03 DELIVERY, STORAGE AND HANDLING

- A. All reinforcing shall be neatly bundled and tagged for placement when delivered to the job site. Bundles shall be properly identified for coordination with mill test reports.
- B. Reinforcing steel shall be stored above ground on platforms or other supports and shall be protected from the weather at all times by suitable covering. It shall be stored in an orderly manner and plainly marked to facilitate identification.
- C. Reinforcing steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.
- D. The surfaces of all reinforcing steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar and other foreign substances immediately before the concrete is placed. Where there is delay in depositing concrete, reinforcing shall be reinspected and if necessary recleaned.

### 3.04 PLACING

- A. Reinforcing steel shall be accurately positioned as shown on the Drawings and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcing steel shall be supported by concrete, plastic or plastic protected (CRSI Class 1) metal supports, spacers or metal hangers which are strong and rigid enough to prevent any displacement of the reinforcing steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the reinforcing bars without settlement. In no case shall concrete block supports be continuous.



- B. The portions of all accessories in contact with the formwork shall be made of plastic or steel coated with a 1/8 inch minimum thickness of plastic which extends at least 1/2 inch from the concrete surface. Plastic shall be gray in color.
- C. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.
- D. Reinforcing bars additional to those shown on the Drawings, which may be found necessary or desirable by the Contractor for the purpose of securing reinforcing in position, shall be provided by the Contractor at no additional cost to the Owner.
- E. Reinforcing placing, spacing, and protection tolerances shall be within the limits specified in ACI 318 except where in conflict with the Building Code, unless otherwise specified.
- F. Reinforcing bars may be moved within one bar diameter as necessary to avoid interference with other concrete reinforcing, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed placing tolerances, the resulting arrangement of bars shall be as acceptable to the Engineer.
- G. Welded wire fabric shall be supported on slab bolsters spaced not less than 30 inches on centers, extending continuously across the entire width of the reinforcing mat and supporting the reinforcing mat in the plane shown on the Drawings.
- H. Reinforcing shall not be straightened or rebent unless specifically shown on the drawings. Bars with kinks or bends not shown on the Drawings shall not be used. Coiled reinforcement shall not be used.
- I. Dowel Adhesive System shall be installed in strict conformance with the manufacturer's recommendations and as required in Article 2.04 above. A representative of the manufacturer must be on site prior to adhesive dowel installation to provide instruction on proper installation procedures for all adhesive dowel installers. Testing of adhesive dowels shall be as indicated below. If the dowels have a hook at the end to be embedded in subsequent work, an approved mechanical coupler shall be provided at a convenient distance from the face of existing concrete to facilitate adhesive dowel testing while maintaining required hook embedment in subsequent work.
- J. All adhesive dowel installations in the horizontal or overhead orientation shall be conducted by a certified Adhesive Anchor Installer as certified by ACI/CSRI per ACI 318-11 9.2.2. Current AAI Certification must be submitted to the Engineer of Record for approval prior to commencement of any adhesive anchor installations.
- K. Adhesive Dowel Testing
  - 1. At all locations where adhesive dowels are shown on the Drawings, at least 10 percent of all adhesive dowels installed shall be tested to the value indicated on the

Drawings, with a minimum of one tested dowel per group. If no test value is indicated on the Drawings but the installed dowel is under direct tension, the Contractor shall notify the Engineer to verify the required test value.

2. Contractor shall submit a plan and schedule indicating locations of dowels to be tested, load test values and proposed dowel testing procedure (including a diagram of the testing equipment proposed for use) prior to conducting any testing. The testing equipment shall have a minimum of three support points and shall be of sufficient size to locate the edge of supports no closer than two times the anchor embedment depth from the center of the anchor.
3. Where Contract Documents indicate adhesive dowel design is the Contractor's responsibility, the Contractor shall submit a plan and schedule indicating locations of dowels to be tested and load test values, sealed by a Professional Engineer currently registered in the State of Georgia. The Contractor shall also submit documentation indicating the Contractor's testing procedures have been reviewed and the proposed procedures are acceptable.
4. Adhesive Dowel shall have no visible indications of displacement or damage during or after the proof test. Concrete cracking in the vicinity of the dowel after loading shall be considered a failure. Dowels exhibiting damage shall be removed and replaced. If more than 5 percent of tested dowels fail, then 100 percent of dowels shall be proof tested.
5. Proof testing of adhesive dowels shall be performed by an independent testing laboratory hired directly by the Contractor. The Contractor shall be responsible for costs of all testing, including additional testing required due to previously failed tests.

### 3.05 SPLICING

- A. Reinforcing bar splices shall only be used at locations shown on the Drawings. When it is necessary to splice reinforcing at points other than where shown, the splice shall be as acceptable to the Engineer.
- B. The length of lap for reinforcing bars, unless otherwise shown on the Drawings shall be in accordance with ACI 318 for a class B splice.
- C. Laps of welded wire fabric shall be in accordance with ACI 318. Adjoining sheets shall be securely tied together with No. 14 tie wire, one tie for each 2 running feet. Wires shall be staggered and tied in such a manner that they cannot slip.
- D. Mechanical splices shall be used only where shown on the drawings or when approved by the Engineer.

- E. Couplers which are located at a joint face shall be a type which can be set either flush or recessed from the face as shown on the Drawings. The couplers shall be sealed during concrete placement to completely eliminate concrete or cement paste from entering. After the concrete is placed, couplers intended for future connections shall be plugged and sealed to prevent any contact with water or other corrosive materials. Threaded couplers shall be plugged with plastic plugs which have an O-ring seal.

### 3.06 INSPECTION

- A. The Contractor shall advise the Engineer of his intentions to place concrete and shall allow him adequate time to inspect all reinforcing steel before concrete is placed.
- B. The Contractor shall advise the Engineer of his intentions to place grout in masonry walls and shall allow him adequate time to inspect all reinforcing steel before grout is placed.

### 3.07 CUTTING OF EMBEDDED REBAR

The Contractor shall not cut embedded rebar cast into structural concrete without prior approval.

**+++ END OF SECTION 03200+++**

**SECTION 03250**  
**CONCRETE ACCESSORIES**

**PART 1 -- GENERAL**

1.01 THE REQUIREMENT

Furnish all materials, labor and equipment required to provide all concrete accessories including waterstops, expansion joint material, joint sealants, expansion joint seals, contraction joint inserts, and epoxy bonding agent.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03100 - Concrete Formwork
- B. Section 03290 - Joints in Concrete
- C. Section 03300 - Cast-in-Place Concrete
- D. Section 07900 Joint Fillers, Sealants and Caulking

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
  - 1. ASTM C881 Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
  - 2. ASTM D412 Standard Tests for Rubber Properties in Tension
  - 3. ASTM D 624 Standard Test method for Rubber Property - Tear Resistance
  - 4. ASTM D 638 Standard Test Method for Tensile Properties of Plastics
  - 5. ASTM D1751 Standard Specifications for Preformed Expansion Joint fillers for Concrete Paving and Structural Construction (nonextruding and resilient bituminous types)

6. ASTM D 1752 Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
7. ASTM D 1171 Standard Test Method for Ozone Resistance at 500 pphm
8. ASTM D 471 Standard Test Method for Rubber Properties

#### 1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01300, Submittals.
  1. Manufacturer's literature on all products specified herein including material certifications.
  2. Proposed system for supporting PVC waterstops in position during concrete placement
  3. Samples of products if requested by the Engineer.

### PART 2 -- PRODUCTS

#### 2.01 POLYVINYL CHLORIDE (PVC) WATERSTOPS

- A. PVC waterstops for construction joints shall be flat ribbed type, 6 inches wide with a minimum thickness at any point of 3/8 inches.
- B. Waterstops for expansion joints shall be ribbed with a center bulb. They shall be 9 inches wide with a minimum thickness at any point of 3/8 inch unless shown or specified otherwise. The center bulb shall have a minimum outside diameter of 1 inch and a minimum inside diameter of 1/2 inch.
- C. The waterstops shall be manufactured from virgin polyvinyl chloride plastic compound and shall not contain any scrap or reclaimed material or pigment whatsoever. The properties of the polyvinyl chloride compound used, as well as the physical properties of the waterstops, shall exceed the requirements of the U.S. Army Corps. of Engineers' Specification CRD-C572. The waterstop material shall have an off-white, milky color.
- D. The required minimum physical characteristics for this material are:
  1. Tensile strength - 1,750 psi (ASTM D-638).
  2. Ultimate elongation - not less than 280% (ASTM D-638).

- E. No reclaimed PVC shall be used for the manufacturing of the waterstops. The Contractor shall furnish certification that the proposed waterstops meet the above requirements.
- F. PVC waterstops shall be as manufactured by BoMetals, Inc., DuraJoint Concrete Accessories, or Sika Greenstreak.
- G. All waterstop intersections, both vertical and horizontal, shall be made from factory fabricated corners and transitions. Only straight butt joint splices shall be made in field.

## 2.02 RETROFIT WATERSTOPS

- A. Retrofit waterstops shall be used where specifically shown on Drawings for sealing joints between existing concrete construction and new construction.
- B. Retrofit waterstops shall be PVC waterstops fabricated from material as described in Section 2.01 of this Specification.
- C. Retrofit waterstop shall be attached to existing concrete surface as shown on Drawings.
- D. Use of split waterstop in lieu of specially fabricated retrofit waterstop will not be acceptable.
- E. Retrofit Waterstop manufacturer must provide a complete system including all Waterstop, stainless steel anchoring hardware, and epoxy for installation.
- F. For construction joints, retrofit waterstop shall be style number 609 by Sika Greenstreak, RF-638 by BoMetals, Inc., Type 18 kit by DuraJoint Concrete Accessories, or approved equal. For expansion joints, retrofit waterstop shall be style number 667 by Sika Greenstreak, RF-912 by BoMetals, Inc., Type 18-9 kit by DuraJoint Concrete Accessories, or approved equal.

## 2.03 CHEMICAL RESISTANT WATERSTOPS

- A. Where specifically noted on Contract Drawings, chemical resistant waterstops shall be used instead of PVC waterstops.
- B. Chemical resistant waterstops for construction joints shall be ribbed with a center bulb. They shall be 6 inches wide with a minimum thickness at any point of 3/16 inches.
- C. Chemical resistant waterstops for expansion joints shall be ribbed tear web. They shall be 9 inches wide with a tear web designed to accommodate 1 inch of free movement minimum.
- D. Chemical resistant retrofit waterstop shall be a minimum of 2½” wide along the ribbed side and a minimum 5” wide along the side attached to the existing concrete surface. Retrofit waterstop shall include a centerbulb and shall have a minimum thickness of 3/16”. Retrofit

waterstop manufacturer shall provide a complete system including waterstop, stainless steel anchoring hardware and epoxy for installation.

- E. Chemical resistant waterstops shall be manufactured from a fully crosslinked thermoplastic vulcanizate rubber.
- F. Waterstops shall be TPER by BoMetals, Inc., Earth Shield TPV/TPE-R by JP Specialties, Inc., Westec TPER by Westec Barrier Technologies, or TPE-R by DuraJoint Concrete Accessories.

#### 2.04 HYPALON RUBBER WATERSTOPS

Hypalon rubber waterstops shall be Sikadur Combiflex by Sika Corporation or approved equal. Minimum width of waterstop material shall be twelve (12) inches unless shown otherwise on Contract Drawings.

#### 2.05 EXPANDING RUBBER WATERSTOP

- A. Expanding rubber shall be designed to expand under hydrostatic conditions. Waterstops shall be Adeka Ultra Seal MC-2010MN by Adeka Ultra Seal/OCM, Inc., or Hydrotite CJ-1020-2K by Sika Greenstreak, for concrete thickness greater than nine inches. For thicknesses less than nine inches, Adeka Ultra Seal KBA-1510FF or Hydrotite CJ-1020-2K shall be used.
- B. Waterstop shall be a chemically modified natural rubber product with a hydrophilic agent.
- C. Waterstop has a stainless steel mesh or coextrusion of non-hydrophilic rubber to direct expansion in the thickness direction and restrict the expansion in the longitudinal direction.

#### 2.06 WATERSTOP ADHESIVE

- A. Adhesive between waterstops and existing concrete shall be 20+F Contact Cement by Miracle Adhesives Corporation, Neoprene Adhesive 77-198 by JGF Adhesives, Sikadur 31 Hi-Mod Gel by Sika Corporation, DP-605 NS Urethane Adhesive by 3M Adhesive Systems.
- B. Hydrophilic, non-bentonite water swelling elastic sealant shall be used to bond expanding rubber waterstops to rough surfaces. Hydrophilic elastic sealant shall be P-201 by Adeka Ultra Seal/OCM, Inc., Leakmaster LV-1 by Sika Greenstreak, or approved equal.

#### 2.07 JOINT SEALANTS

Joint sealants shall comply with Section 07900, Joint Fillers, Sealants, and Caulking.

#### 2.08 EXPANSION JOINT MATERIAL

- A. Preformed expansion joint material shall be non-extruding, and shall be of the following types:
  - 1. Type I - Sponge rubber, conforming to ASTM D1752, Type I.
  - 2. Type II - Cork, conforming to ASTM D1752, Type II.
  - 3. Type III - Self-expanding cork, conforming to ASTM D1752, Type III.
  - 4. Type IV - Bituminous fiber, conforming to ASTM Designation D1751.

#### 2.09 EXPANSION JOINT SEAL

- A. Expansion Joint Seal System shall consist of a preformed neoprene profile, installed using the same dimensions as the joint gap, bonded with a two-component epoxy adhesive and pressurized during the adhesive cure time.
- B. The expansion joint system shall be Hydrozo/Jeene Structural Sealing joint system by Hydrozo/Jeene, Inc.

#### 2.10 CONTRACTION JOINT INSERTS

Contraction joint inserts shall be Zip-Cap by Greenstreak Plastic Products, Zip-Joint by BoMetals, Inc. control joint formers.

#### 2.11 EPOXY BONDING AGENT

Epoxy bonding agent shall conform to ASTM C881 and shall be Sikadur 32 Hi-Mod, Sika Corporation, Lyndhurst, N.J.; Euco #452 Epoxy System, Euclid Chemical Company, Cleveland, OH, MasterInject 1500 by BASF Master Builder Solutions (BASF).

#### 2.12 EPOXY RESIN BINDER

Epoxy resin binder shall conform to the requirements of ASTM C-881, Type III, Grade 3, Class B and C for epoxy resin binder and shall be Sikadur 23, Low-Mod-Gel, manufactured by the Sika Corporation, Lyndhurst, N.J., Flexocrete Gel manufactured by DuraJoint Concrete Accessories or Euco #352 Gel, Euclid Chemical Company, MasterEmaco ADH 327 or 327 RS by BASF Master Builder Solutions.

### PART 3 -- EXECUTION

#### 3.01 PVC AND CHEMICAL RESISTANT WATERSTOPS

- A. PVC and chemical resistant waterstops shall be provided in all construction and expansion joints in water bearing structures and at other such locations as required by the Drawings.



- B. Waterstops shall be carefully positioned so that they are embedded to an equal depth in concrete on both sides of the joint. They shall be kept free from oil, grease, mortar or other foreign matter. To ensure proper placement, all waterstops shall be secured in correct position at 12" on center along the length of the waterstop on each side, prior to placing concrete. Such method of support shall be submitted to the Engineer for review and approval. Grommets or small pre-punched holes as close to the edges as possible will be acceptable for securing waterstops.
- C. Splices in PVC waterstops and chemical resistant waterstops shall be made with a thermostatically controlled heating element. Only straight butt joint splices will be allowed in the field. Factory fabricated corners and transitions shall be used at all intersections. Splices shall be made in strict accordance with the manufacturer's recommended instructions and procedures. At least three satisfactory sample splices shall be made on the site. The Engineer may require tests on these splices by an approved laboratory. The splices shall exhibit not less than 80 percent of the strength of the unspliced material.
- D. All splices in waterstops will be subject to rigid review for misalignment, bubbles, inadequate bond, porosity, cracks, offsets, discoloration, charring, and other defects which would reduce the potential resistance of the material to water pressure at any point. All defective joints shall be replaced with material which will pass said review and all faulty material shall be removed from the site and disposed of by the Contractor at no additional cost to the Owner.
- E. Retrofit waterstops shall be installed as shown on Contract Drawings using approved waterstop adhesive and Type 316 stainless steel batten bars and expansion anchors.
- F. Waterstop installation and splicing defects which are unacceptable include, but are not limited to the following:
  - 1. Tensile strength not less than 80 percent of parent material.
  - 2. Overlapped (not spliced) Waterstop.
  - 3. Misalignment of Waterstop geometry at any point greater than 1/16 inch.
  - 4. Visible porosity or charred or burnt material in weld area.
  - 5. Visible signs of splice separation when splice (24 hours or greater) is bent by hand at sharp angle.

### 3.02 HYPALON RUBBER AND EXPANDING RUBBER WATERSTOPS

- A. Waterstops shall be installed only where shown on the Drawings.
- B. Waterstops shall be installed in strict accordance with manufacturer's recommendations.

### 3.03 WATERSTOP ADHESIVE

- A. Adhesive shall be applied to both contact surfaces in strict accordance with manufacturer's recommendations.
- B. Adhesive shall be used where waterstops are attached to existing concrete surfaces.

### 3.04 INSTALLATION OF EXPANSION JOINT MATERIAL AND SEALANTS

- A. Type I, II, or III shall be used in all expansion joints in structures and concrete pavements unless specifically shown otherwise on the Drawings. Type IV shall be used in sidewalk and curbing and other locations specifically shown on the Drawings.
- B. All expansion joints exposed in the finish work, exterior and interior, shall be sealed with the specified joint sealant. Expansion joint material and sealants shall be installed in accordance with manufacturer's recommended procedures and as shown on the Drawings.
- C. Expansion joint material that will be exposed after removal of forms shall be cut and trimmed to ensure a neat appearance and shall completely fill the joint except for the space required for the sealant. The material shall be held securely in place and no concrete shall be allowed to enter the joint or the space for the sealant and destroy the proper functions of the joint.
- D. A bond breaker shall be used between expansion joint material and sealant. The joint shall be thoroughly clean and free from dirt and debris before the primer and the sealant are applied. Where the finished joint will be visible, masking of the adjoining surfaces shall be carried out to avoid their discoloration. The sealant shall be neatly tooled into place and its finished surfaces shall present a clean and even appearance.
- E. Type 1 joint sealant shall be used in all expansion and contraction joints in concrete, except where Type 7 or Type 8 is required as stated below, and wherever else specified or shown on the Drawings. It shall be furnished in pour grade or gun grade depending on installation requirements. Primers shall be used as required by the manufacturer. The sealant shall be furnished in colors as directed by the Engineer.
- F. Type 8 joint sealant shall be used in all concrete pavements and floors subject to heavy traffic and wherever else specified or shown on the Drawings.
- G. Type 7 joint sealant shall be used for all joints in chlorine contact tanks and wherever specified or shown on the Drawings.

### 3.05 EXPANSION JOINT SEAL

The expansion joint seal system shall be installed as shown on the Drawings in strict accordance with the manufacturer's recommendations.

### 3.06 CONTRACTION JOINT INSERTS

- A. For contraction joints in slabs, inserts shall be floated in fresh concrete during finishing.
- B. For contraction joints in walls, inserts shall be secured in place prior to casting wall.
- C. Inserts shall be installed true to line at the locations of all contraction joints as shown on the Drawings.
- D. Inserts shall extend into concrete sufficient depth as indicated on the Drawings or specified in Section 03290, Joints in Concrete.
- E. Inserts shall not be removed from concrete until concrete has cured sufficiently to prevent chipping or spalling of joint edges due to inadequate concrete strength.

### 3.07 EPOXY BONDING AGENT

- A. The Contractor shall use an epoxy bonding agent for bonding fresh concrete to existing concrete as shown on the Drawings.
- B. Bonding surface shall be clean, sound and free of all dust, laitance, grease, form release agents, curing compounds, and any other foreign particles.
- C. Application of bonding agent shall be in strict accordance with manufacturer's recommendations.
- D. Fresh concrete shall not be placed against existing concrete if epoxy bonding agent has lost its tackiness.

### 3.08 EPOXY RESIN BINDER

Epoxy resin binder shall be used to seal all existing rebar cut and burned off during demolition operations. Exposed rebar shall be burned back 1/2-inch minimum into existing concrete and the resulting void filled with epoxy resin binder.

**+++END OF SECTION +++**

## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### PART 1 -- GENERAL

##### 1.01 THE REQUIREMENT

- A. Provide all labor, equipment, materials and services necessary for the manufacture, transportation and placement of all plain and reinforced concrete work, as shown on the Drawings or as ordered by the Engineer.
- B. The requirements in this section shall apply to the following types of concrete:
  - 1. Class A Concrete: Normal weight structural concrete in all structures, sidewalks and pavement.
  - 2. Class B Concrete: Normal weight structural concrete used for duct bank encasements, catch basins, fence and guard post embedment, concrete fill, and other areas where specifically noted on Contract Drawings.

##### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03100 - Concrete Formwork
- B. Section 03200 - Reinforcing Steel
- C. Section 03250 - Concrete Accessories
- D. Section 03290 - Joints in Concrete
- E. Section 03350 - Concrete Finishes
- F. Section 03370 - Concrete Curing
- G. Section 03600 - Grout

##### 1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of the Specifications, all work herein shall conform to or exceed the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
  - 1. Georgia State Minimum Standard Building Code

2. ACI 214 Guide to Evaluation of Strength Test Results of Concrete
3. ACI 301 Specifications for Structural Concrete
4. ACI 304 Guide for Measuring, Mixing, Transporting, and Placing Concrete
5. ACI 305 Guide to Hot Weather Concreting
6. ACI 306 Guide to Cold Weather Concreting
7. ACI 309 Guide for Consolidation of Concrete
8. ACI 318 Building Code Requirements for Structural Concrete and Commentary
9. ACI 350 Code Requirements for Environmental Engineering Concrete Structures
10. ASTM C 31 Standard Practice for Making and Curing Concrete Test Specimens in the Field
11. ASTM C 33 Standard Specification for Concrete Aggregates
12. ASTM C 39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
13. ASTM C42 Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
14. ASTM C 88 Standard Test Method for Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate
15. ASTM C 94 Standard Specification for Ready-Mixed Concrete
16. ASTM C 114 Standard Test Method for Chemical Analysis of Hydraulic Cement
17. ASTM C 136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
18. ASTM C 138 Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
19. ASTM C 143 Standard Test Method for Slump of Hydraulic Cement Concrete

20. ASTM C 150 Standard Specification for Portland Cement
21. ASTM C 172 Standard Practice for Sampling Freshly Mixed Concrete
22. ASTM C 192 Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
23. ASTM C 231 Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
24. ASTM C 260 Standard Specification for Air-Entraining Admixtures for Concrete
25. ASTM C 295 Standard Guide for Petrographic Examination of Aggregates for Concrete
26. ASTM C 457 Standard Test Method for Microscopical Determination of the Air-Void System in Hardened Concrete
27. ASTM C 494 Standard Specification for Chemical Admixtures for Concrete
28. ASTM C 595 Standard Specification for Blended Hydraulic Cements
29. ASTM C 618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
30. ASTM C 989 Standard Specification for Slag Cement for Use in Concrete and Mortars
31. ASTM C 1077 Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
32. ASTM C 1260 Test Method for Potential Alkali Reactivity of Aggregates (Mortar Bar Method)
33. ASTM C 1567 Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)
34. ASTM C 1602 Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
35. ASTM C 1778 Reducing the Risk of Deleterious Alkali – Aggregate Reaction in Concrete

#### 1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01300 Submittal Procedures.
  - 1. Sources of all materials and certifications of compliance with specifications for all materials.
  - 2. Certified current (less than 1 year old) chemical analysis of the Portland Cement or Blended Cement to be used.
  - 3. Certified current (less than 1 year old) chemical analysis of fly ash or slag cement to be used.
  - 4. Aggregate test results showing compliance with required standards, i.e., sieve analysis, potential reactivity, aggregate soundness tests, petrographic analysis, mortar bar expansion testing, etc.
  - 5. Manufacturer's data on all admixtures stating compliance with required standards.
  - 6. Concrete mix design for each class of concrete specified herein.
  - 7. Field experience records and/or trial mix data for the proposed concrete mixes for each class of concrete specified herein.

#### 1.05 QUALITY ASSURANCE

- A. Tests on materials used in the production of concrete shall be required as specified in PART 2 -- PRODUCTS. These tests shall be performed by an independent testing laboratory approved by the Engineer at no additional cost to the Owner.
- B. Trial concrete mixes shall be tested when required in accordance with Article 3.01 at no additional cost to the Owner.
- C. Field quality control tests, as specified in Article 3.10, unless otherwise stated, will be performed by a materials testing consultant employed by the Owner. However, the Contractor shall be charged for the cost of any additional tests and investigation on work performed which does not meet the Specifications. Any individual who samples and tests concrete to determine if the concrete is being produced in accordance with this Specification shall be certified as a Concrete Field Testing Technician, Grade I, in accordance with ACI CP-2. Testing laboratory shall conform to requirements of ASTM C-1077.

#### 1.06 CONCRETE COORDINATION CONFERENCE

- A. Unless waived by the Engineer, prior to any concrete submittals and at least 35 days prior to the start of the concrete construction schedule, the Contractor shall conduct a meeting at the site. The purpose of the meeting is to review the proposed concrete mix designs, to discuss the proposed approaches and procedures for mixing, transporting, placing, testing, finishing, and curing of all aspects of concrete work to ensure the concrete construction is performed in accordance with the Specifications, and to clarify roles of the parties involved. The Contractor shall send a concrete coordination conference agenda to all attendees 20 days prior to a mutually agreed upon date for the conference.
- B. As a minimum the agenda shall include:
1. Concrete Materials and Mix Designs
  2. Inspection Responsibilities
  3. Concrete Sampling and Testing Specification Requirements
  4. Cylinder Storage and Transportation
  5. Acceptance/Rejection Responsibility and Authority for Fresh Concrete
  6. Concrete finishing
  7. Concrete Curing
  8. Test Report Distribution
  9. Miscellaneous Items
- C. The Contractor shall require responsible representatives of every party who is concerned with the concrete work to attend the conference, including but not limited to the following:
1. Contractor's superintendent
  2. Engineer
  3. Owner's representative (if he chooses to attend)
  4. Laboratory retained for trial batching and construction quality control testing for the concrete.
  5. Any subcontractors involved in placing, finishing, and curing of concrete
  6. Concrete supplier
  7. Concrete pumping subcontractor (if pumping is being proposed)



- D. Minutes of the meeting shall be recorded, typed, and printed by the Contractor and distributed to all attendees and any other concerned parties within five days of the meeting.

## PART 2 -- PRODUCTS

### 2.01 HYDRAULIC CEMENT

#### A. Portland Cement

1. Portland Cement shall be Type II conforming to ASTM C 150. Type I cement may be used provided either fly ash or slag cement is also included in the mix in accordance with Articles 2.02 or 2.03 respectively.
2. When potentially reactive aggregates as defined in Article 2.05 are to be used in concrete mix, cement shall meet the following requirements:
  - a. For concrete mixed with only Portland Cement, the total alkalis in the cement (calculated as the percentage of  $Na_2O$  plus 0.658 times the percentage of  $K_2O$ ) shall not exceed 0.40%.
  - b. For concrete mixed with Portland Cement and an appropriate amount of fly ash (Article 2.02) or slag cement (Article 2.03) the total alkalis in the Portland Cement (calculated as the percentage of  $Na_2O$  plus 0.658 times the percentage of  $K_2O$ ) shall not exceed 0.85%.
3. When non-reactive aggregates as defined in Article 2.05 are used in concrete mix, total alkalis in the cement shall not exceed 1.0%.
4. The proposed Portland Cement shall not contain more than 8% tricalcium aluminate and more than 12% tetracalcium aluminoferrite.

#### B. Blended Cement

1. Blended cements shall be Type IP (Portland Fly Ash Cement) or Type IS (Portland Slag Cement) conforming to ASTM C 595.
2. Type IP cement shall be an interground blend of Portland Cement and fly ash in which the fly ash constituent is between 15% and 25% of the weight of the total blend.
3. Type IS cement shall be an interground blend of Portland Cement and slag cement in which the slag constituent is between 35% and 50% of the weight of the total blend.

4. Fly ash and slag cement used in the production of blended cements shall meet the requirements of Articles 2.02 and 2.03, respectively.
  5. When reactive aggregates as defined in Article 2.05 are used in concrete mix, the total alkalis in the Portland Cement (calculated as the percentage of  $\text{Na}_2\text{O}$  plus 0.658 times the percentage of  $\text{K}_2\text{O}$ ) shall not exceed 0.85%. The percentage of fly ash or slag cement shall be set to meet provisions of Article 2.05.G.3.
- C. Different types of cement shall not be mixed nor shall they be used alternately except when authorized in writing by the Engineer. Different brands of cement or the same brand from different mills may be used alternately. A resubmittal will be required if different cements are proposed during the Project.
  - D. Cement shall be stored in a suitable weather-tight building so as to prevent deterioration or contamination. Cement which has become caked, partially hydrated, or otherwise damaged will be rejected.

## 2.02 FLY ASH

- A. Fly ash shall meet the requirements of ASTM C 618 for Class F, except that the loss on ignition shall not exceed 4%. Fly ash shall also meet the optional physical requirements for uniformity as shown in Table 3 of ASTM C 618.
- B. For fly ash to be used in the production of type IP cement, the Pozzolan Activity Index shall be greater than 75% as specified in Table 3 of ASTM C 595.
- C. Where reactive aggregates as defined in Article 2.05 are used in concrete mix, the fly ash constituent shall be between 15% and 25% of the total weight of the combined Portland Cement and fly ash. The percentage of fly ash shall be set to meet the mean mortar bar expansion requirements in provisions of Article 2.05.G.2.
- D. For Type A1 concrete as required for use in environmental concrete structures, i.e. process structures or fluid containing structures, inclusion of fly ash or slag cement in the concrete mix, is mandatory.
- E. Additional fly ash shall not be included in concrete mixed with Type IS or IP cement.

## 2.03 SLAG CEMENT

- A. Slag cement shall meet the requirements of ASTM C 989 including tests for effectiveness of slag in preventing excessive expansion due to alkali-aggregate reactivity as described in Appendix X-3 of ASTM C 989.
- B. Where reactive aggregates as defined in Article 2.05 are used in concrete mix, the slag cement constituent shall be between 35% and 40% of the total weight of the combined

Portland Cement and slag. The percentage of slag cement shall be set to meet the mean mortar bar expansion requirements in provisions of Article 2.05.G.2.

- C. For Type A1 concrete as required for use in environmental concrete structures, i.e. process structures or fluid containing structures, inclusion of fly ash or slag cement in the concrete mix, is mandatory.
- D. Additional slag cement shall not be included in concrete mixed with type IS or IP cement.

#### 2.04 WATER

- A. Water used for mixing concrete shall be clear, potable and free from deleterious substances such as objectionable quantities of silty organic matter, alkali, salts and other impurities.
- B. Water shall not contain more than 100 PPM chloride.
- C. Water shall not contain more than 500 PPM dissolved solids.
- D. Water shall have a pH in the range of 4.5 to 8.5.
- E. Water shall meet requirements of ASTM C 1602.

#### 2.05 AGGREGATES

- A. All aggregates used in normal weight concrete shall conform to ASTM C 33.
- B. Fine Aggregate (Sand) in the various concrete mixes shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the limits of ASTM C 33.
- C. Coarse aggregates shall consist of hard, clean, durable gravel, crushed gravel or crushed rock. Coarse aggregate shall be size #57 or #67 as graded within the limits given in ASTM C 33 unless otherwise specified.
- D. Aggregates shall be tested for gradation by sieve analysis tests in conformance with ASTM C 136.
- E. Aggregates shall be tested for soundness in accordance with ASTM C 88. The loss resulting after five cycles shall not exceed 10 percent for fine or coarse aggregate when using either magnesium sulfate or sodium sulfate.
- F. All aggregates shall be evaluated in accordance with ASTM C 1778 to determine potential reactivity. All aggregates shall be considered reactive unless they meet the requirements below for non-reactive aggregates. Aggregates with a lithology essentially similar to

sources in the same region found to be reactive in service shall be considered reactive regardless of the results of the tests above.

1. Non-reactive aggregates shall meet the following requirements:

A petrographic analysis in accordance with ASTM C295 shall be performed to identify the constituents of the fine and coarse aggregate. Non-reactive aggregates shall meet the following limitations:

- (a) Optically strained, microfractured, or microcrystalline quartz, 5.0%, maximum.
- (b) Chert or chalcedony, 3.0%, maximum.
- (c) Tridymite or cristobalite, 1.0%, maximum.
- (d) Opal, 0.5%, maximum.
- e) Natural volcanic glass in volcanic rocks, 3.0%, maximum.

2. Concrete mix with reactive aggregate shall meet the following requirements:

If aggregates are deemed potentially reactive as per ASTM C-1778 and fly ash or slag cement is included in proposed concrete mix design, proposed concrete mix including proposed aggregates shall be evaluated by ASTM C-1567. Mean mortar bar expansions at 16 days shall be less than 0.08%. Tests shall be made using exact proportion of all materials proposed for use on the job in design mix submitted.

If aggregates are deemed potentially reactive as per ASTM C-1778 and a straight cement mix without fly ash or slag cement is proposed for concrete mix design, aggregates shall be evaluated by ASTM C-1260. Mean mortar bar expansions at 16 days shall be less than 0.08%.

- G. Contractor shall submit a new trial mix to the Engineer for approval whenever a different aggregate or gradation is proposed.

## 2.06 STRUCTURAL MACRO FIBERS

- A. Structural macro fibers shall meet requirements of ASTM C 1116 with a minimum length of 2 inches, an aspect ratio between 50 and 90, and a minimum toughness rating R10, 50=60 (approximate) in accordance with ASTM C 1609. Fibers shall be used only where specifically required on Contract Drawings or where specifically approved by Engineer.
- B. Acceptable structural macro fibers are Tuf Strand SF by the Euclid Chemical Company, Strux 90/40 by W.R. Grace, or equal.

## 2.07 ADMIXTURES

- A. Air entraining agent shall be added to all concrete unless noted otherwise. The agent shall consist of a neutralized vinsol resin solution or a purified hydrocarbon with a cement catalyst which will provide entrained air in the concrete in accordance with ASTM C 260. The admixture proposed shall be selected in advance so that adequate samples may be obtained and the required tests made. Air content of concrete, when placed, shall be within the ranges given in the concrete mix design.
- B. The following admixtures are required or used for water reduction, slump increase, and/or adjustment of initial set. Admixtures permitted shall confirm to the requirements of ASTM C 494. Admixtures shall be non-toxic after 30 days and shall be compatible with and made by the same manufacturer as the air-entraining admixtures.
  1. Water reducing admixture shall conform to ASTM C 494, Type A and shall contain no more than 0.05% chloride ions. Acceptable products are “Eucon Series” by the Euclid Chemical Company, “Master Pozzoloth Series” by BASF, and “Plastocrete Series” by Sika Corporation.
  2. High range water reducer shall be sulfonated polymer conforming to ASTM C 494, Type F or G. The high range water reducer shall be added to the concrete at either the batch plant or at the job site and may be used in conjunction with a water reducing admixture. The high range water reducer shall be accurately measured and pressure injected into the mixer as a single dose by an experienced technician. A standby system shall be provided and tested prior to each day’s operation of the job site system. Concrete shall be mixed at mixing speed for a minimum of 100 mixer revolutions after the addition of the high range water reducer. Acceptable products are “Eucon 37” or Plastol 5000 by the Euclid Chemical Company, “Master Rheobuild 1000 or Master Glenium Series” by BASF, and “Daracem 100 or Advaflow Series” by W.R. Grace.
  3. A non-chloride, non-corrosive accelerating admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C 494, Type C or E, and shall not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year’s duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products are “Accelguard 80/90 or NCA” by the Euclid Chemical Company and “Daraset” by W.R. Grace.
  4. A water reducing retarding admixture may be used where specifically approved by the Engineer. The admixture shall conform to ASTM C494, Type D and shall not contain more than 0.05% chloride ions. Acceptable products are “Eucon NR or Eucon Retarder 100” by the Euclid Chemical Company, “Pozzoloth Retarder” by BASF, and “Plastiment” by Sika Corporation.

- C. Admixtures containing calcium chloride, thiocyanate or more than 0.05 percent chloride ions are not permitted. The addition of admixtures to prevent freezing is not permitted.
- D. The Contractor shall submit manufacturer's data including the chloride ion content of each admixture and certification from the admixture manufacturer that all admixtures utilized in the design mix are compatible with one another and properly proportioned prior to mix design review.

2.08 CONCRETE MIX DESIGN

A. The proportions of cement, aggregates, admixtures and water used in the concrete mixes shall be based on the results of field experience or preferably laboratory trial mixes in conformance with Section 5.3. "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318 and ACI 350. When trial mixes are used they shall also conform to Article 3.01 of this Section of the Specifications. If field experience records are used, concrete strength results shall be from concrete mixed with all of the ingredients proposed for use on job used in similar proportions to mix proposed for use on job. Contractor shall submit verification confirming this stipulation has been followed. Field experience records and/or trial mix data used as the basis for the proposed concrete mix design shall be submitted to the Engineer along with the proposed mix.

B. Structural concrete shall conform to the following requirements. Cementitious materials refer to the total combined weight of all cement, fly ash, and slag cement contained in the mix.

1. Compressive Strength (28-Day)

- a. Concrete Class A                      5,000 psi (minimum)
- b. Concrete Class B                      3,000 psi (minimum)

2. Water/cementitious materials ratio, by weight

	Maximum	Minimum
a. Concrete Class A	0.40	0.37
b. Concrete Class B	0.50	0.39

3. Slump range                                      4" nominal unless high range water reducing admixture is used.  
8" max if high range water reducing admixture is used.

4. Air Content

- a. Class A                                      4.5% ±1.5%

- b. Class B 3% Max (non air-entrained)

### PART 3 -- EXECUTION

#### 3.01 TRIAL MIXES

- A. When trial mixes are used to confirm the quality of a proposed concrete mix in accordance with Section 5.3, "Proportioning on the Basis of Field Experience and/or Trial Mixtures" of ACI 318 and ACI 350, an independent qualified testing laboratory designated and retained by the Contractor shall test a trial batch of each of the preliminary concrete mixes submitted by the Contractor. The trial batches shall be prepared using the aggregates, cement and admixtures proposed for the project. The trial batch materials shall be of a quantity such that the testing laboratory can obtain enough samples to satisfy requirements stated below. Tests on individual materials stated in PART 2 -- PRODUCTS should already be performed before any trial mix is done. The cost of laboratory trial batch tests for each specified concrete mix will be borne by the Contractor and the Contractor shall furnish and deliver the materials to the testing laboratory at no cost to the Owner.
- B. The independent testing laboratory shall prepare a minimum of fifteen (15) standard test cylinders in accordance with ASTM C 31 in addition to conducting slump (ASTM C 143), air content (C 231) and unit weight (C 138) tests. Compressive strength test on the cylinders shall subsequently be performed by the same laboratory in accordance with ASTM C 39 as follows: Test 3 cylinders at age 7 days; test 3 cylinders at age 21 days; test 3 cylinders at age 28 days and test 3 cylinders at 56 days. The cylinders shall be carefully identified as "Trial Mix, Contract No. \_\_\_\_\_, Product \_\_\_\_\_." If the average 28-day compressive strength of the trial mix is less than that specified, or if any single cylinder falls below the required strength by more than 500 psi, the mix shall be corrected, another trial batch prepared, test cylinders taken, and new tests performed as before. Any such additional trial batch testing required shall be performed at no additional cost to the Owner. Adjustments to the mix shall be considered refinements to the mix design and shall not be the basis for extra compensation to the Contractor.

#### 3.02 PRODUCTION OF CONCRETE

- A. All concrete shall be machine mixed. Hand mixing of concrete will not be permitted. The Contractor may supply concrete from a ready mix plant or from a site mixed plant. In selecting the source for concrete production the Contractor shall carefully consider its capability for providing quality concrete at a rate commensurate with the requirements of the placements so that well bonded, homogenous concrete, free of cold joints, is assured.
- B. Ready-Mixed Concrete
  - 1. At the Contractor's option, ready-mixed concrete may be used meeting the requirements for materials, batching, mixing, transporting, and placing as specified herein and in accordance with ASTM C 94.

2. Truck mixers shall be equipped with electrically-actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resettable, recording type, and shall be mounted in the driver's cab. The counters shall be actuated at the time of starting mixers at mixing speeds.
3. Each batch of concrete shall be mixed in a truck mixer for not less than 100 revolutions of the drum or blades at the rate of rotation designated by the manufacturer of equipment. Additional mixing, if any, shall be at the speed designated by the manufacturer of the equipment as agitating speed. All materials including mixing water shall be in the mixer drum before actuating the revolution counter for determining the number of revolutions of mixing.
4. Truck mixers and their operation shall be such that the concrete throughout the mixed batch, as discharged, is within acceptable limits of uniformity with respect to consistency, mix and grading. If slump tests taken at approximately the 1/4 and 3/4 points of the load during discharge give slumps differing by more than one inch when the specified slump is 3 inches or less, or if they differ by more than 2 inches when the specified slump is more than 3 inches, the mixer shall not be used on the work unless the causing condition is corrected and satisfactory performance is verified by additional slump tests. All mechanical details of the mixer, such as water measuring and discharge apparatus, condition of the blades, speed of rotation, general mechanical condition of the unit and clearance of the drum, shall be checked before a further attempt to use the unit will be permitted.
5. Ready-mixed concrete shall be delivered to the site for the work and discharge shall be completed before the drum has been revolved 300 revolutions and within the time requirements stated in Article 3.03 of this Section.
6. Each and every concrete delivery shall be accompanied by a delivery ticket containing at least the following information:
  - a. Date and truck number
  - b. Ticket number
  - c. Mix designation of concrete
  - d. Cubic yards of concrete
  - e. Cement brand, type and weight in pounds
  - f. Weight in pounds of fine aggregate (sand)
  - g. Weight in pounds of coarse aggregate (stone)
  - h. Air entraining agent, brand, and weight in pounds and ounces
  - i. Other admixtures, brand, and weight in pounds and ounces
  - j. Water, in gallons, stored in attached tank
  - k. Water, in gallons, maximum that can be added without exceeding design water/cementitious materials ratio
  - l. Water, in gallons, actually used (by truck driver)
  - m. Time of loading



- n. Time of delivery to job (by truck driver)
- 7. Any truck delivering concrete to the job site, which is not accompanied by a delivery ticket showing the above information will be rejected and such truck shall immediately depart from the job site.
- 8. The use of non-agitating equipment for transporting ready-mixed concrete will not be permitted. Combination truck and trailer equipment for transporting ready-mixed concrete will not be permitted. The quality and quantity of materials used in ready-mixed concrete and in batch aggregates shall be subject to continuous inspection at the batching plant by the Engineer.

C. Site Mixed Concrete

- 1. Scales for weighing concrete ingredients shall be accurate when in use within  $\pm 0.4$  percent of their total capacities. Standard test weights shall be available to permit checking scale accuracy.
- 2. Operation of batching equipment shall be such that the concrete ingredients are consistently measured within the following tolerances:
  - a. Cement, fly ash, or slag cement  $\pm 1$  percent
  - b. Water  $\pm 1$  percent
  - c. Aggregates  $\pm 2$  percent
  - d. Admixtures  $\pm 3$  percent
- 3. Each batch shall be so charged into the mixer that some water will enter in advance of the cement and aggregates. Water shall continue for a period which may extend to the end of the first 25 percent of the specified mixing time. Controls shall be provided to prevent batched ingredients from entering the mixer before the previous batch has been completely discharged.
- 4. The concrete shall be mixed in a batch mixer capable of thoroughly combining the aggregates, cement, and water into a uniform mass within the specified mixing time, and of discharging the concrete without harmful segregation. The mixer shall bear a manufacturer's rating plate indicating the rate capacity and the recommended revolutions per minute and shall be operated in accordance therewith.
- 5. Mixers with a rate capacity of 1 cu.yd. or larger shall conform to the requirements of the Plant Mixer Manufacturers' Division of the Concrete Plant Manufacturers' Bureau.
- 6. Except as provided below, batches of 1 cu. yd. or less shall be mixed for not less than 1 minute. The mixing time shall be increased 15 seconds for each cubic yard or fraction thereof of additional capacity.

7. Shorter mixing time may be permitted provided performance tests made in accordance with of ASTM C 94 indicate that the time is sufficient to produce uniform concrete.
8. Controls shall be provided to insure that the batch cannot be discharged until the required mixing time has elapsed. At least three-quarters of the required mixing time shall take place after the last of the mixing water has been added.
9. The interior of the mixer shall be free of accumulations that will interfere with mixing action. Mixer blades shall be replaced when they have lost 10 percent of their original height.
10. Air-entraining admixtures and other chemical admixtures shall be charged into the mixer as solutions and shall be measured by means of an approved mechanical dispensing device. The liquid shall be considered a part of the mixing water. Admixtures that cannot be added in solution may be weighed or may be measured by volume if so recommended by the manufacturer.
11. If two or more admixtures are used in the concrete, they shall be added separately to avoid possible interaction that might interfere with the efficiency of either admixture or adversely affect the concrete.
12. Addition of retarding admixtures shall be completed within 1 minute after addition of water to the cement has been completed, or prior to the beginning of the last three-quarters of the required mixing, whichever occurs first. Retarding admixtures shall not be used unless approved by the Engineer.
13. Concrete shall be mixed only in quantities for immediate use and within the time and mixing requirements of ASTM C 94.

### 3.03 CONCRETE PLACEMENT

- A. No concrete shall be placed prior to approval of the concrete mix design. Concrete placement shall conform to the recommendations of ACI 304.
- B. Prior to concrete placement, all reinforcement shall be securely and properly fastened in its correct position. Formwork shall be clean, oiled and form ties at construction joints shall be retightened. All bucks, sleeves, castings, hangers, pipe, conduits, bolts, anchors, wire, and any other fixtures required to be embedded therein shall be in place. Forms for openings to be left in the concrete shall be in place and anchored by the Contractor. All loose debris in bottoms of forms or in keyways shall be removed and all debris, water, snow, ice and foreign matter shall be removed from the space to be occupied by the concrete. The Contractor shall notify the Engineer in advance of placement, allowing sufficient time for a concurrent inspection and for any corrective measures which are subsequently required.

- C. On horizontal joints where concrete is to be placed on hardened concrete, flowing concrete containing a high range water reducing admixture or cement grout shall be placed with a slump not less than 8 inches for the initial placement at the base of the wall. Concrete or cement grout shall meet all strength and service requirements specified herein for applicable class of concrete. This concrete shall be worked well into the irregularities of the hard surface.
- D. All concrete shall be placed during the daylight hours except with the consent of the Engineer. If special permission is obtained to carry on work during the night, adequate lighting must be provided.
- E. When concrete arrives at the project with slump below that suitable for placing, as indicated by the Specifications, water may be added to bring the concrete within the specified slump range provided that the design water-cementitious materials ratio is not exceeded. The water shall be incorporated by additional mixing equal to at least half of the total mixing required. Water may be added only to full trucks. On-site tempering shall not relieve the Contractor from furnishing a concrete mix that meets all specified requirements.
- F. Concrete shall be conveyed as rapidly as practicable to the point of deposit by methods which prevent the separation or loss of the ingredients. It shall be so deposited that rehandling will be unnecessary. Discharge of the concrete to its point of deposit shall be completed within 90 minutes after the addition of the cement to the aggregates. In hot weather, or under conditions contributing to quick stiffening of the concrete, the time between the introduction of the cement to the aggregates and discharge shall not exceed the requirements stated in Article 3.09 of this Section.
- G. Where concrete is conveyed to position by chutes, a practically continuous flow in the chute shall be maintained. The angle and discharge arrangement of the chute shall be such as to prevent segregation of the concrete ingredients. The delivery end of the chute shall be as close as possible to the point of deposit and in no case shall the free pour from the delivery end of the chute exceed five feet, unless approved otherwise.
- H. Special care must be exercised to prevent splashing of forms or reinforcement with concrete, and any such splashes or accumulations of hardened or partially hardened concrete on the forms or reinforcement above the general level of the concrete already in place must be removed before the work proceeds. Concrete shall be placed in all forms in such way as to prevent any segregation.
- I. Placing of concrete shall be so regulated that the pressure caused by the wet concrete shall not exceed that used in the design of the forms.
- J. All concrete for walls shall be placed through openings in the form spaced at frequent intervals or through tremies (heavy duct canvas, rubber, etc.), equipped with suitable hopper heads. Tremies shall be of variable lengths so the free fall shall not exceed five (5) feet and a sufficient number shall be placed in the form to ensure the concrete is kept level at all times.

- K. When placing concrete which is to be exposed, sufficient illumination shall be provided in the interior of the forms so the concrete, at places of deposit, is visible from deck and runways.
- L. Concrete shall be placed so as to thoroughly embed all reinforcement, inserts, and fixtures.
- M. When forms are removed, surfaces shall be even and dense, free from aggregate pockets or honeycomb. To achieve this, concrete shall be consolidated using mechanical vibration, supplemented by forking and spading by hand in the corners and angle of forms and along form surfaces while the concrete is plastic under the vibratory action. Consolidation shall conform to ACI 309.
- N. Mechanical vibration shall be applied directly to the concrete, unless otherwise approved by the Engineer. The bottom of vibrators used on floor slabs must not be permitted to ride the form supporting the slab. Vibration shall be applied at the point of deposit and in the area of freshly placed concrete by a vertical penetration of the vibrator. Vibrators shall not be used to move concrete laterally within the forms.
- O. The intensity of vibration shall be sufficient to cause settlement of the concrete into place and to produce monolithic joining with the preceding layer. It shall be of sufficient duration to accomplish thorough compaction and complete embedment of reinforcement and fixtures with a vibrator transmitting not less than 7,500 impulses per minute. Since the duration of vibration per square foot of surface is dependent on the frequency (impulses per minute), size of vibrator, and slump of concrete, the length of time must therefore be determined in the field. Vibration, however, shall not be continued in any one location to the extent that pools of grout are formed.
- P. Care shall be taken to prevent cold joints when placing concrete in any portion of the work. The concrete placing rate shall be such as to ensure that each layer is placed while the previous layer is soft or plastic, so that the two layers can be made monolithic by penetration of the vibrators. Maximum thickness of concrete layers shall be 18 inches. The surface of the concrete shall be level whenever a run of concrete is stopped.
- Q. To prevent feathered edges, construction joints located at the tops of horizontal lifts near sloping exposed concrete surfaces shall be inclined near the exposed surface, so the angle between such inclined surface and the exposed concrete surface will be not less than 50°.
- R. In placing unformed concrete on slopes, the concrete shall be placed ahead of a non-vibrated slip-form screed extending approximately 2-1/2 feet back from its leading edge. The method of placement shall provide a uniform finished surface with the deviation from the straight line less than 1/8 inch in any concrete placement. Concrete ahead of the slip-form screed shall be consolidated by internal vibrators so as to ensure complete filling under the slip-form. Prior to placement of concrete on sloped walls or slabs, the Contractor shall submit a plan specifically detailing methods and sequence of placements, proposed

concrete screed equipment, location of construction joints and waterstops, and/or any proposed deviations from the aforementioned to the Engineer for review and approval.

- S. Concrete shall not be placed during rains sufficiently heavy or prolonged to wash mortar from coarse aggregate on the forward slopes of the placement. Once placement of concrete has commenced in a block, placement shall not be interrupted by diverting the placing equipment to other uses.

#### 3.04 PLACING FLOOR SLABS ON GRADE

- A. The subgrade for slabs on ground shall be well drained and of adequate and uniform loadbearing nature. The in-place density of the subgrade soils shall be at least the minimum required by the specifications. No foundation, slab, or pavement concrete shall be placed until the depth and character of the foundation soils have been inspected and approved by the materials testing consultant.
- B. The subgrade shall be free of frost before concrete placing begins. If the temperature inside a building where concrete is to be placed is below freezing it shall be raised and maintained above 50° long enough to remove all frost from the subgrade.
- C. The subgrade shall be moist at the time of concreting. If necessary, it shall be dampened with water in advance of concreting, but there shall be no free water standing on the subgrade nor any muddy or soft spots when the concrete is placed.
- D. Thirty-pound felt paper shall be provided between edges of slab-on-grade and vertical and horizontal concrete surfaces, unless otherwise indicated on the Drawings.
- E. Contraction joints shall be provided in slabs-on-grade at locations indicated on the Drawings. Contraction joints shall be installed as per Section 03290 - Joints in Concrete.
- F. Floor slabs shall be screeded level or pitched to drain as indicated on the Drawings. Finishes shall conform with requirements of Section 03350 - Concrete Finishes.

#### 3.05 PLACING CONCRETE UNDERWATER - Not Used

#### 3.06 PLACING CONCRETE UNDER PRESSURE

- A. Where concrete is conveyed and placed by mechanically applied pressure, the equipment shall have the capacity for the operation. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. To obtain the least line resistance, the layout of the pipeline system shall contain a minimum number of bends with no change in pipe size. If two sizes of pipe must be used, the smaller diameter should be used at the pump end and the larger at the discharge end. When pumping is completed, the concrete remaining in the pipelines, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients.

- B. Priming of the concrete pumping equipment shall be with cement grout only. Use of specialty mix pump primers or pumping aids will not be allowed.
- C. No aluminum parts shall be in contact with the concrete during the entire placing of concrete under pressure at any time.
- D. Prior to placing concrete under pressure, the Contractor shall submit the concrete mix design together with test results from a materials testing consultant proving the proposed mix meets all requirements. In addition, an actual pumping test under field conditions is required prior to acceptance of the mix. This test requires a duplication of anticipated site conditions from beginning to end. The batching and truck mixing shall be the same as will be used; the same pump and operator shall be present and the pipe and pipe layouts will reflect the maximum height and distance contemplated. All submissions shall be subject to approval by the Engineer.
- E. If the pumped concrete does not produce satisfactory end results, the Contractor shall discontinue the pumping operation and proceed with the placing of concrete using conventional methods.
- F. The pumping equipment must have two cylinders and be designed to operate with one cylinder only in case the other one is not functioning. In lieu of this requirement, the Contractor may have a standby pump on the site during pumping.
- G. The minimum diameter of the hose (conduits) shall be four inches.
- H. Pumping equipment and hoses (conduits) that are not functioning properly shall be replaced.
- I. Concrete samples for quality control in accordance with Article 3.10 will be taken at the placement (discharge) end of the line.

### 3.07 ORDER OF PLACING CONCRETE

- A. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints shown on the Drawings and maximum lengths as indicated on Drawings. Where required on the Drawings and wherever else practical, the placing of such units shall be done in a strip pattern in accordance with ACI 302.1. A minimum of 72 hours shall pass prior to placing concrete directly adjacent to previously placed concrete.

### 3.08 CONCRETE WORK IN COLD WEATHER

- A. Cold weather concreting procedures shall conform to the requirements of ACI 306.
- B. The Engineer may prohibit the placing of concrete at any time when air temperature is 40°F. or lower. If concrete work is permitted, the concrete shall have a minimum temperature, as placed, of 55°F. for placements less than 12" thick, 50°F. for placements

12" to 36" thick, and 45°F. for placements greater than 36" thick. The temperature of the concrete as placed shall not exceed the aforementioned minimum values by more than 20°F, unless otherwise approved by the Engineer.

- C. All aggregate and water shall be preheated. Precautions shall be taken to avoid the possibility of flash set when aggregate or water are heated to a temperature in excess of 100°F. in order to meet concrete temperature requirements. The addition of admixtures to the concrete to prevent freezing is not permitted. All reinforcement, forms, and concrete accessories with which the concrete is to come in contact shall be defrosted by an approved method. No concrete shall be placed on frozen ground.

### 3.09 CONCRETE WORK IN HOT WEATHER

- A. Hot weather concreting procedures shall conform to the requirements of ACI 305.
- B. When air temperatures exceed 85°F., or when extremely dry conditions exist even at lower temperatures, particularly if accompanied by high winds, the Contractor and his concrete supplier shall exercise special and precautionary measures in preparing, delivering, placing, finishing, curing and protecting the concrete mix. The Contractor shall consult with the Engineer regarding such measures prior to each day's placing operation and the Engineer reserves the right to modify the proposed measures consistent with the requirements of this Section of the Specifications. All necessary materials and equipment shall be on hand and in position prior to each placing operation.
- C. Preparatory work at the job site shall include thorough wetting of all forms, reinforcing steel and, in the case of slab pours on ground or subgrade, spraying the ground surface on the preceding evening and again just prior to placing. No standing puddles of water shall be permitted in those areas which are to receive the concrete.
- D. The temperature of the concrete mix when placed shall not exceed 90°F.
- E. Temperature of mixing water and aggregates shall be carefully controlled and monitored at the supplier's plant, with haul distance to the job site being taken into account. Stockpiled aggregates shall, if necessary, be shaded from the sun and sprinkled intermittently with water. If ice is used in the mixing water for cooling purposes, it must be entirely melted prior to addition of the water to the dry mix.
- F. Delivery schedules shall be carefully planned in advance so that concrete is placed as soon as practical after it is properly mixed. For hot weather concrete work (air temperature greater than 85°F), discharge of the concrete to its point of deposit shall be completed within 60 minutes from the time the concrete is batched.
- G. The Contractor shall arrange for an ample work force to be on hand to accomplish transporting, vibrating, finishing, and covering of the fresh concrete as rapidly as possible.

### 3.10 QUALITY CONTROL

#### A. Field Testing of Concrete

1. The Contractor shall coordinate with the Engineer's project representative the on-site scheduling of the materials testing consultant personnel as required for concrete testing.
2. Concrete for testing shall be supplied by the Contractor at no additional cost to the Owner, and the Contractor shall provide assistance to the materials testing consultant in obtaining samples. The Contractor shall dispose of and clean up all excess material.

#### B. Consistency

1. The consistency of the concrete will be checked by the materials testing consultant by standard slump cone tests. The Contractor shall make any necessary adjustments in the mix as the Engineer and/or the materials testing consultant may direct and shall upon written order suspend all placing operations in the event the consistency does not meet the intent of the specifications. No payment shall be made for any delays, material or labor costs due to such eventualities.
2. Slump tests shall be made in accordance with ASTM C 143. Slump tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.
3. Concrete with a specified nominal slump shall be placed having a slump within 1” (higher or lower) of the specified slump. Concrete with a specified maximum slump shall be placed having a slump less than the specified slump.

#### C. Unit Weight

1. Samples of freshly mixed concrete shall be tested for unit weight by the materials testing consultant in accordance with ASTM C 138.
2. Unit weight tests will be performed as deemed necessary by the Engineer and each time compressive strength samples are taken.

#### D. Air Content

1. Samples of freshly mixed concrete will be tested for entrained air content by the materials testing consultant in accordance with ASTM C 231.



2. Air content tests will be performed as deemed necessary by the materials testing consultant and each time compressive strength samples are taken.
3. In the event test results are outside the limits specified, additional testing shall occur. Admixture quantity adjustments shall be made immediately upon discovery of incorrect air entrainment.

#### E. Compressive Strength

1. Samples of freshly mixed concrete will be taken by the materials testing consultant and tested for compressive strength in accordance with ASTM C 172, C 31 and C 39, except as modified herein.
2. In general, one sampling shall be taken for each placement in excess of five (5) cubic yards, with a minimum of one (1) sampling for each day of concrete placement operations, or for each one hundred (100) cubic yards of concrete, or for each 5,000 square feet of surface area for slabs or walls, whichever is greater.
3. Each sampling shall consist of at least five (5) 6x12 cylinders or (8) 4x8 cylinders. Each cylinder shall be identified by a tag, which shall be hooked or wired to the side of the container. The materials testing consultant will fill out the required information on the tag, and the Contractor shall satisfy himself that such information shown is correct.
4. The Contractor shall be required to furnish labor to the Owner for assisting in preparing test cylinders for testing. The Contractor shall provide approved curing boxes for storage of cylinders on site. The insulated curing box shall be of sufficient size and strength to contain all the specimens made in any four consecutive working days and to protect the specimens from falling over, being jarred or otherwise disturbed during the period of initial curing. The box shall be erected, furnished and maintained by the Contractor. Such box shall be equipped to provide the moisture and to regulate the temperature necessary to maintain the proper curing conditions required by ASTM C 31. Such box shall be located in an area free from vibration such as pile driving and traffic of all kinds and such that all specimen are shielded from direct sunlight and/or radiant heating sources. No concrete requiring inspection shall be delivered to the site until such storage curing box has been provided. Specimens shall remain undisturbed in the curing box until ready for delivery to the testing laboratory but not less than sixteen hours.
5. The Contractor shall be responsible for maintaining the temperatures of the curing box during the initial curing of test specimens with the temperature preserved between 60°F and 80°F as measured by a maximum-minimum thermometer. The Contractor shall maintain a written record of curing box temperatures for each day curing box contains test specimens. Temperature shall be recorded a minimum of three times a day with one recording at the start of the work day and one recording at the end of the work day.

6. When transported, the cylinders shall not be thrown, dropped, allowed to roll, or be damaged in any way.
7. Compression tests shall be performed in accordance with ASTM C 39. For 6x12 cylinders, two test cylinders will be tested at seven days and two at 28 days. For 4x8 cylinders, three test cylinders will be tested at seven days, three at 28 days. The remaining cylinders will be held to verify test results, if needed.

F. Evaluation and Acceptance of Concrete

1. Evaluation and acceptance of the compressive strength of concrete shall be according to the requirements of ACI 214, ACI 318, and ACI 350.
2. The strength level of concrete will be considered satisfactory if all of the following conditions are satisfied.
  - a. Every arithmetic average of any three consecutive strength tests equals or exceeds the minimum specified 28-day compressive strength for the mix (see Article 2.08).
  - b. No individual compressive strength test results falls below the minimum specified strength by more than 500 psi.
3. In the event any of the conditions listed above are not met, the mix proportions shall be corrected for the next concrete placing operation.
4. In the event that condition 2B is not met, additional tests in accordance with Article 3.10, paragraph H shall be performed.
5. When a ratio between 7-day and 28-day strengths has been established by these tests, the 7-day strengths shall subsequently be taken as a preliminary indication of the 28-day strengths. Should the 7-day test strength from any sampling be more than 10% below the established minimum strength, the Contractor shall:
  - a. Immediately provide additional periods of curing in the affected area from which the deficient test cylinders were taken.
  - b. Maintain or add temporary structural support as required.
  - c. Correct the mix for the next concrete placement operation, if required to remedy the situation.
6. All concrete which fails to meet the ACI requirements and these specifications is subject to removal and replacement at no additional cost to the Owner.

G. When non-compliant concrete is identified, test reports shall be sent immediately to the Engineer for review.

H. Additional Tests

1. When ordered by the Engineer, additional tests on in-place concrete shall be provided and paid for by the Contractor.
2. In the event the 28-day test cylinders fail to meet the minimum strength requirements as outlined in Article 3.10, paragraph F, the Contractor shall have concrete core specimens obtained and tested from the affected area immediately.
  - a. Three cores shall be taken for each sample in which the strength requirements were not met.
  - b. The drilled cores shall be obtained and tested in conformance with ASTM C 42. The tests shall be conducted by a materials testing consultant approved by the Engineer.
  - c. The location from which each core is taken shall be approved by the Engineer. Each core specimen shall be located, when possible, so its axis is perpendicular to the concrete surface and not near formed joints or obvious edges of a unit of deposit.
  - d. The core specimens shall be taken, if possible, so no reinforcing steel is within the confines of the core.
  - e. The diameter of core specimens should be at least 3 times the maximum nominal size of the course aggregate used in the concrete, but must be at least 2-inches in diameter.
  - f. The length of specimen, when capped, shall be at least twice the diameter of the specimen.
  - g. The core specimens shall be taken to the laboratory and when transported, shall not be thrown, dropped, allowed to roll, or damaged in any way.
  - h. Two (2) copies of test results shall be mailed directly to the Engineer. The concrete in question will be considered acceptable if the average compressive strength of a minimum of three test core specimens taken from a given area equal or exceed 85% of the specified 28-day strength and if the lowest core strength is greater than 75% of the specified 28-day strength.
3. In the event that concrete placed by the Contractor is suspected of not having proper air content, the Contractor shall engage a materials testing consultant approved by

the Engineer, to obtain and test samples for air content in accordance with ASTM Specification C 457.

### 3.11 CARE AND REPAIR OF CONCRETE

- A. The Contractor shall protect all concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance by the Owner. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface. Care shall be exercised to avoid jarring forms or placing any strain on the ends of projecting reinforcing bars. Any concrete found to be damaged, or which may have been originally defective, or which becomes defective at any time prior to the final acceptance of the completed work, or which departs from the established line or grade, or which, for any other reason, does not conform to the requirements of the Contract Documents, shall be satisfactorily repaired or removed and replaced with acceptable concrete at no additional cost to the Owner.
- B. Areas of honeycomb shall be chipped back to sound concrete and repaired as directed.
- C. Concrete formwork blowouts or unacceptable deviations in tolerances for formed surfaces due to improperly constructed or misaligned formwork shall be repaired as directed. Bulging or protruding areas, which result from slipping or deflecting forms shall be ground flush or chipped out and redressed as directed.
- D. Areas of concrete in which cracking, spalling, or other signs of deterioration develop prior to final acceptance shall be removed and replaced, or repaired as directed. This stipulation includes concrete that has experienced cracking due to drying or thermal shrinkage of the concrete. Structural cracks shall be repaired using an approved epoxy injection system. Non-structural cracks shall be repaired using an approved hydrophilic resin pressure injected grout system, unless other means of repair are deemed necessary and approved. All repair work shall be performed at no additional cost to the Owner.
- E. Concrete which fails to meet the strength requirements as outlined in Article 3.10, paragraph F, will be analyzed as to its adequacy based upon loading conditions, resultant stresses and exposure conditions for the particular area of concrete in question. If the concrete in question is found unacceptable based upon this analysis, that portion of the structure shall be strengthened or replaced by the Contractor at no additional cost to the Owner. The method of strengthening or extent of replacement shall be as directed by the Engineer.

- END OF SECTION -

**SECTION 03350**  
**CONCRETE FINISHES**

**PART 1 -- GENERAL**

1.01 THE REQUIREMENT

Furnish all materials, labor, and equipment required to provide finishes of all concrete surfaces specified herein and shown on the Drawings.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03100 – Concrete Formwork
- B. Section 03300 – Cast-in-Place Concrete
- C. Section 03600 – Grout

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
  - 1. ACI 301 – Specifications for Structural Concrete for Buildings
  - 2. ACI 318 – Building Code Requirements for Structural Concrete

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01300 – Submittals.
  - 1. Manufacturer's literature on all products specified herein.

**PART 2 -- PRODUCTS**

2.01 CONCRETE FLOOR SEALER

Floor sealer shall be Diamond Clear VOX or Super Diamond Clear VOX by the Euclid Chemical Company, MasterKure CC 300 SB by BASF Master Builder Solutions.

## 2.02 CONCRETE LIQUID DENSIFIER AND SEALANT

Concrete liquid densifier and sealant shall be a high performance, deeply penetrating concrete densifier and sealant. Product shall be odorless, colorless, VOC-compliant, non-yellowing silicate based solution designed to harden, dustproof and protect concrete floors subjected to heavy vehicular traffic and to resist black rubber tire marks on concrete surfaces. The product must contain a minimum solids content of 20% of which 50% is silicate. Acceptable products are Diamond Hard by the Euclid Chemical Company, Seal Hard by L&M Construction Chemicals and MasterKure HD 210 WB by BASF Master Builder Solutions.

## 2.03 NON-METALLIC FLOOR HARDENER

The specified non-metallic mineral aggregate hardener shall be formulated, processed, and packaged under stringent quality control at the manufacturer's owned and controlled factory. The hardener shall be a factory-blended mixture of specifically processed graded mineral aggregate, selected Portland cement, and necessary plasticizing agents. Acceptable products shall be "Surflex" by the Euclid Chemical Company, "Harcol" by Sonneborn, "Maximent" by BASF, and "Mastercon" by BASF.

## 2.04 NON-OXIDIZING HEAVY DUTY METALLIC FLOOR HARDENER

Non-oxidizing heavy duty metallic floor hardener shall be formulated, processed, and packaged under stringent quality control at the manufacturer's owned and controlled factory. The hardener shall be a mixture of specifically processed non-rusting aggregate, selected Portland cement, and necessary plasticizing agents. Product shall be "Diamond-Plate" by the Euclid Chemical Company, or Masterplate by BASF Construction Chemicals.

## 2.05 NON-SLIP FLOORING ADDITIVE

Non-slip flooring additives for slip resistant floors shall be non-metallic. Non-slip flooring additives shall be Frictex NS by BASF Construction Chemicals, A-H Alox by Anti-Hydro, or Euco Grip by the Euclid Chemical Company.

## PART 3 -- EXECUTION

### 3.01 FINISHES ON FORMED CONCRETE SURFACES

- A. After removal of forms, the finishes described below shall be applied in accordance with Article 3.05 - Concrete Finish Schedule. Unless the finish schedule specifies otherwise, all surfaces shall receive at least a Type I finish. The Engineer shall be the sole judge of acceptability of all concrete finish work.

1. Type I - Rough: All fins, burrs, offsets, marks and all other projections left by the forms shall be removed. Projections, depressions, etc. below finished grade required to be removed will only be those greater than 1/4-inch. All holes left by removal of ends of ties, and all other holes, depressions, bugholes, air/blow holes or voids shall be filled solid with cement grout after first being thoroughly wetted and then struck off flush. The only holes below grade to be filled will be tie holes and any other holes larger than 1/4-inch in any dimension. Honeycombs shall be chipped back to solid concrete and repaired as directed by the Engineer. All holes shall be filled with tools, such as sponge floats and trowels, that will permit packing the hole solidly with cement grout. Cement grout shall consist of one part cement to three parts sand, epoxy bonding agent (for tie holes only) and the amount of mixing water shall be as little as consistent with the requirements of handling and placing. Color of cement grout shall match the adjacent wall surface.
2. Type II - Grout Cleaned: Where this finish is required, it shall be applied after completion of Type I finish. After the concrete has been predampened, a slurry consisting of one part cement (including an appropriate quantity of white cement in order to produce a color matching the surrounding concrete) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over the surface with clean burlap pads or sponge rubber floats. Mix proportions shall be submitted to the Engineer after a sample of the work is established and accepted. Any surplus shall be removed by scraping and then rubbing with clean burlap.
3. Type III - Smooth Rubbed: Where this finish is required, it shall be applied after the completion of the Type II finish. No rubbing shall be done before the concrete is thoroughly hardened and the mortar used for patching is firmly set. A smooth, uniform surface shall be obtained by wetting the surface and rubbing it with a carborundum stone to eliminate irregularities. Unless the nature of the irregularities requires it, the general surface of the concrete shall not be cut into. Corners and edges shall be slightly rounded by the use of the carborundum stone. Brush finishing or painting with grout or neat cement will not be permitted. A 100 square foot example shall be established at the beginning of the project to establish acceptability.

### 3.02 SLAB AND FLOOR FINISHES

- A. The finishes described below shall be applied to floors, slabs, flow channels and top of walls in accordance with Article 3.05 - Concrete Finish Schedule. The Engineer shall be the sole judge of acceptability of all such finish work.
  1. Type "A" - Screeded: This finish shall be obtained by placing screeds at frequent intervals and striking off to the surface elevation required. When a Type "F" finish is subsequently to be applied, the surface of the screeded concrete shall be roughened with a concrete rake to 1/2" minimum deep grooves prior to final set.

2. Type "B" - Wood or Magnesium Floated: This finish shall be obtained after completion of a Type "A" finish by working a previously screeded surface with a wood or magnesium float or until the desired texture is reached. Floating shall begin when the water sheen has disappeared and when the concrete has sufficiently hardened so that a person's foot leaves only a slight imprint. If wet spots occur, water shall be removed with a squeegee. Care shall be taken to prevent the formation of laitance and excess water on the finished surface. All edges shall be edged with an 1/8-inch tool as directed by the Engineer. The finished surface shall be true, even, and free from blemishes and any other irregularities.
3. Type "C" - Cork Floated: This finish shall be similar to Type "B" but slightly smoother than that obtained with a wood float. It shall be obtained by power or band floating with cork floats.
4. Type "D" - Steel Troweled: This finish shall be obtained after completion of a Type "B" finish. When the concrete has hardened sufficiently to prevent excess fine material from working to the surface, the surface shall be compacted and smoothed with not less than two thorough and complete steel troweling operations. In areas which are to receive a floor covering such as tile, resilient flooring, or carpeting, the applicable Specification Sections and Contract Drawings shall be reviewed for the required finishes and degree of flatness. In areas that are intermittently wet such as pump rooms, only one troweling operation is required to provide some trowel marks for slip resistance. All edges shall be edged with an 1/8-inch tool as directed by the Engineer. The finish shall be brought to a smooth, dense surface, free from defects and blemishes.
5. Type "E" - Broom or Belt: This finish shall provide the surface with a transverse scored texture by drawing a broom or burlap belt across the surface immediately after completion of a Type "B" finish. All edges shall be edged with an 1/8-inch tool as directed by the Engineer.
6. Type "F" - Swept in Grout Topping: This finish shall be applied after a completion of a Type "A" finish. The concrete surface shall be properly cleaned, washed, and coated with a mixture of water and Portland Cement. Cement grout in accordance with Section 03600 shall then be plowed and swept into neat conformance with the blades or arms of the apparatus by turning or rotating the previously positioned mechanical equipment. Special attention shall be paid to true grades, shapes and tolerances as specified by the manufacturer of the equipment. Before beginning this finish, the Contractor shall notify the Engineer and the equipment manufacturer of the details of the operation and obtain approval and recommendations.
7. Type "G" Hardened Finish: This finish shall be applied after completion of a Type "B" or Type "C" finish and prior to application of a Type "D" finish. Hardeners shall be applied in strict accordance with the manufacturer's requirements. Hardeners shall be applied using a mechanical spreader. The hardener shall be



applied in two shakes with the first shake comprising 2/3 of the total amount. Type "D" finish shall be applied following completion of application of the hardener.

- a. Non-metallic floor hardener shall be applied where specifically required on the Contract Drawings at the rate of 1.0 pounds/ft.<sup>2</sup>.
  - b. Non-oxidizing heavy duty metallic floor hardener shall be applied at the loading docks and where specifically required on the Contract Drawings or specified herein at the rate of 1.5 pounds/ft.<sup>2</sup>.
8. Type "H" - Non-Slip Finish: This finish shall be provided by applying a non-slip flooring additive concurrently with the application of a Type "D" finish and/or installation of floor sealants. Application procedure shall be in accordance with manufacturer's instructions. Finish shall be applied where specifically required on the Contract Drawings or specified herein.
9. Type "J" - Raked Finish: This finish shall be provided by raking the surface as soon as the condition of the concrete permits by making depressions of  $\pm 1/4$  inch.

### 3.03 CONCRETE SEALERS

- A. Concrete sealers shall be applied where specifically required on the Contract Drawings or specified herein.
- B. Sealers shall be applied after installation of all equipment, piping, etc. and after completion of any other related construction activities. Application of sealers shall be in strict accordance with manufacturer's requirements.
- C. Sealers shall be applied to all floor slabs not painted and not intended to be immersed.
- D. Floor slabs subjected to vehicular traffic shall be sealed with the concrete liquid densifier and sealer.
- E. All other floor slabs to receive sealer shall be sealed with concrete floor sealer.

### 3.04 FINISHES ON EQUIPMENT PADS

- A. Formed surfaces of equipment pads shall receive a Type III finish.
- B. Top surfaces of equipment pads, except those surfaces subsequently required to receive grout and support equipment bases, shall receive a Type "D" finish, unless otherwise noted. Surfaces which will later receive grout shall, before the concrete takes its final set, be made rough by removing the sand and cement that accumulates on the top to the extent that the aggregate will be exposed with irregular indentations in the surface up to 1/2 inch deep.

### 3.05 CONCRETE FINISH SCHEDULE

<b>Item</b>	<b>Type of Finish</b>
Inner face of walls of tanks, flow channels, wet wells, perimeter walls, and miscellaneous concrete structures:	
From 1 feet below water surface to bottom of wall	II
From top of wall to 1 feet below water surface	II
Exterior concrete walls below grade	I
Exterior exposed concrete walls, ceilings, beams, manholes, hand holes, miscellaneous structures and columns (including top of wall) to one foot below grade. All other exposed concrete surfaces not specified elsewhere	II
Exterior concrete sidewalks, steps, ramps, decks, slabs on grade and landings exposed to weather	E
Floors of process equipment tanks indicated on Drawings to receive grout topping	F

- END OF SECTION -

## SECTION 03600

### GROUT

#### PART 1 -- GENERAL

##### 1.01 THE REQUIREMENT

Furnish all materials, labor, and equipment required to provide all grout used in concrete work and as bearing surfaces for base plates, in accordance with the Contract Documents.

##### 1.02 RELATED WORK SPECIFIED ELSEWHERE

Requirements of related work are included in Division 1 and Division 2 of these Specifications.

##### 1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.

1. CRD-C 621 Corps of Engineers Specification for Non-shrink Grout
2. ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 inch or 50 mm cube Specimens)
3. ASTM C 531 Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts and Monolithic Surfacing
4. ASTM C 579 Test Method for Compressive Strength of Chemical-Resistant Mortars and Monolithic Surfacing
5. ASTM C 827 Standard Test Method for Early Volume Change of Cementitious Mixtures
6. ASTM C 144 Standard Specification for Aggregate for Masonry Mortar
7. ASTM C 1107 Standard Specification for Packaged Dry, Hydraulic Cement Grout (Nonshrink)

## 1.04 SUBMITTALS

### A. Submit the following in accordance with Section 01300 - Submittals.

1. Certified test results verifying the compressive strength and shrinkage and expansion requirements specified herein.
2. Manufacturer's literature containing instructions and recommendations on the mixing, handling, placement and appropriate uses for each type of grout used in the work.

## 1.05 QUALITY ASSURANCE

### A. Field Tests

1. Compression test specimens will be taken during construction from the first placement of each type of grout and at intervals thereafter as selected by the Engineer to insure continued compliance with these Specifications. The specimens will be made by the Engineer or its representative.
  - a. Compression tests and fabrication of specimens for cement grout and non-shrink grout will be performed as specified in ASTM C 109 at intervals during construction as selected by the Engineer. A set of three specimens will be made for testing at seven days, 28 days and any additional time period as appropriate.
  - b. Compression tests and fabrication of specimens for epoxy grout will be performed as specified in ASTM C 579, Method B, at intervals during construction as selected by the Engineer. A set of three specimens will be made for testing at seven days and any other time period as appropriate.
2. The cost of all laboratory tests on grout will be borne by the Owner, but the Contractor shall assist the Engineer in obtaining specimens for testing. The Contractor shall be charged for the cost of any additional tests and investigation on work performed which does not meet the specifications. The Contractor shall supply all materials necessary for fabricating the test specimens, at no additional cost to the Owner.
3. All grout, already placed, which fails to meet the requirements of these Specifications, is subject to removal and replacement at no additional cost to the Owner.

## PART 2 -- PRODUCTS

### 2.01 MATERIALS

#### A. Cement Grout

1. Cement grout shall be composed of Portland Cement and sand in the proportion specified in the Contract Documents and the minimum amount of water necessary to obtain the desired consistency. If no proportion is indicated, cement grout shall consist of one part Portland Cement to three parts sand. Water amount shall be as required to achieve desired consistency without compromising strength requirements. White Portland Cement shall be mixed with the Portland Cement as required to match color of adjacent concrete.
2. The minimum compressive strength at 28 days shall be 4000 psi.
3. For beds thicker than 1-1/2 inch and/or where free passage of grout will not be obstructed by coarse aggregate, 1-1/2 parts of coarse aggregate having a top size of 3/8 inch should be added. This stipulation does not apply for grout being swept in by a mechanism. These applications shall use a plain cement grout without coarse aggregate regardless of bed thickness.
4. Sand shall conform to the requirements of ASTM C144.

#### B. Non-Shrink Grout

Non-shrink grout shall conform to CRD-C 621 and ASTM C 1107, Grade B or C when tested at a max. fluid consistency of 30 seconds per CDC 611/ASTM C939 at temperature extremes of 45°F and 90°F and an extended working time of 15 minutes. Grout shall have a min. 28-day strength of 7,000 psi. Non-shrink grout shall be, "Euco N-S" by the Euclid Chemical Company, "SikagROUT 212" by Sika Corporation, "Conspec 100 Non-Shrink Non-Metallic Grout" by Conspec, "Masterflow 555 Grout" by BASF Master Builder Solutions.

#### C. Epoxy Grout

1. Epoxy grout shall be "Sikadur 32 Hi-Mod" by Sika Corporation, "Duralcrete LV" by Tamms Industries, or "Euco #452 Series" by Euclid Chemical, "MasterEmaco ADH 1090 RS" by BASF Master Builder Solutions.
2. Epoxy grout shall be modified as required for each particular application with aggregate per manufacturer's instructions.

#### D. Epoxy Base Plate Grout

Epoxy base plate grout shall be "Sikadur 42, Grout-Pak" by Sika Corporation, or "Masterflow 648" by BASF Master Builder Solutions.

### 2.02 CURING MATERIALS

Curing materials shall be as specified in Section 03370, Concrete Curing for cement grout and as recommended by the manufacturer for prepackaged grouts.

### PART 3 -- EXECUTION

#### 3.01 GENERAL

- A. The different types of grout shall be used for the applications stated below unless noted otherwise in the Contract Documents. Where grout is called for in the Contract Documents which does not fall under any of the applications stated below, non-shrink grout shall be used unless another type is specifically referenced.
  - 1. Cement grout shall be used for grout toppings and for patching of fresh concrete.
  - 2. Non-shrink grout shall be used for grouting beneath base plates of structural metal framing.
  - 3. Epoxy grout shall be used for bonding new concrete to hardened concrete.
  - 4. Epoxy base plate grout shall be used for precision seating of base plates including base plates for all equipment such as engines, mixers, pumps, vibratory and heavy impact machinery, etc.
- B. New concrete surfaces to receive cement grout shall be as specified in Section 03350, Concrete Finishes, and shall be cleaned of all dirt, grease and oil-like films. Existing concrete surfaces shall likewise be cleaned of all similar contamination and debris, including chipping or roughening the surface if a laitance or poor concrete is evident. The finish of the grout surface shall match that of the adjacent concrete. Curing and protection of cement grout shall be as specified in Section 03370, Concrete Curing.
- C. All mixing, surface preparation, handling, placing, consolidation, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the manufacturer.
- D. The Contractor, through the manufacturer of a non-shrink grout and epoxy grout, shall provide on-site technical assistance upon request, at no additional cost to the Owner.

#### 3.02 CONSISTENCY

The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is such that the grout is plastic and moldable but will not flow.

#### 3.03 MEASUREMENT OF INGREDIENTS

- A. Measurements for cement grout shall be made accurately by volume using containers. Shovel measurement shall not be allowed.
- B. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.

#### 3.04 GROUT INSTALLATION

Grout shall be placed quickly and continuously, shall completely fill the space to be grouted and be thoroughly compacted and free of air pockets. The grout may be poured in place, pressure grouted by gravity, or pumped. The use of pneumatic pressure or dry-packed grouting requires approval of the Engineer. For grouting beneath base plates, grout shall be poured from one side only and thence flow across to the open side to avoid air-entrapment.

- END OF SECTION -

**SECTION 03732**  
**CONCRETE REPAIRS**

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The Contractor shall furnish all materials, labor, equipment, tools, etc., required for the repair, renovation, and replacement of concrete and/or reinforcing steel as indicated on the Drawings, specified herein, and determined by field survey.
- B. The Contractor, in conjunction with the Engineer, shall determine the extent of cracked or deteriorated concrete to be rehabilitated and/or resurfaced. A summary of the work to be performed shall be submitted to the Engineer for review, and such summary shall be approved by the Engineer prior to commencement of the Work.
- C. Concrete repairs include the following:

Repair of Concrete Slabs and Walls as specified on the Drawings.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Division 1 - General Requirements
- B. Division 3 - Concrete

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

Shall be as specified in Section 01090, Reference Standards.

1.04 SUBCONTRACTOR/APPLICATOR QUALIFICATIONS

- A. The Contractor shall furnish the name of all subcontractors/applicators which he proposes to use for this work, including necessary evidence and/or experience records to ascertain their qualifications in the application of epoxy, urethane, and polymer-modified mortars and grouts. Approved applicator qualifications shall include:
- B. A minimum of 5 years experience in applying epoxy, urethane, and polymer-modified and cement-based compounds similar to those specified in this Section.
- C. A letter from the manufacturer of the specified materials, on the manufacturer's letterhead, signed by an officer of the company, stating that the subcontractor/applicator has been trained in the proper techniques for applying the product, including surface preparation and



mixing, placing, curing, and caring for the manufacturer's products. This letter shall further state that the subcontractor/applicator is on the manufacturer's approved list of contractors.

#### 1.05 SUBMITTALS

- A. Material certifications and technical data sheets on all grouts, mortars, epoxy resins, aggregates and repair products specified in this Section.
- B. Subcontractor/Applicator qualifications as specified in Section 1.04.
- C. Shop Drawings detailing any planned deviation from the proposed construction sequence and/or method of repair.
- D. The Contractor, based on their experience in their profession, may submit to the Engineer for approval, alternative materials and/or methods of work to assure the durability and watertight integrity of the repair work performed.

#### 1.06 ADDITIONAL GUARANTEE

The Contractor shall guarantee all repair work performed under this Contract against defects in workmanship resulting in leakage and/or failure of concrete bond for a period of two years from the date of the Certificate of Substantial Completion.

### PART 2 -- MATERIALS

#### 2.01 WATER

The water used for mixing concrete repair products shall be clear, potable, and free of deleterious substances.

#### 2.02 AGGREGATE

- A. All aggregate shall conform to ASTM C-33. The aggregate supplier shall submit to the Engineer documentation that the proposed aggregates comply with ASTM C-33 and the requirements listed below:
- B. Pea Gravel - Pea gravel shall meet the gradation and material requirements of Standard Size 14 as defined by ASTM C-33. Pea gravel shall be clean and free from deleterious matter and shall contain no limestone.

#### 2.03 EPOXY BONDING AGENT

An epoxy bonding agent shall be used when applying fresh concrete to previously placed concrete. Epoxy bonding agent shall conform to ASTM C-881 Type I, II, IV or V; Grade 2 for epoxy resin adhesives, depending on the application. The class of epoxy bonding

agent shall be suitable for all ambient and substrate temperatures. The epoxy resin shall be "Sikadur Hi-Mod Series" as manufactured by the Sika Corp, Lyndhurst, NJ, "CR 246" as manufactured by Sto Corporation, Atlanta, GA, "Duralbond" as manufactured by Euclid Chemical Company, Cleveland, OH, "Euco #452 Series" by the Euclid Chemical Company, or "MasterEmaco ADH series" by BASF Master Builder Solutions.

#### 2.04 ANTI-CORROSION REBAR COATING

All reinforcing steel cut or exposed during demolition and/or repair operations shall be protected with an anti-corrosive coating. The anti-corrosive coating shall be a two-component, polymer-modified cementitious material such as "Sika Armatec 110 EpoCem" manufactured by Sika Corp., Lyndhurst, NJ, "CR 246" manufactured by Sto Corporation, Atlanta, GA, "Duralprep A.C." by the Euclid Chemical Company, or "MasterEmaco P 124" by BASF Master Builder Solutions.

#### 2.05 STRUCTURAL CRACK REPAIR MATERIAL

Structural crack repair material shall be a two-component, polymer-modified or silica fume enhanced cementitious mortar and shall conform to EPA/USPHS standards for surface contact with potable water supplies. Structural crack repair material shall be "Sikatop 123 Plus" manufactured by Sika Corp., Lyndhurst, NJ, or "Emaco S88 CI" or "MasterSeal 590" by BASF Master Builder Solutions.

#### 2.06 EPOXY CRACK REPAIR BINDER

Epoxy crack repair binder shall be a two-component, 100% solids, high-modulus, low viscosity epoxy adhesive designed for structural repair. The epoxy adhesive shall be "Sikadur 52" manufactured by Sika Corp., Lyndhurst, NJ, "Duralcrete LV" manufactured by Euclid Chemical Company, Cleveland, OH, "Sto Poxy Binder CR633" manufactured by Sto Corporation, Atlanta, GA, "Eucopoly Injection Resin" by the Euclid Chemical Company, or "MasterInject 1500" by BASF Master Builder Solutions.

#### 2.07 WATERPROOF INJECTION GROUT

Waterproof crack repair material shall be a one-component, water-activated polyurethane hydrophilic injection grout capable of 700% expansion. Polyurethane grout shall form a tough flexible foam seal that is impenetrable to water. Hydrophilic injection grout shall be "Prime Flex 900 XLV" manufactured by Prime Resins, Conyers, GA, "AV-333 Injectaflex" manufactured by Avanti International, Webster, TX, or "DeNeef Sealfoam" manufactured by Grace Construction Products. Hydrophobic injection grout shall be "Prime Flex 920" manufactured by Prime Resins, Conyers, GA, "Sikafix HHLV" or "Sikafix HH+" manufactured by Sika Corp., Lyndhurst, NJ, or "DeNeef Flex PURE" manufactured by Grace Construction Products.

#### 2.08 SPALL REPAIR PATCHING MATERIAL

- A. All spall repairs not requiring formwork shall be repaired using a two-component, polymer-modified non-shrink cementitious mortar and shall have a minimum 28-day compressive strength of 7,000 psi. Spall repair mortar for use in horizontal applications shall be "Sikatop 122 Plus" manufactured by Sika Corp., Lyndhurst, NJ, "CR 700" manufactured by Sto Corporation, Atlanta, GA, "Eucocrete Supreme" by the Euclid Chemical Company, or MBT SD-2 or Emaco R310 by BASF Construction Chemicals. Spall repair mortar for use in vertical applications shall be "Sikatop 123 Plus" manufactured by Sika Corp., Lyndhurst, NJ, "Duraltop Gel" manufactured by Euclid Chemical Company, "CR 702" manufactured by Sto Concrete Restoration Division, Atlanta, GA, "Verticoat or Verticoat Supreme" by the Euclid Chemical Company, or "MasterEmaco N 425" or "MasterEmaco N 400" by BASF Master Builder Solutions.
- B. All spall repairs requiring formwork shall be repaired using a two-component, polymer-modified cementitious mortar/pea gravel mixture and shall have a minimum 28-day compressive strength of 7,000 psi. Spall repair mortar shall be "SikaTop 111 PLUS" manufactured by Sika Corp., Lyndhurst, NJ, "Eucocrete Supreme" manufactured by Euclid Chemical Company, Cleveland, OH, "Sto Flowable Mortar CR730" manufactured by Sto Corporation, Atlanta, GA, or "MasterEmaco T 310 CI" by BASF Master Builder Solutions.
- C. All spall repair materials shall conform to EPA/USPHS standards for surface contact with potable water supplies.

## 2.9 WATERPROOF MEMBRANE PATCH

Waterproof membrane patch shall be a hypalon sealing strip secured to the concrete substrate with an epoxy adhesive. Sealing system shall be installed per manufacturer's recommendations and shall be "Sikadur Combiflex" manufactured by Sika Corp., Lyndhurst, NJ. Minimum width of waterproof membrane patch shall be twelve (12) inches unless shown otherwise on Contract Drawings.

## 2.10 CEMENT BASED TEXTURED COATING

Cement based textured coating shall be "SikaTop 144" manufactured by Sika Corp., Lyndhurst, NJ, "MasterSeal 581" manufactured by BASF Master Builder Solutions, "Duraltop Coating" manufactured by Euclid Chemical Company, Cleveland, OH, "Euco seal or Tamoseal" by the Euclid Chemical Company. Cement based textured coating shall have a minimum durability of 10 years and be able to seal cracks with a width up to 1/8 inch.

## 2.11 STORAGE OF MATERIALS

The Contractor shall provide an area for repair material storage free from exposure to moisture in any form, before, during, and after delivery to the site. Manufactured materials shall be delivered in unbroken containers labeled with the manufacturer's name and product type. All mortar products shall be stored on raised platforms. Materials susceptible to damage by freezing shall be stored in a dry, heated, insulated area. Any material that has

hardened, partially set, become caked and/or has been contaminated or deteriorated shall be rejected. All aggregates shall be stored in clean bins, scows or platforms.

### PART 3 -- INSTALLATION

#### 3.01 GENERAL REQUIREMENTS

- A. No repair work shall be undertaken when ambient temperatures are below manufacturer's safe recommendations. No admixtures, except those required by the manufacturer, shall be used in the repairs specified herein. All products shall be applied in strict accordance with manufacturer's recommendations. The Contractor shall furnish and install safe scaffolding and ladders for the Engineer's prework inspection, the repair work activities, and the Engineer's final inspection
- B. Sandblast or waterblast (3000-4000 psi waterjet) deteriorated areas to remove all loose concrete, existing coatings, unsound material, debris, and laitance. All surfaces shall be clean, free of dirt, grease, loose particles, and deleterious substances and shall be prepared according to manufacturer's requirements.

#### 3.02 EPOXY BONDING AGENT

- A. Existing concrete surfaces shall be roughened prior to application of bonding agent. Concrete surface shall be clean and sound, free of all foreign particles and laitance. Repair material shall be placed while bonding agent is still tacky. If bonding agent cures prior to placement of repair material, bonding agent shall be reapplied.
- B. Repairing concrete with epoxy mortars shall conform to all the requirements of ACI 503.4 "Standard Specification for Repairing Concrete with Epoxy Mortars" (latest edition), except as modified herein.

#### 3.03 ANTI-CORROSION REBAR COATING

Reinforcing steel cut or exposed during demolition and/or repair operations shall be sandblasted and cleaned prior to coating with an anti-corrosive coating. Anti-corrosive coating shall be applied as soon as the reinforcement is exposed and cleaned. Coating shall thoroughly cover all exposed parts of the steel and shall be applied according to manufacturer's recommendations.

#### 3.04 STRUCTURAL CRACK REPAIR MATERIAL

Where indicated on the Drawings, all existing structural cracks 1/16" and wider shall be repaired with a structural crack repair material. Rout crack to 3/4" wide by 3/4" deep V-notch to expose sound concrete. Where rebar has deteriorated, crack shall be routed to expose 3/4" all around rebar. The resulting void in concrete shall be patched flush with the existing concrete surface using structural crack repair material.

### 3.05 EPOXY CRACK REPAIR BINDER

- A. Where indicated on the Drawings, all existing structural cracks 1/4" or smaller shall be repaired by pressure injecting an epoxy crack repair binder into the prepared crack. Seal crack surface and install injection ports per manufacturer's recommendations. Holes drilled for injection ports shall not cut rebar. If rebar is encountered during drilling, the hole shall be abandoned and relocated, and the abandoned hole shall be patched immediately with non-shrink grout flush with the surface of the existing concrete. Once the surface sealing material has cured, inject crack with epoxy crack repair binder using standard pressure injection equipment as directed by the manufacturer.
- B. Where indicated on the Drawings, all existing structural cracks wider than 1/4" shall be repaired by gravity feeding an epoxy crack repair binder into the prepared crack. First rout the concrete surface to form a 1/4" wide by 1/4" deep v-notch and clean the crack to remove all loose and foreign particles. Fill the crack with clean, dry sand and then pour epoxy crack repair binder into V-notch, completely filling crack. As binder penetrates into crack, additional binder shall be applied to the V-notch.

### 3.06 WATERPROOF INJECTION GROUT

All existing, leaking cracks 1/4" or smaller shall be repaired by pressure injecting a waterproof injection grout into the prepared crack. Seal crack surface and install injection ports per manufacturer's recommendations. Holes drilled for injection ports shall not cut rebar. If rebar is encountered during drilling, the hole shall be abandoned and relocated, and the abandoned hole shall be patched immediately with non-shrink grout flush with the surface of the existing concrete. Once the surface sealing material has cured, inject crack with waterproof injection grout using standard pressure injection equipment as directed by the manufacturer.

### 3.07 SPALL REPAIR PATCHING MATERIAL

All voids or spalled areas to be repaired shall be chipped back to sound concrete a minimum 1/8" deep, cleaned and repaired with spall repair patching material according to manufacturer's recommendations. All patching shall provide a final finished surface which is flat, level and even with the existing concrete surface. Repair mortar shall not be feathered to meet existing concrete surface. Final patching on horizontal surfaces shall receive a broom finish consistent with the finish on the existing structure.

### 3.08 WATERPROOF MEMBRANE PATCH

Thoroughly clean the concrete substrate and apply waterproof membrane patch according to manufacturer's recommendations.

### 3.09 CEMENT BASED TEXTURED COATING

Thoroughly clean the concrete substrate and apply cement based textured coating according to manufacturer's recommendations. All necessary concrete repairs as detailed on the Contract Drawings shall be completed prior to applying coating.

### 3.10 CURING

All repair products shall be cured in strict accordance with manufacturer recommendations.

### 3.11 WORK IN CONFINED SPACES

The Contractor shall provide and maintain safe working conditions for all employees and subcontractors. Fresh air shall be supplied continuously to confined spaces through the combined use of existing openings, forced-draft fans and temporary ducts to the outside, or by direct air supply to individual workers. Fumes shall be exhausted to the outside from the lowest level of the confined space. Electrical fan motors shall be explosion-proof if in contact with fumes. No smoking or open fires shall be permitted in or near areas where volatile fumes may accumulate.

- END OF SECTION -

## SECTION 07900

### JOINT FILLERS, SEALANTS AND CAULKING

#### PART 1 -- GENERAL

##### 1.01 THE REQUIREMENT

Furnish labor, materials, equipment and appliances required for the complete execution of Work shown on the Drawings and specified herein.

##### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 03250 - Concrete Accessories
- B. Section 03290 - Joints in Concrete

##### 1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of the other requirements of the specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced specifications, codes, and standards refer to the most current issue available at the time of Bid.
  - 1. ASTM C-920 Elastomeric Joint Sealants
  - 2. ASTM D-1056 Flexible Cellular Materials - Sponge or Expanded Rubber
  - 3. SWRI Sealant and Caulking Guide Specification

##### 1.04 SUBMITTALS

- A. In accordance with the procedures and requirements set forth in Section 01300 – Submittals, submit the following:
  - 1. Manufacturers literature and installation instructions.
  - 2. Color samples of each type of sealant.

##### 1.05 QUALITY ASSURANCE

- A. Applicator shall be a company specializing in the installation of sealants with a minimum of five years experience.

## 1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened labeled packages.
- B. Store materials in location protected from freezing or damages.
- C. Reject and remove from the site materials within broken or damaged packaging.

## PART 2 -- PRODUCTS

### 2.01 MATERIALS

#### A. Sealants

1. Type 1: Multi-component, non-sag, low-modulus polyurethane rubber sealant meeting ASTM C-920, Type M, Grade NS, Class 25, use NT, M, A, and O. Capable of withstanding 50% in extension or compression such as Sikaflex-2C NS/SL, Sika Corporation, or Sonolastic NP-2, Sonneborn, or DynaTrol II by Pecora Corporation.
2. Type 2: Single component polyurethane sealant meeting ASTM C-920, Type S, Grade NS, Class 25, Use NT, M, A, and O. Capable of withstanding 25% in extension or compression such as Sikaflex 1A by Sika Corporation, DynaTrol 1-XL by Pecora Corporation, or Sonolastic NP-1 by BASF Construction Chemicals.
3. Type 3: Single component, low-modulus moisture curing silicone meeting ASTM C-920, Type S, Grade NS, Class 25, Use NT, M, G, and A. Capable of withstanding 50% extension and compression. Pecora 890 by Pecora Corporation, Sonolastic Omni Seal by BASF Construction Chemicals.
4. Type 4: Single component, mildew resistant, moisture-curing silicone meeting ASTM C-920, Type S, Grade NS, Class 25, Use NT, M, G, and A. Pecora 898 by Pecora Corporation, Sonolastic Omni Plus by BASF Construction Chemicals.
5. Type 5: Single component, acrylic latex meeting ASTM C-834. AC-20+ Silicone by Pecora Corporation, Sonneborn Sonolac by BASF Construction Chemicals.
6. Type 6: High grade butyl sealant meeting Federal Specification TT-S-00-1657. BC-158 by Pecora Corporation or equal.
7. Type 7: Multi-component chemical resistant polysulfide sealant conforming to ASTM C-920, Type M, Grade NS, Class 25 such as Deck-O-Seal by W.R. Meadows, Tammsflex by DuraJoint Concrete Accessories, or Synthacalk GC2+ by Pecora Corporation.



8. Type 8: Nonsag, Multi Component, traffic grade polyurethane sealant meeting ASTM C920, Type 19, Grade NS, Class 25, use T, M, A, and O. DynaTread by Pecora Corporation, Sonolastic Ultra by BASF Construction Chemicals.

- B. Primer: Non-staining primer recommended by sealant manufacturer for the substrates on this project.
- C. Backer Rod: Closed cell foam, nonreactive with caulking materials, non-oily, and approved by the sealant manufacturer. Minimum density shall be 2.00 pounds per cubic foot. Use no asphalt or bitumen-impregnated fiber with sealants.
- D. Joint Cleaner: Recommended by sealant or caulking compound manufacturer.
- E. Bond breaker: Either polyethylene film or plastic tape as recommended by the sealant manufacturer.
- F. Color: Where manufacturer's standard colors do not closely match materials being sealed, provide a custom color.

## PART 3 -- EXECUTION

### 3.01 QUALITY CONTROL

- A. Coordinate work with details shown on approved shop drawings prepared by other trades.
- B. Verify conditions in the field.
- C. Schedule work to follow closely the installation of other trades.
- D. Apply sealants and related items in temperatures and dry conditions recommended by the manufacturers.
- E. Do not paint sealant, unless recommended by sealant and paint manufacturer.

### 3.02 PREPARATION

- A. Protect finished surfaces adjoining by using masking tape or other suitable materials.
- B. Clean and prime joints before starting any caulking or sealing work.

C. Thoroughly clean joints and spaces of mortar and other foreign materials. Cleaning agent shall be Xylol or similar non-contaminating solvent to remove any film from metal surfaces. Masonry or concrete surfaces shall be brushed or air jet cleaned.

D. Joint Requirements

1. All joints and spaces to be sealed in exterior work shall be less than 1/2 inch deep and not less than 1/4 inch wide. If joints in masonry are less than that specified herein, the mortar shall be cut out to the required width and depth. All joints and spaces to receive sealant shall be completely prepared and thoroughly dry before installation of sealant.
  
2. Unless otherwise specified, joints and spaces which are open to a depth of 1/2 inch or greater shall be solidly filled with back-up material to within 1/4 inch of the surface. Back-up material shall be packed tightly and made continuous throughout the length of the joints. Bond breaker shall be applied as required. If joints are less than 1/4 inch deep, the back-up material may be omitted, a bond breaker substituted and the joint completely filled with sealant. The back-up material shall not project beyond the 1/4 inch depth of the open space in any joint. The following width-to-depth ratio table shall be adhered to, unless otherwise recommended by manufacturer.

Joint Width	Sealant Depth	
	Minimum	Maximum
1/4 inch	1/4 inch	1/4 inch
Over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
Over 1/2 inch to 1 inch	1/2 inch	Equal to width
Over 1 inch to 2 inch	1/2 inch	1/2 of width

3.03 APPLICATION

- A. Exercise care before, during, and after installation so as not to damage any material by tearing or puncturing. All finished work shall be approved before covering with any other material or construction.
  
- B. Apply sealant by an approved type of gun except where the use of a gun is not practicable, suitable hand tools shall be used. Avoid applying the compound to any surface outside of the joints or spaces to be sealed. Mask areas where required to prevent overlapping of sealant.
  
- C. All joints shall be waterproof and weathertight.
  
- D. Point sealed joints to make a slightly concave joint, the edges of which are flush with the surrounding surfaces. Exposed joints in the interior side of the door and other frames shall be neatly pointed flush or to match adjacent jointing work.

- E. Adjacent materials which have been soiled shall be cleaned immediately and the work left in neat and clean condition.
- F. Comply with sealant manufacturer's written instructions except where more stringent requirements are shown or specified and except where manufacturer's technical representative directs otherwise.

### 3.04 ADJUSTMENT AND CLEANING

- A. Remove misplaced sealant compounds promptly using methods and materials recommended by the manufacturer, as the work progresses.
- B. Allow sealants to cure and remove protective edging, of doors, louvers, saddles windows etc. as directed by the Engineer.

### 3.05 SCHEDULE

#### Schedule of Sealants

Application	Sealant	Color
Vertical and horizontal expansion and construction joints in concrete structures unless noted otherwise herein or on Drawings.	Type 1	To closely match adjacent surfaces or mortar and as selected by the Owner.
Vertical and horizontal joints bordered on both sides by masonry, precast concrete, natural stone or other porous building material, unless noted otherwise herein or on Drawings.	Type 2	To closely match adjacent surfaces or mortar and as selected by the Owner.
Vertical and horizontal joints bordered on both sides by painted metals, anodized aluminum, mill finished aluminum, PVC, glass or other non-porous building material.	Type 3	To closely match adjacent surfaces and as selected by the Owner.
Sanitary areas, joints in ceramic tile, around plumbing fixtures, countertops, and back splashes. See Note 1.	Type 4	To closely match adjacent surfaces and as selected by the Owner.
Perimeter sealing of doors, windows, louvers, piping, ducts, and electrical conduit. See Note 2.	Type 2 or Type 3	To closely match adjacent surfaces and as selected by the Owner.
Below thresholds.	Type 6	Manufacturer's standard
Submerged in liquids. See Note 4.	Type 1	Manufacturer's standard

<b>Application</b>	<b>Sealant</b>	<b>Color</b>
Submerged in liquids with high concentration of chlorine (> 2 ppm).	Type 7	Manufacturer's standard
Horizontal Joints exposed to vehicular or pedestrian traffic.	Type 8	To closely match adjacent surfaces.
Other joints indicated on the drawings or customarily sealed but not listed.	Type recommended by manufacturer	To closely match adjacent surfaces and as selected by the Owner.

- Note 1. Sealant for Laboratory Countertop shall be as recommended by countertop manufacturer.
- Note 2. Provide UL approved sealants for penetrations thru fire-rated walls and as specified in Section 07270.
- Note 3. Sealants which will come in contact with potable water shall meet the requirements of NSF 61.
- Note 4. Where sealant will be immersed in liquid chemicals verify compatibility prior to installation of sealant.

**-++++END OF SECTION +++++**

# ABANDON WATER METER



<b>SOP Title: Abandon Water Meter</b>		<b>Current Revision Date: 4/30/20</b>
<p><b>Purpose:</b> This SOP describes the procedures to abandon a water meter for residential, commercial, and irrigation customers.</p>		
<p><b>Safety Note:</b> Set up Safety Zone before any fieldwork. Wear PPE, which includes a hard hat, steel-toed shoes, and safety glasses. Refer to PPB 509 Health and Safety.</p>		
<b>Steps</b>	<b>Responsible Person</b>	<b>Remarks</b>
1) Mark pavement with white paint and call GA 811.	Contractor Superintendent	<ul style="list-style-type: none"> <li>• It usually takes 72 hours to get normal locates.</li> <li>• Log Locate Number on Activity Sheet.</li> <li>• Call Dispatch to add Locate Number to Work Order.</li> </ul>
2) Apply for Street Cut permit and Lane Closure Permit, if needed.	Contractor Superintendent	<ul style="list-style-type: none"> <li>• Call Technical Services to get either GDOT Permit or DPW Permit, depending on location</li> <li>• Call Dispatch to add Ticket Number to Work Order.</li> </ul>
3) Schedule work once locate date is established.	Contractor Superintendent	<ul style="list-style-type: none"> <li>• Locate status can be monitored at <a href="http://my.ga811.com/">http://my.ga811.com/</a>.</li> </ul>
4) Set up Safety Zone on the day that work will be completed.	Contractor Crew Supervisor	<ul style="list-style-type: none"> <li>• Call Safety Officer or additional resources if needed.</li> <li>• Refer to Manual of Unified Traffic Control Device (MUTCD): <a href="https://mutcd.fhwa.dot.gov/">https://mutcd.fhwa.dot.gov/</a>.</li> </ul>
5) Excavate down to the water main to locate the corporation	Contractor Crew Supervisor	<ul style="list-style-type: none"> <li>• Once the contractor has found the Corp. he must then take a pipe wrench to cut the valve in the off position.</li> </ul>
6) Detaching the service line from the Corporation	Contractor Crew Supervisor	<ul style="list-style-type: none"> <li>• This will abandon the service line so the line will not be considered active anymore.</li> <li>•</li> </ul>

7) Remove the meter and meter box from the site	Contractor Crew Supervisor	<ul style="list-style-type: none"> <li>The contractor will return the abandoned meter and meter box to the City of Atlanta inspector. The inspector will document and return the assets to the Department of Watershed Warehouse.</li> </ul>
8) Restoration	Contractor Crew Supervisor	<ul style="list-style-type: none"> <li>The contractor will restore the worksite to the City of Atlanta Department of Public Works written standard.</li> </ul>
9) Update Plat Card.	OLIO Tech Services Records Manager	<ul style="list-style-type: none"> <li>Crew Supervisor provides mark-up of existing Plat Card with modifications performed.</li> <li>Area Superintendent reviews Plat Card and submits to Tech Services.</li> </ul>
10) Final Close-out.	City of Atlanta Inspector	<ul style="list-style-type: none"> <li>The City of Atlanta Inspector will update all required documentation</li> <li>All update documentation will be submitted to the proper departments</li> <li>Close work order.</li> </ul>

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

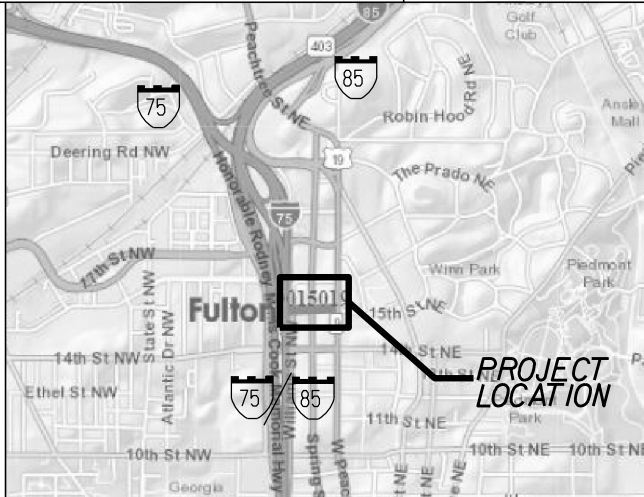
**SPECIAL PROVISION**

**Section 702—Vine, Shrub, and Tree Planting**

---

*Add the following to Subsection 702.2.A:*

4. Ensure that all plants supplied for this project are grown in Georgia. Provide documentation from supplier indicating source of plants.



LOCATION SKETCH N.T.S.

# CITY OF ATLANTA

## PLAN AND PROFILE OF PROPOSED 15TH STREET EXTENSION

### FROM SR 9/WEST PEACHTREE STREET TO CS 673/WILLIAMS STREET FULTON COUNTY

## FEDERAL AID PROJECT



**DESIGN DATA:**  
 TRAFFIC A.D.T.: 9,725 VPD (2023)  
 TRAFFIC A.D.T.: 11,825 VPD (2043)  
 TRAFFIC D.H.V.: 1147 VPH (2043)  
 DIRECTIONAL DIST: 58%  
 % TRUCKS: 3.0%  
 24 HR. TRUCKS %: 6.0%  
 SPEED DESIGN: 25 MPH

FEDERAL ROUTE • N/A  
 STATE ROUTE • N/A  
 P.J.NO. 0015019

PROJECT MIDPOINT  
 STA 14+75.00  
 N 1378178.7838  
 E 2229081.4851

CENTERLINE INTERSECTION  
 STA. 13+40.98 ON 15TH STREET  
 = STA. 201+93.53 ON SPRING STREET  
 N. 1378180.1155  
 E. 2228947.4716

CENTERLINE INTERSECTION  
 STA. 10+00.00 ON 15TH STREET  
 = STA. 101+90.86 ON WILLIAMS STREET  
 N. 1378183.6700  
 E. 2228606.5074

CENTERLINE INTERSECTION  
 STA. 17+95.38 ON 15TH STREET  
 = STA. 302+44.37 ON WEST  
 PEACHTREE STREET  
 N. 1378192.9269  
 E. 2229401.1588

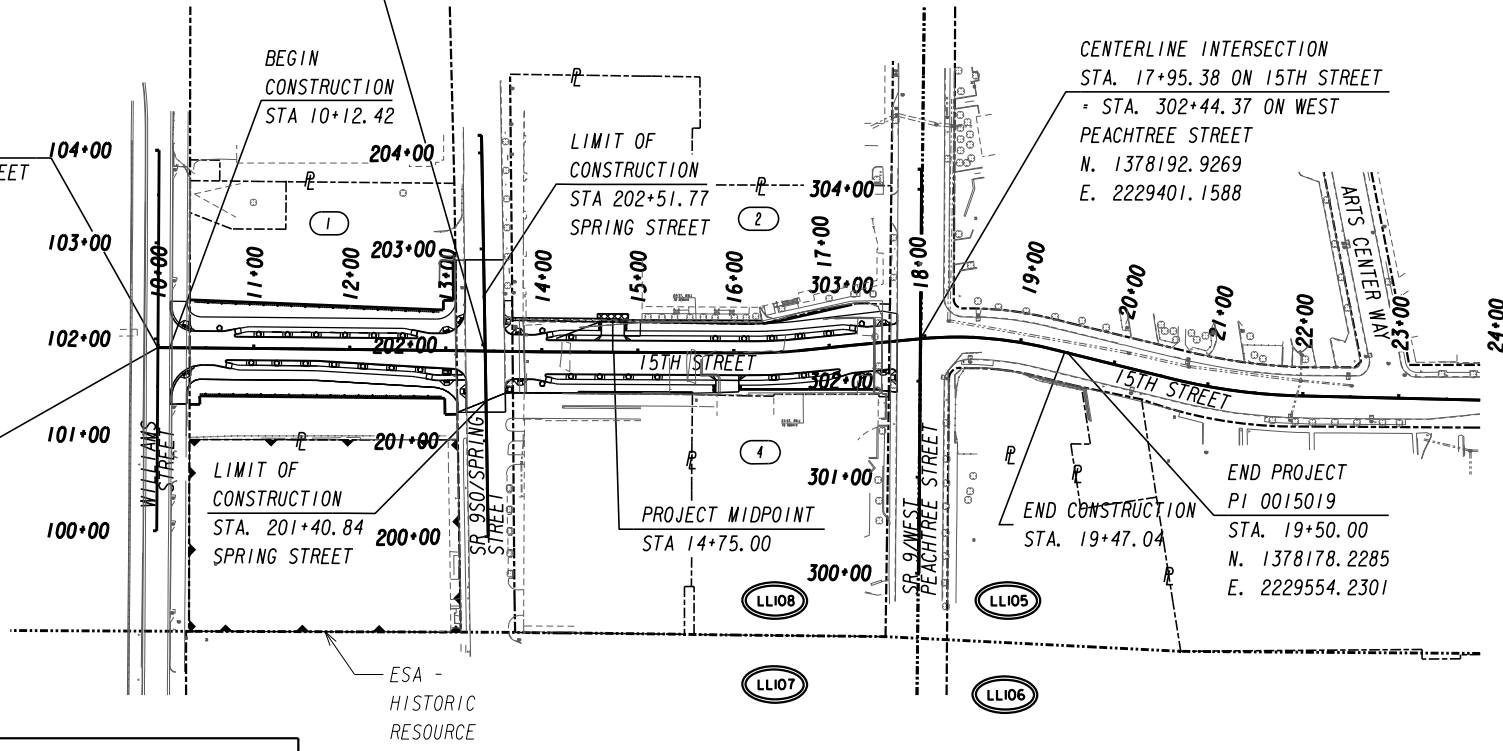


PREPARED BY: *Richard E. Boston*

DESIGNED BY: *Abraham Abousaud* 4/15/2022  
 RECOMMENDED FOR APPROVAL BY: *Abraham Abousaud*  
 CITY DESIGN ENGINEER

LOCATION & DESIGN APPROVAL DATE: APRIL 20, 2020  
 FUNCTIONAL CLASS: URBAN LOCAL ROAD  
 THIS PROJECT IS 100% IN FULTON COUNTY AND IS 100% IN CONG. DIST. NO. 5.  
 PROJECT DESIGNATION: EXEMPT

BEGIN PROJECT  
 PI 0015019  
 STA. 10+00.00  
 N. 1378183.6700  
 E. 2228606.5074

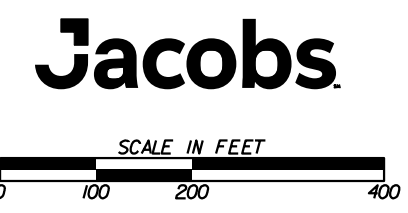


NOTE: ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS, DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO "STATE HIGHWAY DEPARTMENT OF GEORGIA"; "STATE HIGHWAY DEPARTMENT"; "GEORGIA STATE HIGHWAY DEPARTMENT"; "HIGHWAY DEPARTMENT"; OR "DEPARTMENT" WHEN THE CONTEXT THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA, AND SHALL BE DEEMED TO MEAN THE DEPARTMENT OF TRANSPORTATION.

THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA COORDINATE SYSTEM OF 1984 IN AD 1983/94 WEST ZONE, AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

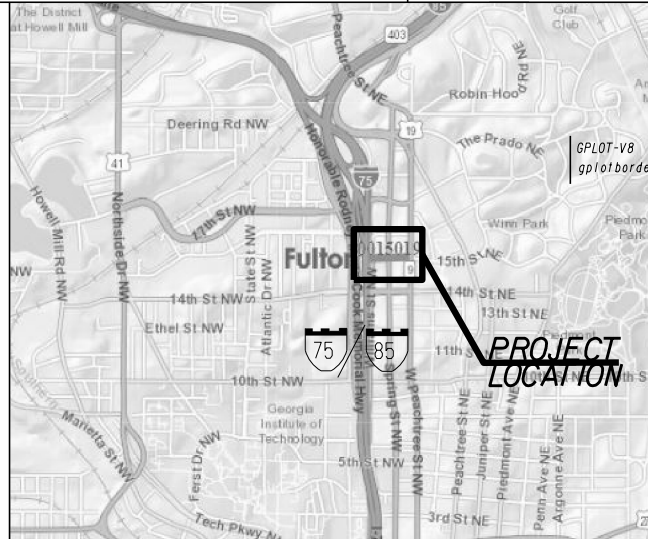
THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTIONS 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS.

LENGTH OF PROJECT PI 0015019	FULTON COUNTY NO. 121
	MILES
NET LENGTH OF ROADWAY	0.180
NET LENGTH OF BRIDGES	0.000
NET LENGTH OF PROJECT	0.180
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	0.180



PLANS COMPLETED	REVISIONS





LOCATION SKETCH N.T.S.

This project has been prepared using the Horizontal Georgia Coordinate System of (NAD) 1/ Zone, and the North American Vertical Datum (NAVD) of .

# CITY OF ATLANTA

## EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN FROM SR 9/WEST PEACHTREE STREET TO CS 673/WILLIAMS STREET

"I certify that this Erosion, Sedimentation and Pollution Control Plan has been prepared in accordance with Part IV, of the General NPDES Permit No. GARI00002."

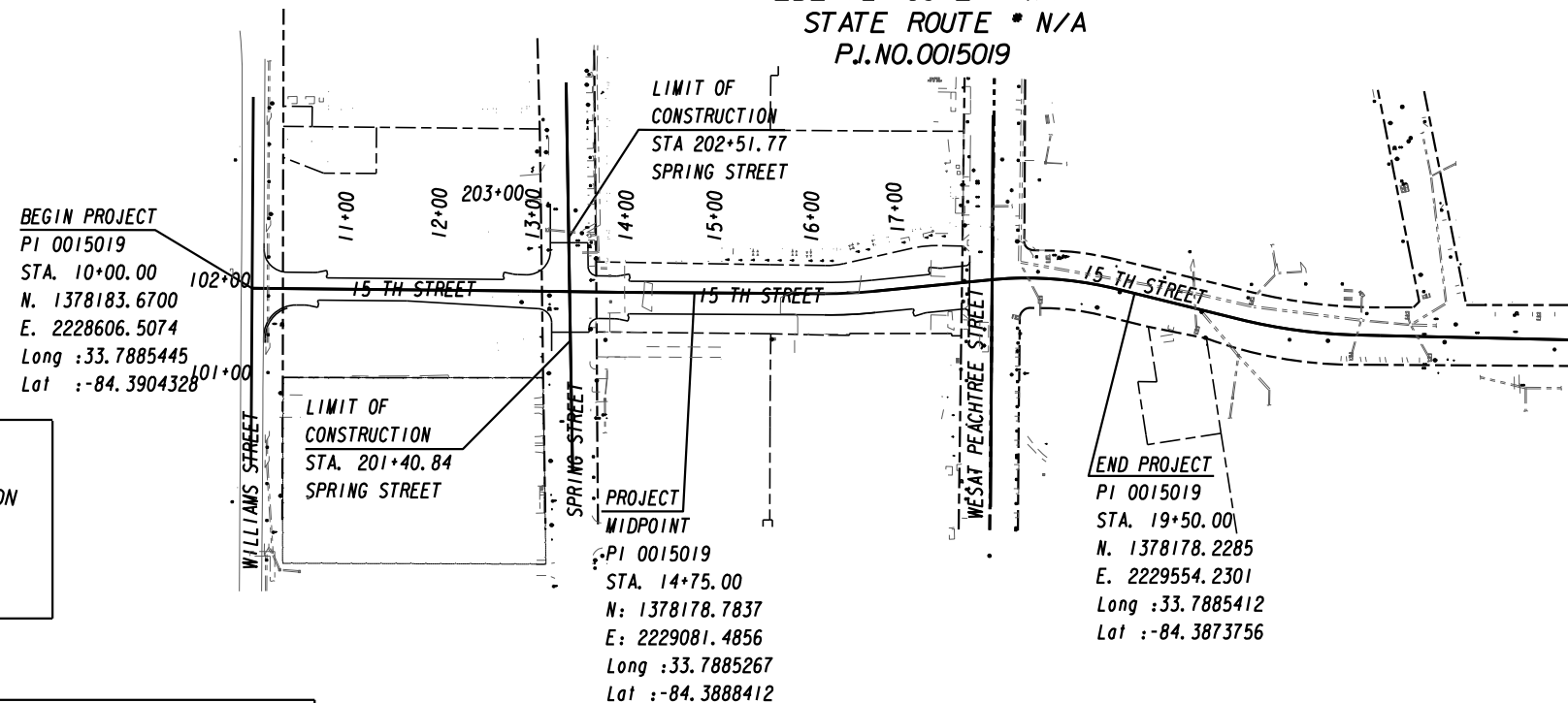
"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document 'Manual for Erosion and Sediment Control in Georgia' (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land disturbing activity was permitted, provides for sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GARI00002."

"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for the monitoring of: (a) all perennial and intermittent streams and other water bodies shown on the USGS topographic map and all other field verified perennial and intermittent streams and other water bodies, or (b) where any such specific identified perennial or intermittent stream and other water body is not proposed to be sampled, I have determined in my professional judgment, utilizing the factors required in the General NPDES Permit No. GARI00002, that the increase in the turbidity of each specific identified sampled receiving water will be representative of the increase in the turbidity of a specific identified un-sampled receiving water."

"I certify under penalty of law that this plan was prepared after a site visit to the location described herein by myself or my authorized agent, under my direct supervision."

### FEDERAL AID PROJECT

FEDERAL ROUTE \* N/A  
STATE ROUTE \* N/A  
P.J. NO. 0015019



#### BEGIN-POINT COORDINATES

Longitude: 33.788533

Latitude: -84.390433

#### MID-POINT COORDINATES

Longitude: 33.7885267

Latitude: -84.3888

#### END-POINT COORDINATES

Longitude: 33.7885412

Latitude: -84.3873756

#### PRIMARY PERMITTEE

GEORGIA DEPARTMENT OF TRANSPORTATION  
600 West Peachtree Street North West  
Atlanta, Georgia 30308  
Phone: (404) 631-1990  
Email: [espcp@dot.ga.gov](mailto:espcp@dot.ga.gov)



#### 24 HOUR CONTACT:

Name \_\_\_\_\_

Street Address \_\_\_\_\_

City, State Zip \_\_\_\_\_

Phone Number \_\_\_\_\_

Email Address \_\_\_\_\_

Contractor shall complete the information in this box.

03-29-2021

Date:

RICHARD BOSTON, PE

000009077

GSWCC LEVEL II Certification Number

PLANS COMPLETED 03-29-2021

#### REVISIONS

DATE	ENTITY REQUESTING REVISION(S)	DRAWING NUMBER(S)	SIGNATURE	GSWCC LEVEL II CERT.*
07-27-2021	GEORGIA EPD	51-0003, 53-0002, 54-0002		000009077
09-13-2021	GEORGIA EPD	54-0001, 54-0002		000009077
10-01-2021	GEORGIA EPD	54-0002, 54-0004, 54-0006, 54-0006A, 54-0008, 54-0008A		000009077
- -				
- -				
- -				
- -				

**ENVIRONMENTAL COMMITMENTS TABLE**

PI#: 0015019, County: Fulton

Date Updated: 9/17/2020 | Stage: Reevaluation for Let Certification  
Transmittal Date for Plans Reviewed by OES (if applicable): 9/16/2019

**Review**  
If no commitments, NEPA may approve for all.

The GDOT project manager (PM) asserts that these commitments are feasible.  
GDOT PM: Eka Okonmkpaeto  
Signature/Date: Ehakaeta Oct 30, 2020

The engineer of record (EOR) asserts that plans incorporate or will incorporate commitments if applicable.  
EOR: Bryan Ricks, PE  
Signature/Date: [Signature] 10/30/2020

Air/Noise: AT 9/30/2020 Arch: RP 9/30/2020  
Eco: AW 10/12/2020 Hist: CC 9/30/2020  
NEPA: AB 10/30/2020

**A. Resources to be Delineated on the Plans and/or Listed in the Environmental Resource Impact Table (ERIT)**

Resource Name	Permitted Construction Activity	Refer to	Name and Date of Report or Transmittal	Correctly Shown?		
				Plan Sheet	ERIT	
A-1	Mid-Century Offices	No Activity	NA	History Assessment of Effects (AOE) – August 29, 2019	Yes	Yes

**B. Special Provisions (Attach all special provisions with transmittal letters to the commitments table, if available)**

Special Provision	Purpose	Est. Cost	SP's Latest Date	
B-1	SP 150.6	Traffic Control	Negligible	7/13/20

**C. ERIT Comments and Design Features (Description: For ERIT Comments, provide exact wording for the comments section of the ERIT)**

ERIT Comment or Design Feature	Description	Est. Cost	Correctly Shown?
None			

**D. Necessary Permits, Buffer Variances and Mitigation Credits**

Permit, Variance, etc.	Add'l Info (permit expiration date, number of credits needed, etc...)	Est. Cost	Acquired?	
D-1	Notice of Intent (NOI) for NPDES	The Construction Contractor will submit a NOI to NPDES General Permit following award of the contract but prior to construction activities.	NA	Will be acquired following let.

**E. Other Commitments or Requirements (Status: Pre- and Post – Complete or Incomplete; During – Signature Req'd)**

Pre-, During, or Post	Commitment	Responsible party	Est. Cost	Status	
E-1	Pre-	A Phase II Evaluation and Report will be completed for Haz Mat/UST evaluation	Midtown Alliance/GDOT	NA	Complete (6/5/20)
E-2	During	Noise and vibration will be measured during construction with construction activities scheduled to avoid noise disruption during evening hours.	Midtown Alliance/GDOT	NA	Incomplete-Signature Required

Total Estimated Cost

If Project is Complete or Under Construction, Area or Construction Engineer affirms that all Special Provisions, Plan Notes and During Construction Commitments were or are being adhered to during the project's construction.

Please Print Name and Title: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Please provide an explanation if unable to sign.

# SOIL SURVEY REPORT

## 15<sup>th</sup> Street Extension Project Atlanta, Georgia



PREPARED BY

**2MNEXT**®

FOR

**Jacobs Engineering Group, Inc.**

10 Tenth Street, Suite 1400, Atlanta, GA 30309

**Original Date: June 7, 2019**

**Revision No. 1 Date: September 5, 2019**

**Revision No. 2 Date: September 10, 2019**

**GDOT P.I. No. 0015019**

**Soil Survey Summary**  
**15<sup>th</sup> Street Extension Project, City of Atlanta**  
**Original Date: June 7, 2019**  
**Revision No. 1 Date: September 5, 2019**  
**Revision No. 2 Date: September 10, 2019**  
**GDOT P.I. No. 0015019**  
**Revision No. 2**

- 1. Location / Description** This project is for the construction of 15<sup>th</sup> Street extension between West Peachtree St. N.W and Williams St. N.W. The project begins at Station 10+12.58 and continues east to Station 19+50.00. The project lies within the city limits of Atlanta in Fulton County. Boring locations are shown on Figure 1-2 and subsurface conditions are depicted on Sections 1-1 and 2-2 (Figures 2-1 and 2-2).
- 2. Geology** This project will be geologically sited in the Wahoo Creek Formation of the Georgia Piedmont Region.
- 3. Rock** Rock in the form of boulders and/or weathered rock layers, which may be removed by heavy equipment and/ or light blasting, were encountered on this project. We estimate that this material will be encountered at the following locations:

<u>Station to Station</u>	<u>Location</u>
11+00 to 12+80 LT/RT	Elev. 890' to Elev. 900'

Hard rock, noted as auger refusal and requiring blasting for removal, was encountered above proposed grade at the following locations:

<u>Station to Station</u>	<u>Location</u>
10+20 to 12+80 LT/RT	Elev. 903' and below

- 4. Removal** No materials requiring removal as encountered on this project.
- 5. Waste** None of the materials found on this project will require wasting.
- 6. Subgrade Materials** No additional subgrade material will be required for this project.
- 7. Pavement Design Values** We recommend the following values for use in the pavement design calculations for this project:

**Soil Support Value = 2.0**

Graded aggregate base is the only base material recommended for use on this project.

- 8. Ditch Lining** We recommend the following values for use in the ditch lining calculations for this project:

**Plasticity Index, PI** = NP  
**D75 (mm)** = 3.5  
**Unified Soils Classification System (USCS)** = SM

Sample 1962 from boring B-7 at station 12+70, 30' RT was used for ditch lining evaluation.

- 9. Slopes** Maximum 2:1 slopes in soil will be appropriate for this project. Maximum 0.5:1 slopes will be appropriate for the rock cut sections of this project in accordance with the attached detail at the following locations:

<u>Station to Station</u>	<u>Location</u>
10+40 to 13+00	Lt., Rt.

**10. Groundwater**

Groundwater was encountered below grade at some locations of subsurface borings but is not expected to cause problems during construction.

- 11. Shrinkage** We recommend an average shrinkage factor of 20 % for use in the earthwork calculations for this project.

- 12. Rock Swell** We recommend the use of an average swell factor of 30% for material shown as hard rock.

- 13. Culverts** We recommend that a 12-inch blanket of Type II Foundation Backfill material be placed under the barrel of all culverts and 48-inch diameter and larger cross-drains on this project.

- 14. Corrosion** Reference should be made to the attached "Pipe Culvert Material Alternates" chart for materials allowable based on Historical pH and Resistivity Values.

**15. Bench Detail** Where new fills are to be placed on existing slopes steeper than 3:1, the existing slope should be benched in accordance with the attached detail.

**16. Serrated Slopes** Serrated slopes will not be required on this project.

**17. Special Problems** Several buildings are located within 75 feet of the construction limits of this project. Vibration monitoring will be required due to vibrations from construction activities which may cause some concern with property owners. All work shall be performed in accordance with Special Provision 154: Vibration Monitoring.

Debris in the form of construction waste will need to be removed under clearing and grubbing. These materials were encountered at the following locations:

<u>Station to Station</u>	<u>Location</u>
10+40 to 13+00	Lt., Rt.


The existing conditions included asphalt covered surface, concrete slabs, some existing and possibly abandoned utilities, retaining walls, etc. Some construction debris including pieces of brick, pipe and concrete were noted at the surface between stations 10+70 and 12+00 during our field reconnaissance.

Such material shall be wasted outside the construction limits of the project.

**Prepared By:** Ali Razavi, PE

**Approved By Name :** Daimia Gunning, PE

**Approved By Signature:**

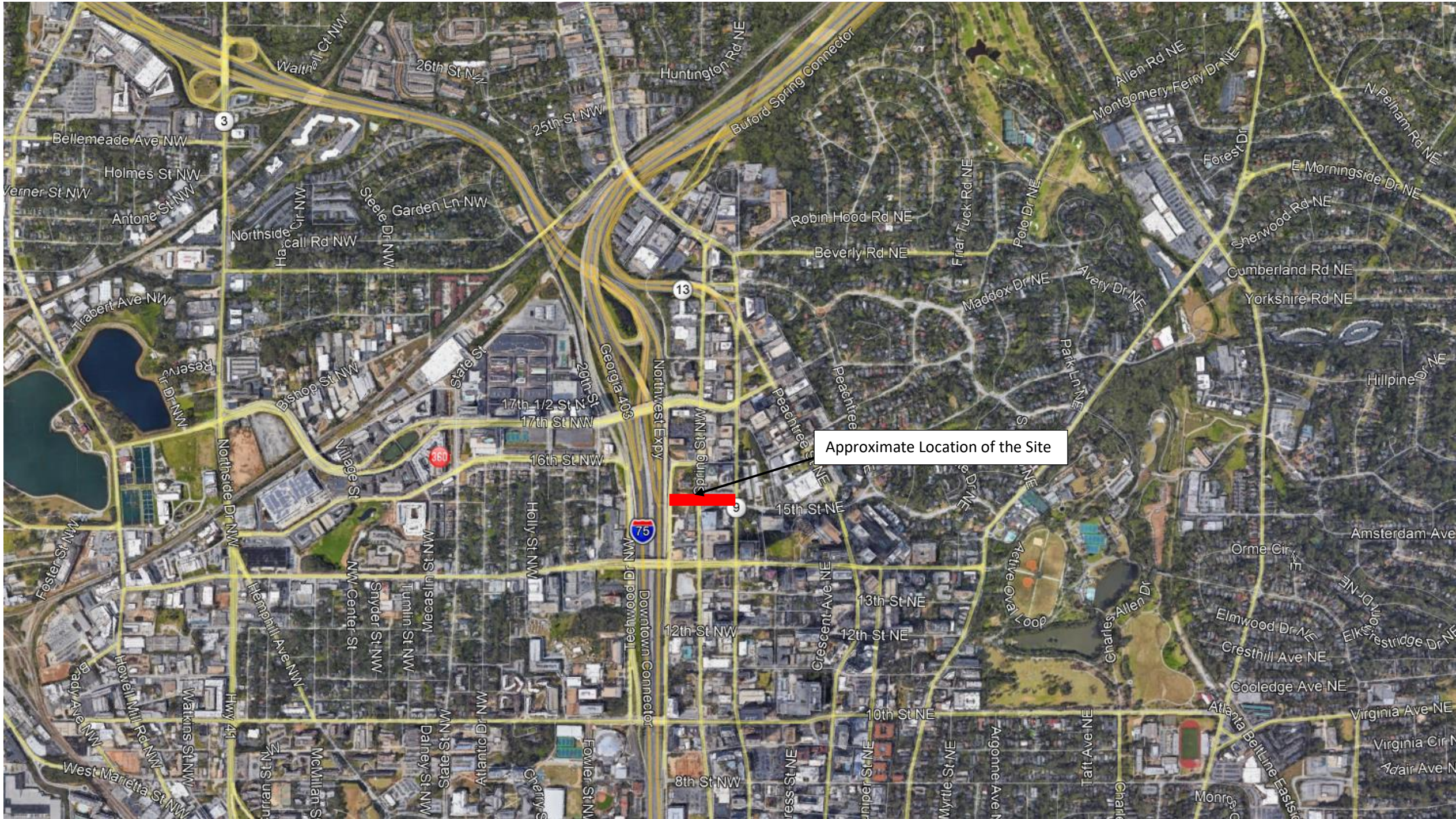


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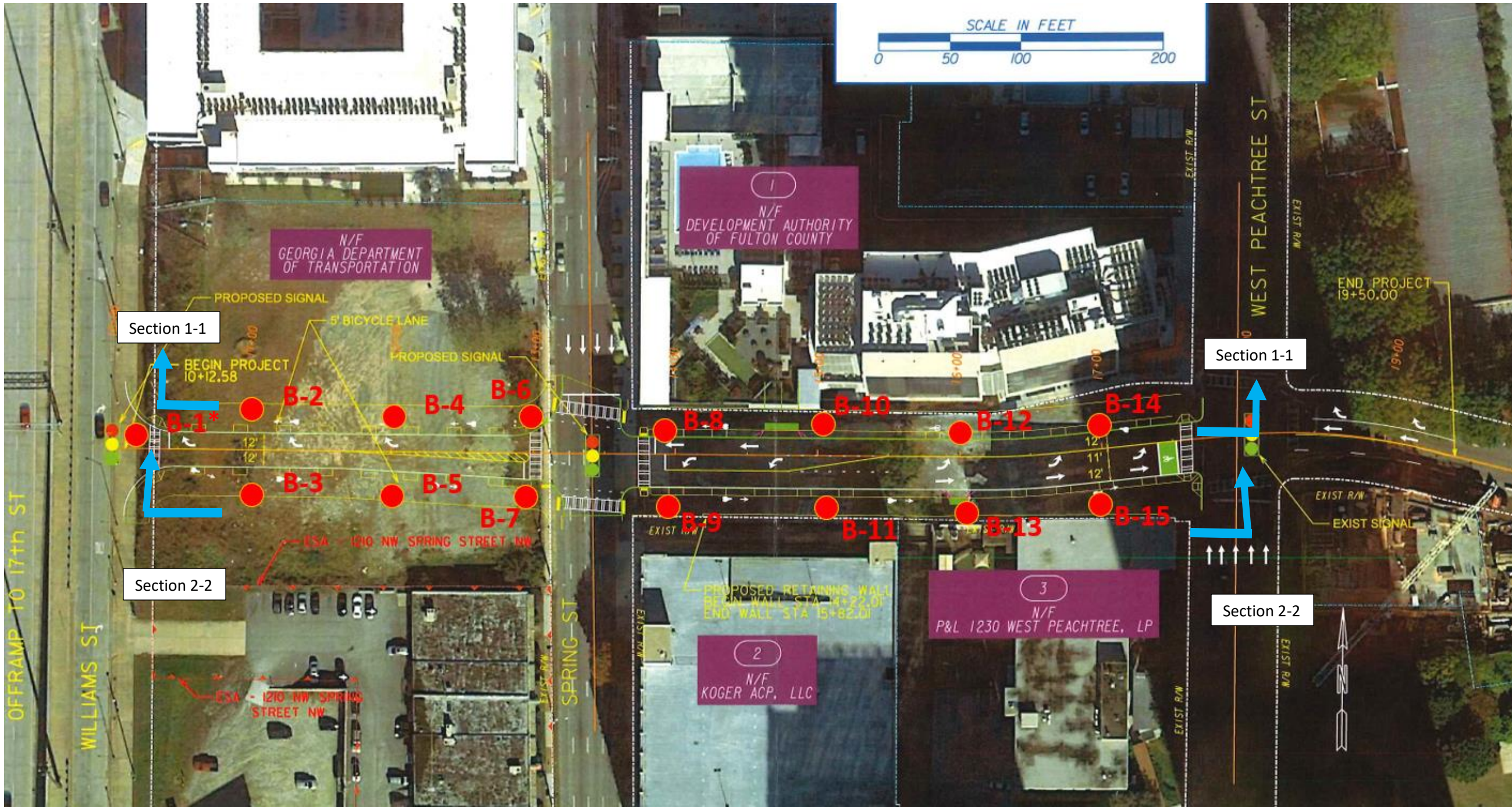
## **APPENDIX**

Figure 1-1: Site Location Plan  
Figure 1-2: Boring Location Plan  
Figure 2-1: Subsurface Profiles  
Figure 3: Rock Cut Detail  
Figure 4: Benching Detail  
Boring Logs (14)  
Rock Core Picture Log  
Laboratory Testing Report  
Laboratory Data  
Section 154 — Construction  
Vibration Monitoring  
Pipe Culvert Material Alternates



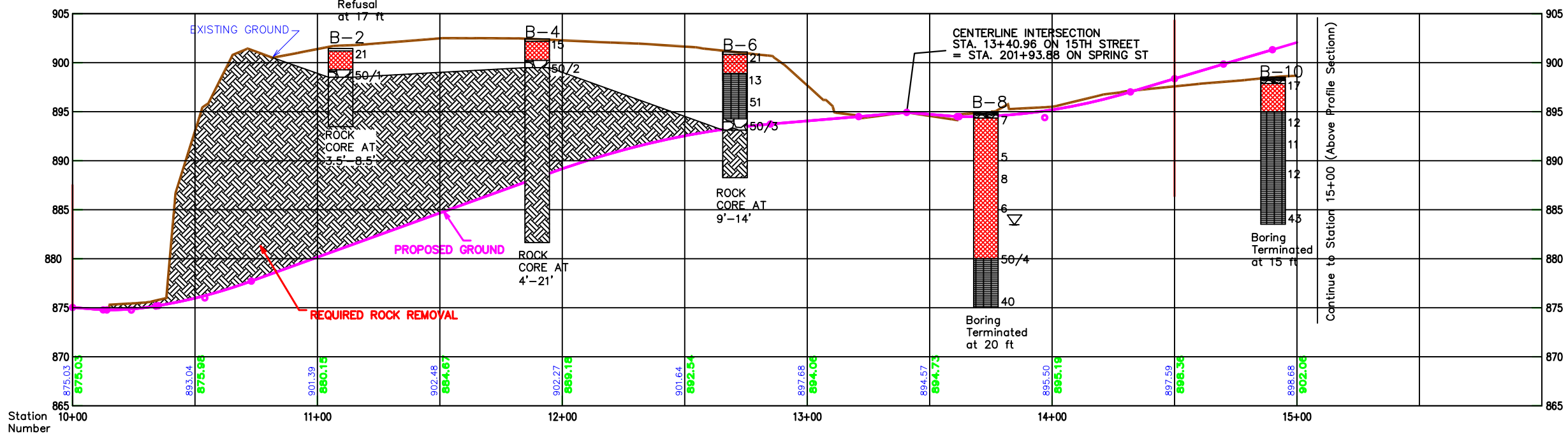
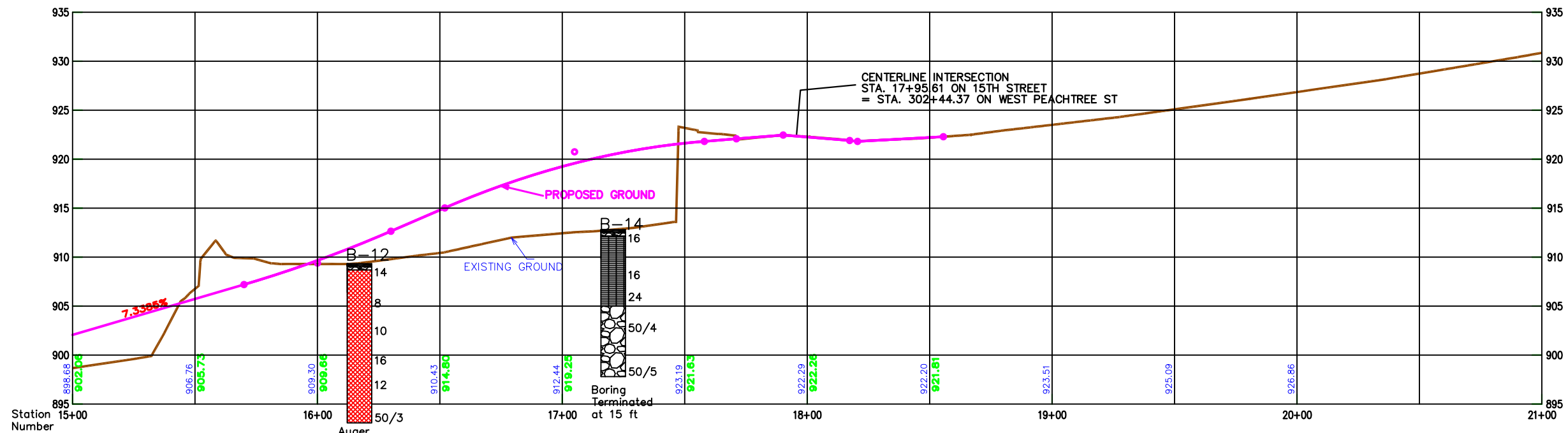
<p>FIGURE 1-1 Site Location Plan</p>	<p>15th Street Extension Soil Survey Jacobs</p>	<p>GDOT P.I. No. 0015019</p>	<p>Not to Scale</p>	<p>Reference: Google Maps</p>
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\*Boring #B-1 was not drilled

<p>FIGURE 1-2 Boring Location Plan</p>	<p>15th Street Extension Soil Survey Jacobs, GDOT P.I. No. 0015019</p>	<p>Not to Scale</p>	<p>Reference: Jacobs</p>	<p>Legend: Approximate Location of Borings: B-# ●</p>
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### LEGEND

- FILL
- ROCK
- SM
- SC
- PWR
- Pavement

▽ Water Level at the time of boring

NTS

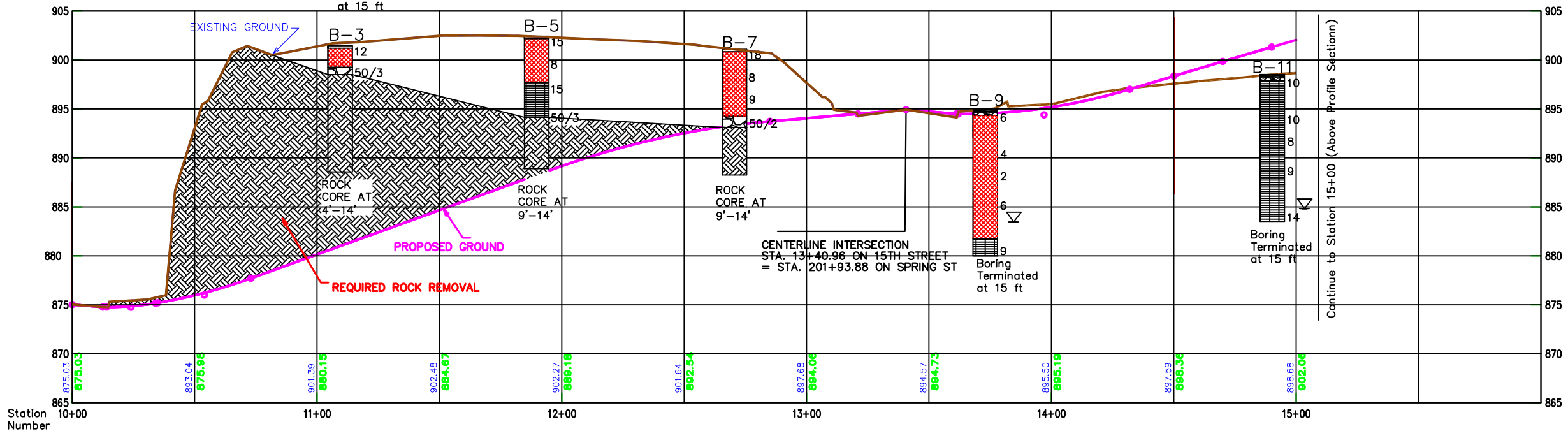
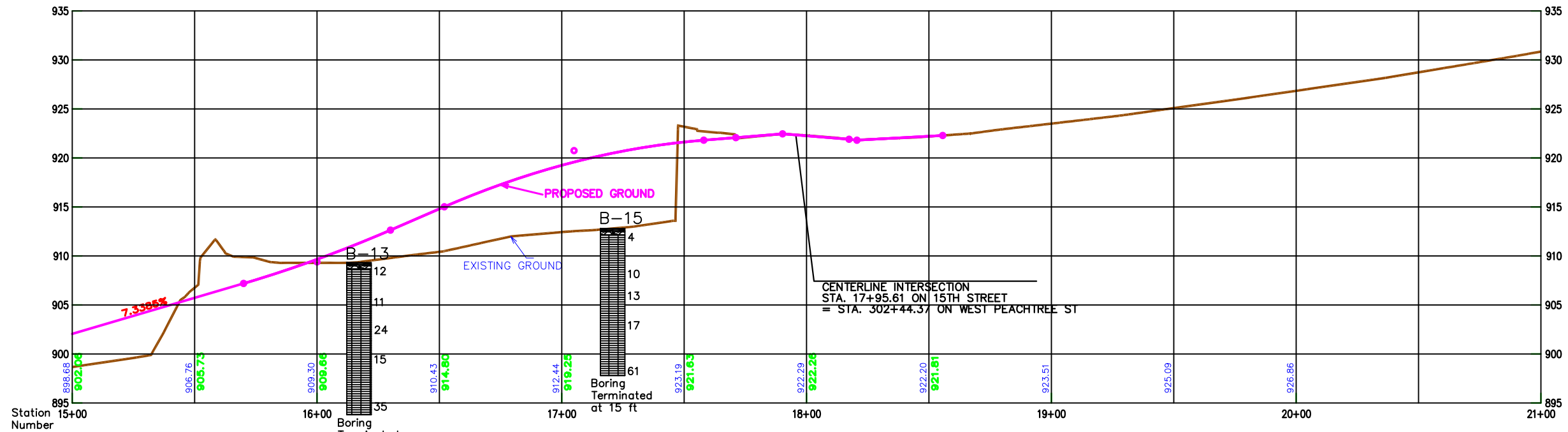
**2MNEXT**<sup>®</sup>  
PROJECT NO. 19G3005

**JACOBS**

15TH. STREET EXTENSION  
ATLANTA, GA  
GEOTECHNICAL SUBSURFACE PROFILE – SECTION 1-1  
PREPARED FOR: JACOBS, GDOT P.I. No. 0015019

PREPARED BY: AR  
CHECKED BY: RM

DATE: 5/29/2019  
FIGURE 2-1



### LEGEND

- FILL
- ROCK
- SM
- SC
- PWR
- Pavement

Water Level at the time of boring

NTS

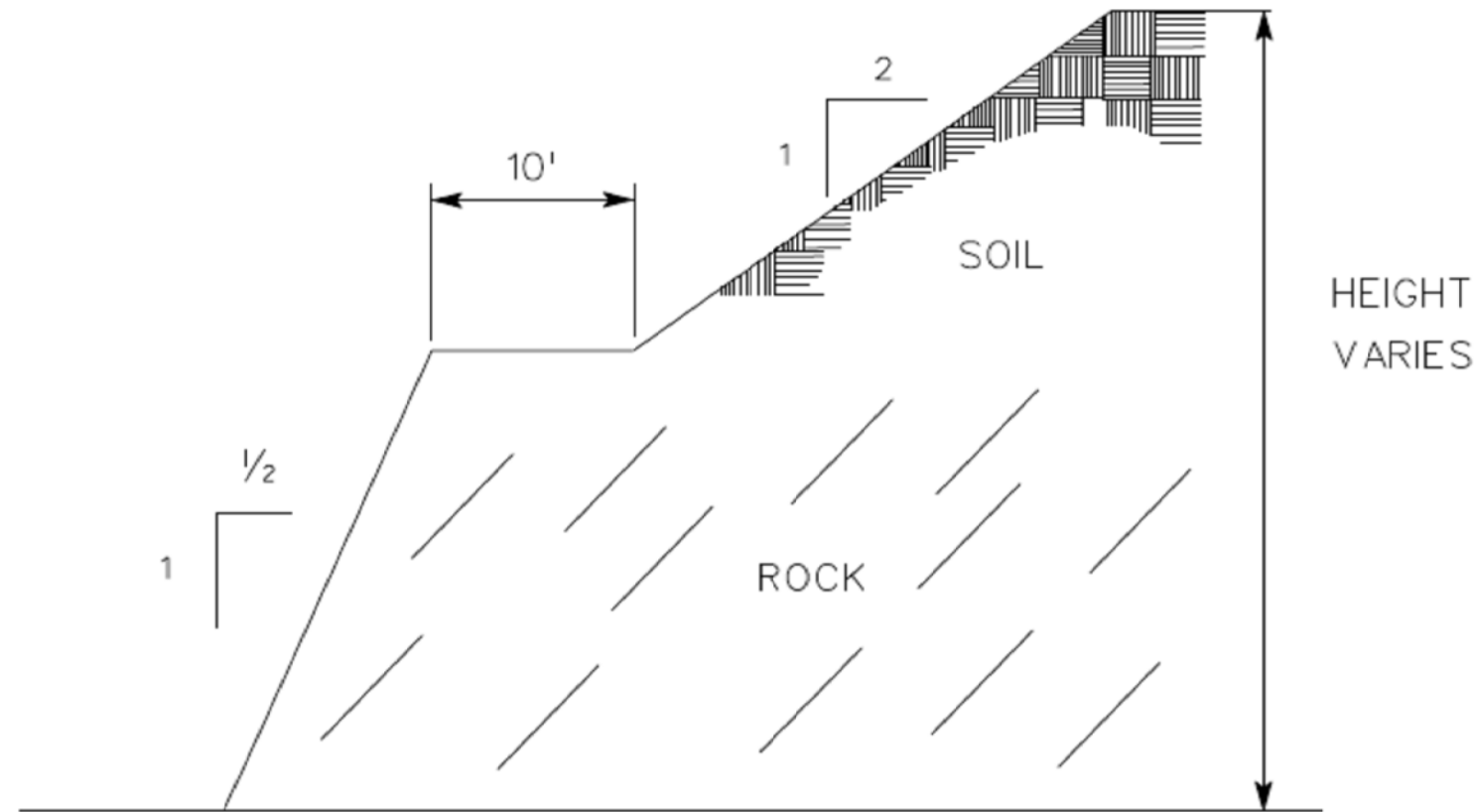
**2MNEXT**<sup>®</sup>  
PROJECT NO. 19G3005

**JACOBS**

15TH. STREET EXTENSION  
ATLANTA, GA  
GEOTECHNICAL SUBSURFACE PROFILE – SECTION 2-2  
PREPARED FOR: JACOBS, GDOT P.I. No. 0015019

PREPARED BY: AR  
CHECKED BY: RM

DATE: 5/29/2019  
FIGURE 2-2



APPLIES TO STATION TO STATION	LOCATION	RANGE OF ROCK DEPTHS FROM EXISTING TOP OF GROUND ELEVATION.

**DETAIL FOR ROCK CUT**

NO SCALE

NTS



PROJECT NO. 19G3005



15TH. STREET EXTENSION  
ATLANTA, GA

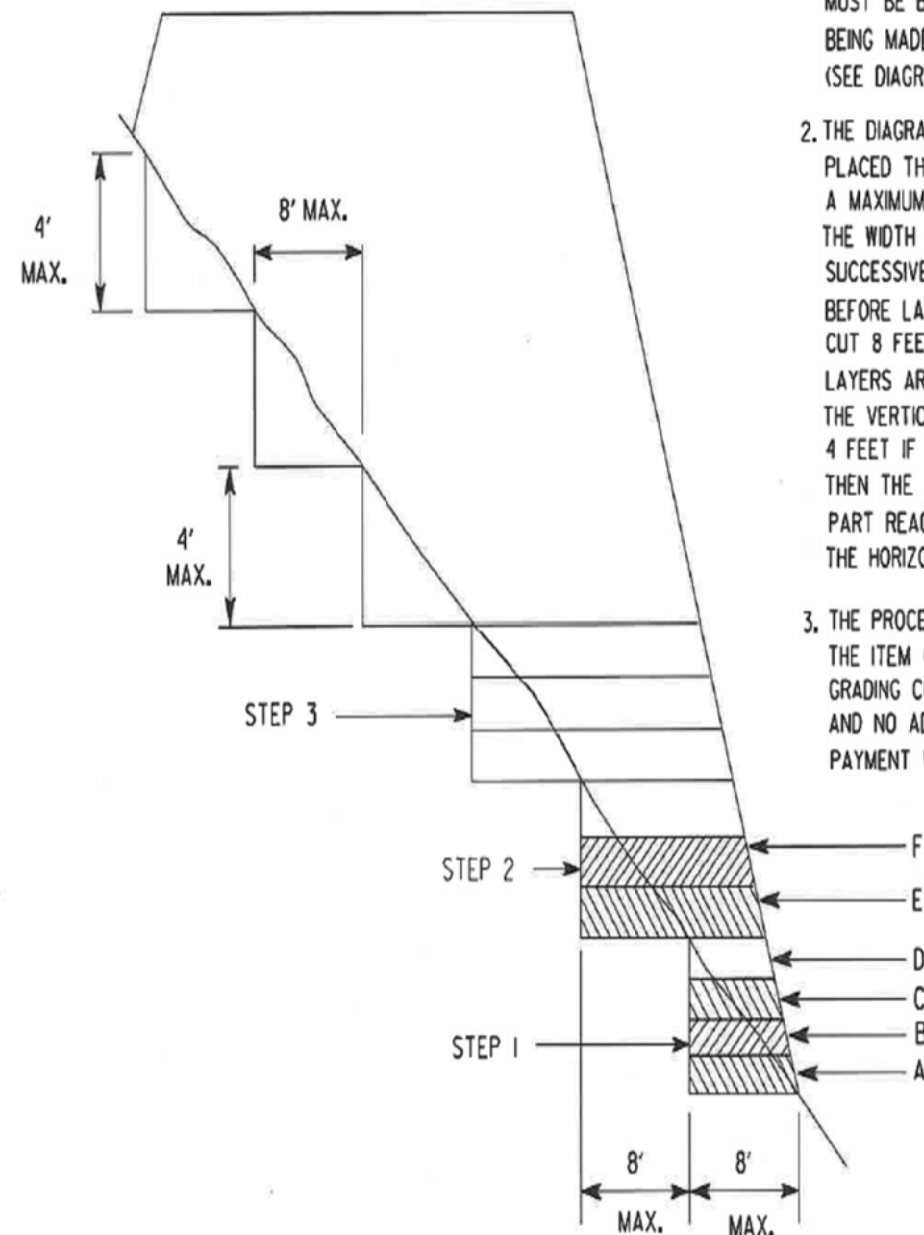
GEOTECHNICAL SUBSURFACE PROFILE – DETAIL FOR ROCK CUT  
PREPARED FOR: JACOBS, , GDOT P.I. No. 0015019

PREPARED BY: AR

DATE: 5/29/2019

CHECKED BY: RM

FIGURE 3



1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING MADE.  
(SEE DIAGRAM AT LEFT.)
2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED THE FIRST STEP (1) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET (ABOUT  $\frac{3}{4}$  THE WIDTH OF THE TYPICAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED BEFORE LAYER "E" IS PLACED, THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF A 8 FEET HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING THE HORIZONTAL DISTANCE TO VARY.
3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW OR GRADING COMPLETE IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.

NTS

**2MNEXT**<sup>®</sup>

PROJECT NO. 19G3005

**JACOBS**

15TH. STREET EXTENSION  
ATLANTA, GA

GEOTECHNICAL SUBSURFACE PROFILE – BENCHING DETAIL

PREPARED FOR: JACOBS, GDOT P.I. No. 0015019

PREPARED BY: AR

DATE: 5/29/2019

CHECKED BY: RM

FIGURE 4



<b>CLIENT</b> <u>Jacobs</u>	<b>PROJECT NAME</b> <u>15th Street Extension Soil Survey</u>
<b>PROJECT NUMBER</b> <u>GDOT P.I. No. 0015019</u>	<b>PROJECT LOCATION</b> <u>Atlanta, GA</u>
<b>DATE STARTED</b> <u>5/15/19</u> <b>COMPLETED</b> <u>5/16/19</u>	<b>GROUND ELEVATION</b> <u>902 ft</u> <b>HOLE SIZE</b> <u>6 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Betts Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger (Auto Hammer)</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>AR</u> <b>CHECKED BY</b> <u>RM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b> <u>All Elevations are Approximate</u>	<b>AFTER DRILLING</b> <u>---</u>

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲
									20   40   60   80 PL   MC   LL 20   40   60   80 □ FINES CONTENT (%) □ 20   40   60   80
0									
-900		[Red cross-hatch pattern]	(SM) (FILL) SILTY SAND, reddish brown, moist, medium dense	SPT 1		3-8-13 (21)			▲
		[White box]	(SM) (PWR) PARTIALLY WEATHERED ROCK sampled as SILTY SAND, tan and white, moist, very dense	SPT 2		26-50/1"			▲
-895	5	[Diagonal hatch pattern]	REC = %100 RQD = %88.3	RC	100 (88)				▲

Refusal at 3.5 feet.

Boring Terminated at 8.5 feet.

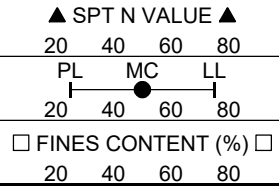
GEOTECH BH PLOTS - GINT STD US LAB.GDT - 6/7/19 11:01 - C:\USERS\RAZAVI\DOCUMENTS\15TH STREET\15TH STREET.GPJ



<b>CLIENT</b> Jacobs	<b>PROJECT NAME</b> 15th Street Extension Soil Survey
<b>PROJECT NUMBER</b> GDOT P.I. No. 0015019	<b>PROJECT LOCATION</b> Atlanta, GA
<b>DATE STARTED</b> 5/15/19 <b>COMPLETED</b> 5/16/19	<b>GROUND ELEVATION</b> 902 ft <b>HOLE SIZE</b> 6 inches
<b>DRILLING CONTRACTOR</b> Betts Environmental	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> Hollow Stem Auger (Auto Hammer)	<b>AT TIME OF DRILLING</b> ---
<b>LOGGED BY</b> AR <b>CHECKED BY</b> RM	<b>AT END OF DRILLING</b> ---
<b>NOTES</b> All Elevations are Approximate	<b>AFTER DRILLING</b> ---

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
	0		4" Topsoil									
		(SM) (FILL)	SILTY SAND, reddish brown, moist, medium dense	SPT 1		6-7-5 (12)						
		(SM) (PWR)	PARTIALLY WEATHERED ROCK sampled as SILTY SAND, tan and white, moist, very dense	SPT 2		50/3"						
	5		REC = %83.3 RQD = %46.7	RC		83 (47)						
	10		REC = %93.3 RQD = %63.3	RC		93 (63)						

Refusal at 4 feet.  
Boring Terminated at 14 feet.



GEOTECH BH PLOTS - GINT STD US LAB.GDT - 6/7/19 11:01 - C:\USERS\RAZAVI\DOCUMENTS\15TH STREET\15TH STREET.GPJ

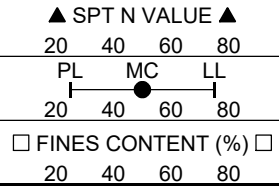


**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/16/19 **COMPLETED** 5/17/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 903 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
0			4" Topsoil									
			(SM) (FILL) SILTY SAND, reddish brown, moist, medium dense	SPT 1		11-9-6 (15)						
900			(SM) (PWR) PARTIALLY WEATHERED ROCK sampled as SILTY SAND, tan and white, moist, very dense	SPT 2		26-50/2"						
	5		REC = %93.3 RQD = %50.0	RC	93 (50)							
	10		REC = %100 RQD = %73.3	RC	100 (73)							
890												
	15		REC = %100 RQD = %66.7	RC	100 (67)							
885												
	20											

Refusal at 4 feet.  
 Boring Terminated at 21 feet.



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**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/20/19      **COMPLETED** 5/20/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR      **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 903 ft      **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
0	0		4" Topsoil									
			(SM) (FILL) SILTY SAND, reddish brown, moist, loose to medium dense	SPT 1		10-7-8 (15)						
900	5			SPT 2		5-4-4 (8)						
			(SM) (RESIDUAL) SILTY SAND, tannish brown, moist, medium dense	SPT 3		4-5-10 (15)						
895	10			SPT 4		50/3"						
			REC = %100 RQD = %83.3	RC	100 (83)							

Refusal at 9 feet.

Boring Terminated at 14 feet.

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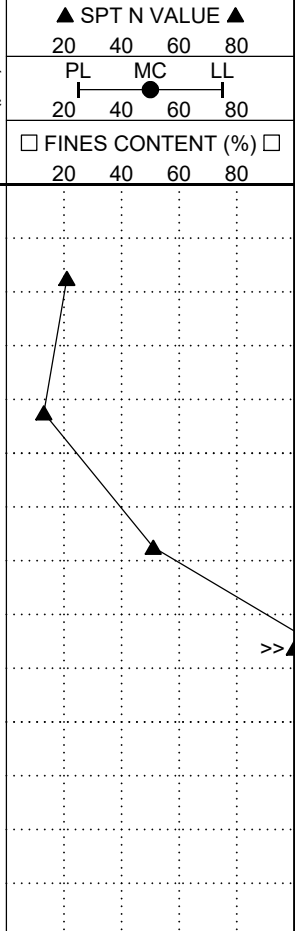
CLIENT Jacobs  
 PROJECT NUMBER GDOT P.I. No. 0015019  
 DATE STARTED 5/20/19 COMPLETED 5/20/19  
 DRILLING CONTRACTOR Betts Environmental  
 DRILLING METHOD Hollow Stem Auger (Auto Hammer)  
 LOGGED BY AR CHECKED BY RM  
 NOTES All Elevations are Approximate

PROJECT NAME 15th Street Extension Soil Survey  
 PROJECT LOCATION Atlanta, GA  
 GROUND ELEVATION 901 ft HOLE SIZE 6 inches  
 GROUND WATER LEVELS:  
 AT TIME OF DRILLING ---  
 AT END OF DRILLING ---  
 AFTER DRILLING ---

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
900	0		4" Topsoil									
900			(SM) (FILL) SILTY SAND, reddish brown, moist, medium dense	SPT 1		5-9-12 (21)						
895	5		(SM) (RESIDUAL) SILTY SAND, tannish brown, moist, medium dense to very dense	SPT 2		6-6-7 (13)						
895			(SM) (PWR) PARTIALLY WEATHERED ROCK sampled as SILTY SAND, tan and white, moist, very dense	SPT 3		22-28-23 (51)						
890	10		REC = %60 RQD = %20	SPT 4		50/3"						
890				RC	60 (20)							

Refusal at 9 feet.

Boring Terminated at 14 feet.



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**CLIENT** Jacobs **PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT NUMBER** GDOT P.I. No. 0015019 **PROJECT LOCATION** Atlanta, GA  
**DATE STARTED** 5/21/19 **COMPLETED** 5/24/19 **GROUND ELEVATION** 901 ft **HOLE SIZE** 6 inches  
**DRILLING CONTRACTOR** Betts Environmental **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer) **AT TIME OF DRILLING** ---  
**LOGGED BY** AR **CHECKED BY** RM **AT END OF DRILLING** ---  
**NOTES** All Elevations are Approximate **AFTER DRILLING** ---

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
900	0		4" Topsoil (SM) (FILL) SILTY SAND, reddish brown, moist, loose to medium dense									
895	5											
890	10		(SM) (PWR) PARTIALLY WEATHERED ROCK sampled as SILTY SAND, tan and white, moist, very dense  REC = %100 RQD = %90									

Refusal at 9 feet.  
Boring Terminated at 14 feet.

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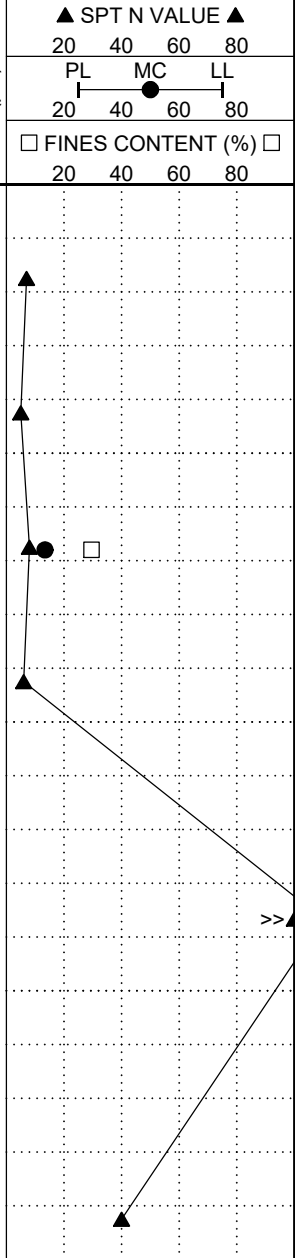
**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/17/19 **COMPLETED** 5/17/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 895 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
▽ AT TIME OF DRILLING 12. ft / Elev 883 ft  
AT END OF DRILLING ---  
AFTER DRILLING --- Caved in at 13 ft

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ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
895	0		3" Asphalt 8" GAB									
			(SM) (FILL) SILTY SAND, contains rock fragments, reddish brown, moist, loose	SPT 1		3-3-4 (7)						
	5			SPT 2		2-2-3 (5)						
				SPT 3		3-3-5 (8)						
	10			SPT 4		3-3-3 (6)						
			(SM) (POSSIBLE FILL) Rock Fragments									
	15			SPT 5		50/4"						
			(SM) (Residual) SILTY SAND, tannish brown, moist to wet, dense									
	20			SPT 6		14-21-19 (40)						

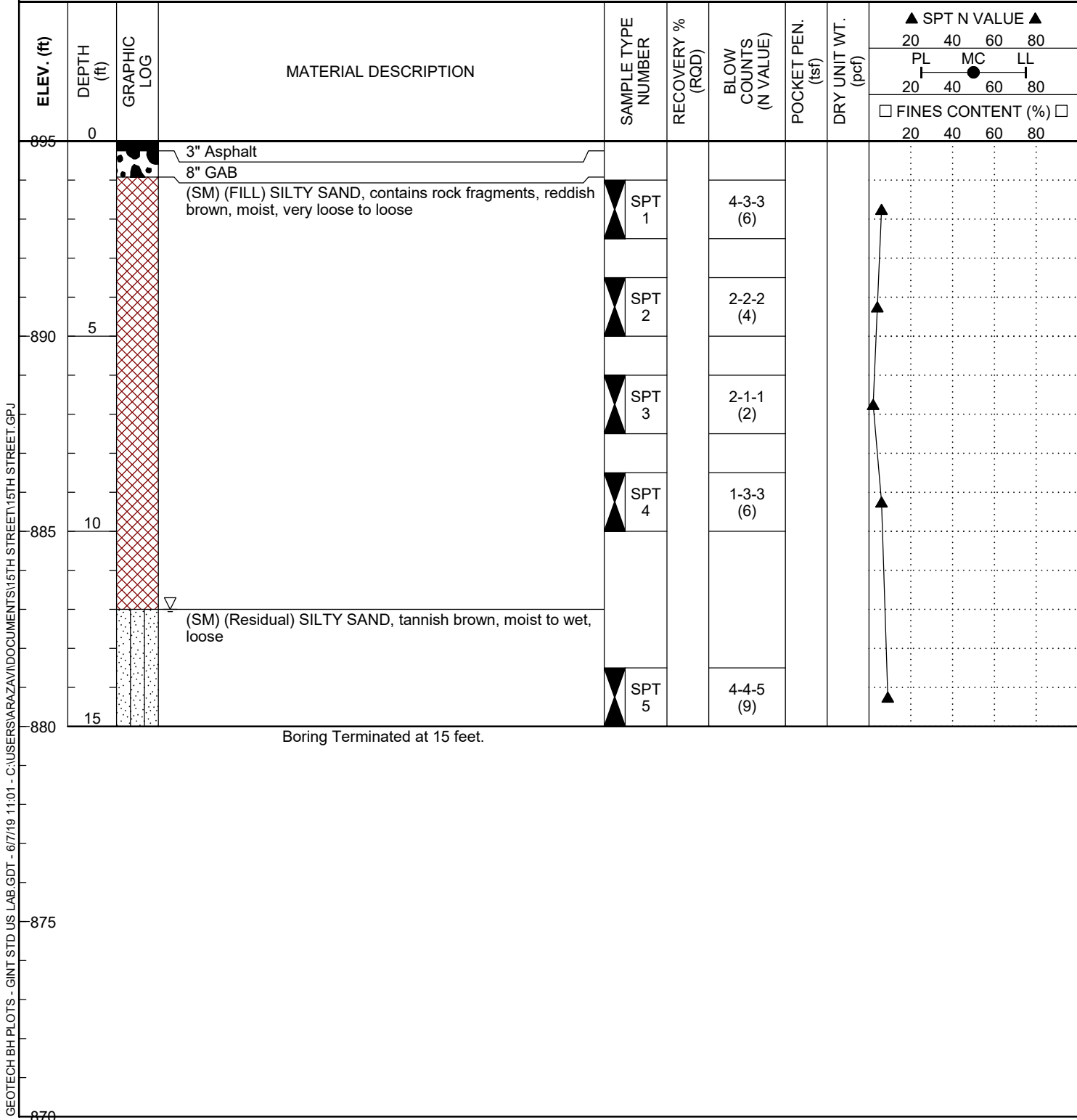
Boring Terminated at 20 feet.





**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/17/19      **COMPLETED** 5/17/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR      **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 895 ft      **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
▽ AT TIME OF DRILLING 12 ft / Elev 883 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** --- Caved in at 13 ft





CLIENT Jacobs  
 PROJECT NUMBER GDOT P.I. No. 0015019  
 DATE STARTED 5/17/19 COMPLETED 5/17/19  
 DRILLING CONTRACTOR Betts Environmental  
 DRILLING METHOD Hollow Stem Auger (Auto Hammer)  
 LOGGED BY AR CHECKED BY RM  
 NOTES All Elevations are Approximate

PROJECT NAME 15th Street Extension Soil Survey  
 PROJECT LOCATION Atlanta, GA  
 GROUND ELEVATION 898 ft HOLE SIZE 6 inches  
 GROUND WATER LEVELS:  
 AT TIME OF DRILLING ---  
 AT END OF DRILLING ---  
 AFTER DRILLING --- Caved in at 12 ft

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
0			6" Asphalt 8" GAB									
895			(SM) (FILL) SILTY SAND, reddish brown, moist, medium dense	SPT 1		13-7-10 (17)						
	5		(SM) (Residual) SILTY SAND, tannish brown, moist, medium dense to dense	SPT 2		4-5-7 (12)						
				SPT 3		7-6-5 (11)						
890				SPT 4		5-6-6 (12)						
	10											
885				SPT 5		17-22-21 (43)						
15												

Boring Terminated at 15 feet.

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**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/17/19 **COMPLETED** 5/17/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 898 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
 ▽ **AT TIME OF DRILLING** 14 ft / Elev 884 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** --- Caved in at 12 ft

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
0			2" Asphalt 8" GAB									
			(SM) (Residual) SILTY SAND, tannish brown, moist to wet, loose to medium dense	SPT 1		6-4-6 (10)						
895	5			SPT 2		5-5-5 (10)						
				SPT 3		5-4-4 (8)						
890	10			SPT 4		5-5-4 (9)						
885				SPT 5		7-7-7 (14)						
15												

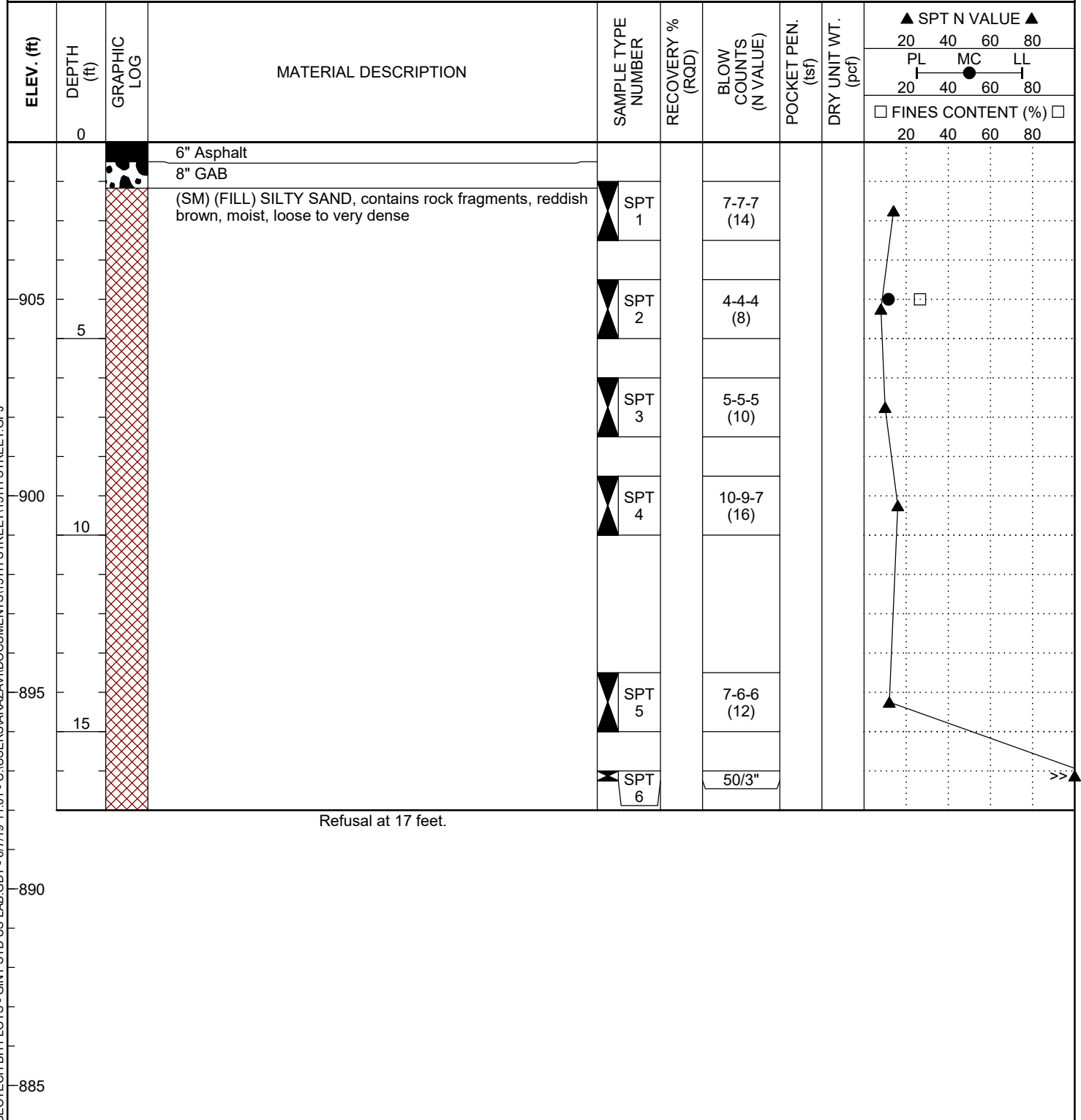
Boring Terminated at 15 feet.

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**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/20/19 **COMPLETED** 5/20/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 909 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** --- Caved in at 14 feet.



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**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/20/19 **COMPLETED** 5/20/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 909 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** --- Caved in at 13 ft

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
0			2" Asphalt 4" GAB									
			(SM) (Residual) SILTY SAND, tannish brown, moist to wet, medium dense to dense	SPT 1		4-6-6 (12)						
905	5			SPT 2		5-5-6 (11)						
				SPT 3		8-12-12 (24)						
900	10			SPT 4		5-6-9 (15)						
895	15			SPT 5		13-17-18 (35)						

Boring Terminated at 15 feet.

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**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/20/19 **COMPLETED** 5/20/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 913 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** --- Caved in at 14 ft

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
									20	40	60	80
0			2" Asphalt 4" GAB									
			(SM) (Residual) SILTY SAND, tannish brown, moist, medum dense	SPT 1		8-8-8 (16)						
910	5			SPT 2		5-7-9 (16)						
				SPT 3		10-12-12 (24)						
905	10		(SM) (PWR) PARTIALLY WEATHERED ROCK Sampled as SILTY SAND, tan and white, very dense	SPT 4		41-50/4"						
900	15			SPT 5		24-50/5"						

Boring Terminated at 15 feet.

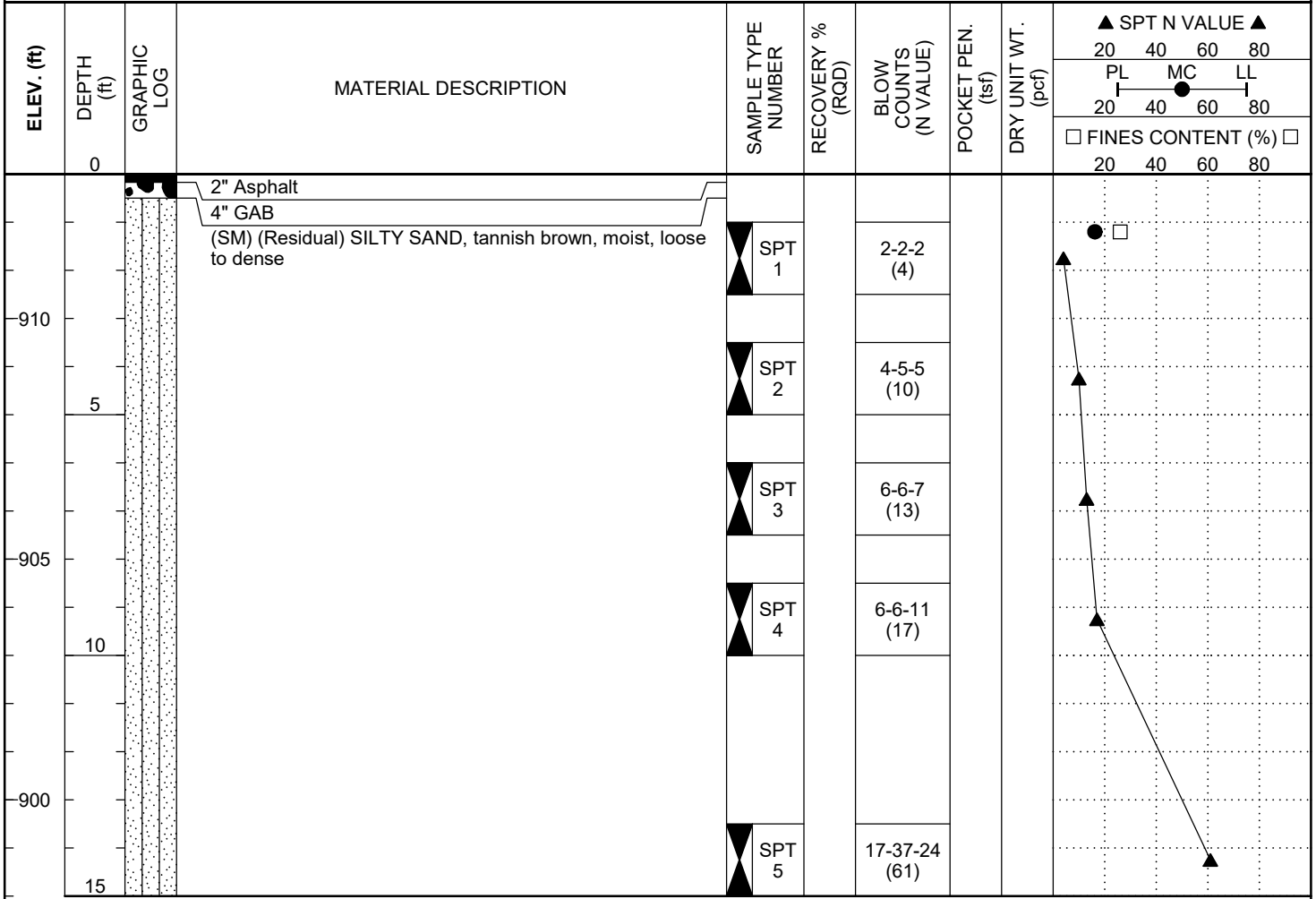
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# BORING NUMBER B-15

**CLIENT** Jacobs  
**PROJECT NUMBER** GDOT P.I. No. 0015019  
**DATE STARTED** 5/20/19 **COMPLETED** 5/20/19  
**DRILLING CONTRACTOR** Betts Environmental  
**DRILLING METHOD** Hollow Stem Auger (Auto Hammer)  
**LOGGED BY** AR **CHECKED BY** RM  
**NOTES** All Elevations are Approximate

**PROJECT NAME** 15th Street Extension Soil Survey  
**PROJECT LOCATION** Atlanta, GA  
**GROUND ELEVATION** 913 ft **HOLE SIZE** 6 inches  
**GROUND WATER LEVELS:**  
**AT TIME OF DRILLING** ---  
**AT END OF DRILLING** ---  
**AFTER DRILLING** --- Caved in at 14 ft



Boring Terminated at 15 feet.

Rock Core Photo Log Boring B-2 (3.5'-8.5')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
---	---	-----------------------



Rock Core Photo Log Boring B-3 (4'-14')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
--	---	-----------------------

B-3  
4' - 9'  
REC = %83.3  
RQD = %46.7

B-3  
9' - 14'  
REC = %93.3  
RQD = %63.3



Rock Core Photo Log Boring B-4 (4'-14')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
--	---	-----------------------

B-4  
4' - 9'  
REC = %96.7  
RQD = %58.3

B-4  
9' - 14'  
REC = %100  
RQD = %63.3



Rock Core Photo Log Boring B-4 (14'-21')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
---	---	-----------------------

B-4  
14' - 21'  
REC = %100  
RQD = %66.7



Rock Core Photo Log Boring B-5 (9'-14')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
--	---	-----------------------

B-5  
9' - 14'  
REC = %100  
RQD = %83.3





Rock Core Photo Log Boring B-6 (9'-14')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
--	---	-----------------------

B-6  
9' - 14'  
REC = %60  
RQD = %20



Rock Core Photo Log Boring B-7 (9'-14')	Project Name: 15 <sup>th</sup> St. Extension	GDOT P.I. No. 0015019
--	---	-----------------------

B-7  
9' - 14'  
REC = %100  
RQD = %90





Project Name: 15th St. Extension Project  
 Number: GDOT P.I. No. 0015019

Sampled by: AR  
 Tested by: EH  
 Reviewed by: RM

Georgia Department of Transportation (GDOT)

Lab No.	1962		1963		1964		1965		1966		1967
Sample No.	1		1		3		2		2		1
Station	12+70		11+90		13+70		14+90		16+20		17+20
Location	30' RTCL Boring B-7		25' RTCL/ 25'LTCL B-4/B-5		20' LTCL B-8		35' RTCL B-11		20' LTCL B-12		35' RTCL B-15

2 1/2" Sieve	100		100								
1 1/2" Sieve	100		100								
#10 Sieve	66.1		80.6								
#40 Sieve	51.6		63.8								
#60 Sieve	44.5		53.4								
#200 Sieve	28		30.4		29.6		25.5		26.6		26
%Clay	9.8		10.6								
T Vol Change	6.83		1.41								
%Swell	2.18		0.3								
%Shrinkage	6.56		1.43								
Max. Dry Den.	113.9		123.3								
%Opt. Moist.	13.8		10.3								
Liquid Lmt.	NV		NV								
Plast. Index	NP		NP								

Class	IA2		IA2		IA2		IA2		IA2		IA2
USCS	SM		SM		SM		SM		SM		SM

Date Sampled	5/21/2019		5/17/2019		5/17/2019		5/17/2019		5/20/2019		5/20/2019
Date Completed	6/6/2019		6/6/2019		5/30/2019		5/30/2019		5/30/2019		5/30/2019
Date Received	6/6/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019		6/6/2019

# DOT Volume Change

## GDT 6

**Project No.** 19G3005  
**Project Name** 15th Street Extension  
**Boring No.** B-7  
**Sample No.** Bulk Sample  
**Sample Depth** 0-9 feet  
**Sample Description** Reddish Brown Silty Sand-SM

**Tested By** EH  
**Test Date** 6/5/2019  
**Reviewed By** RM  
**Review Date** 6/7/2019  
**Lab No.** 1962

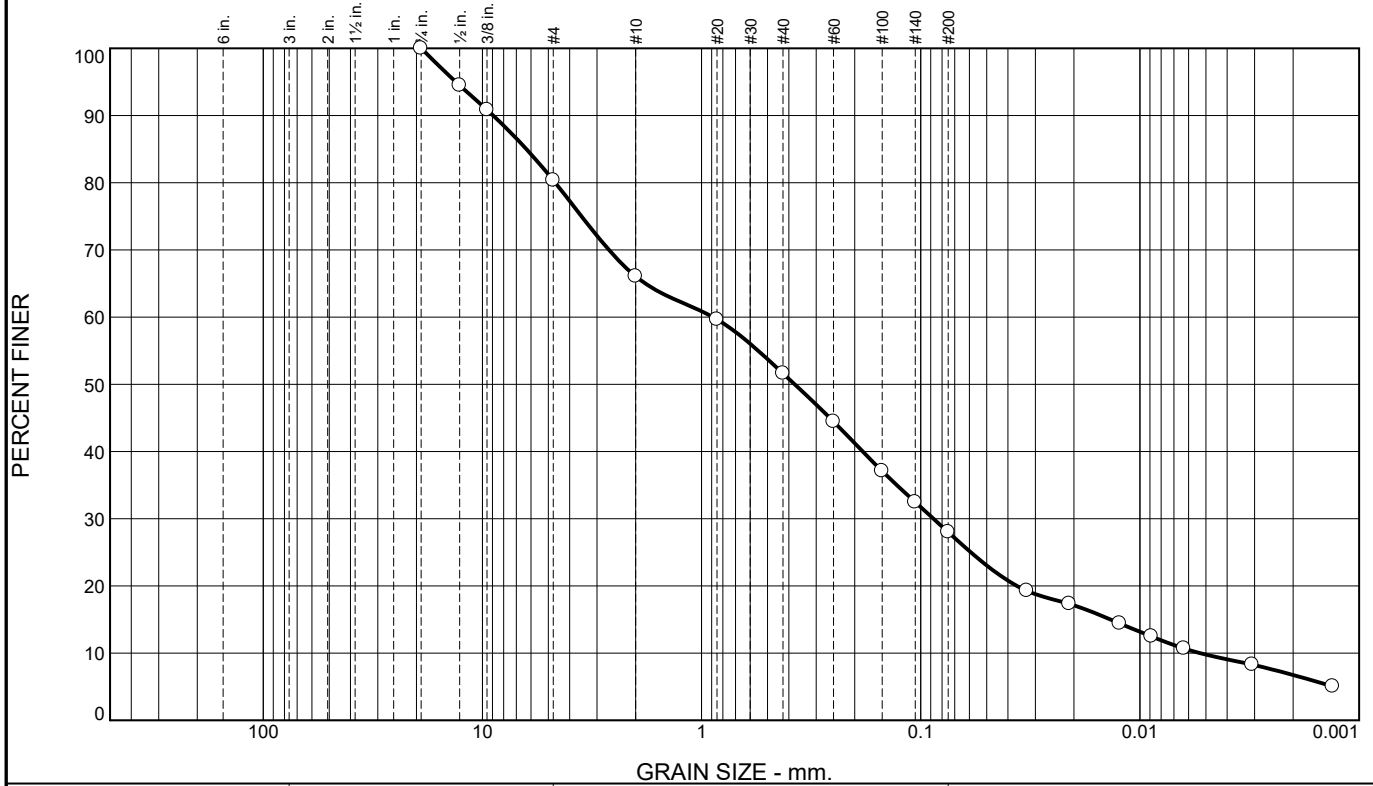
	<u>Swell</u>	<u>Shrink</u>	
(1) Weight of Mold (g)	<u>481.53</u>	<u>481.53</u>	(2) Mold Volume (ft <sup>3</sup> ):
Mold number	<u>#1</u>	<u>#1</u>	(Swell) <u>0.0073</u> (Shrink) <u>0.0073</u>
			Mold Diameter (in):
			(Swell) <u>3.996</u> (Shrink) <u>3.996</u>
			Mold Height (in):
			(Swell) <u>1.009</u> (Shrink) <u>1.009</u>

	3	4	5		6	7	8	9	10	11	12
Swell or Shrink	Wt. of Soil and Mold (g)	Weight of Soil (g) [3 - 1]	Wet Density (pcf) [4 / 2]	Pan Number	Weight of Pan (grams)	Wt. of Wet Soil & Pan (grams)	Wt. of Dry Soil & Pan (grams)	Wt. of Soil, (grams) [8 - 6]	Wt. of Water (grams) [7 - 8]	Moisture Content, % [10 / 9]	Dry Density (pcf) 5 / [(1) + 11]
Swell	<u>909.9</u>	428.4	129.0	<u>AN</u>	<u>8.2</u>	<u>113.4</u>	<u>101.3</u>	93.1	12.0	12.9	<u>114.2</u>
Shrink	<u>911.7</u>	430.2	129.5								<u>114.7</u>

<u>Swell</u>	<u>Shrink</u>
Initial Dial Reading: <u>1.034</u>	Initial Dial Reading (ht): <u>1.074</u> Tare ID: <u>N/A</u>
After Soak Dial Reading: <u>1.056</u>	After Drying Dial Reading (ht): <u>1.017</u>
	After Drying Dial Reading (d): <u>3.979</u>
	<u>3.976</u>
	<u>3.978</u>
	<u>3.974</u>
	Average: <u>3.977</u>
	Original Volume (in <sup>3</sup> ): <u>12.65</u>
	Final Volume (in <sup>3</sup> ): <u>11.82</u>
	<b>Shrinkage (%):</b> <u>6.56</u>

**Total Volume Change (%):** 8.74  
**Plus #10 Sieve Correction Factor:** 0.7822  
**Corrected Total Volume Change (%):** 6.83

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	19.6	14.3	14.5	23.6	18.2	9.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	94.5		
3/8"	90.8		
#4	80.4		
#10	66.1		
#20	59.7		
#40	51.6		
#60	44.5		
#100	37.1		
#140	32.5		
#200	28.0		
0.0328 mm.	19.3		
0.0210 mm.	17.3		
0.0124 mm.	14.4		
0.0089 mm.	12.5		
0.0063 mm.	10.7		
0.0031 mm.	8.3		
0.0013 mm.	5.1		

**Soil Description**

Brown Silty Sand-SM

**Atterberg Limits**

PL= NP      LL= NV      PI= NP

**Coefficients**

D<sub>90</sub>= 8.9396      D<sub>85</sub>= 6.3062      D<sub>60</sub>= 0.8868  
D<sub>50</sub>= 0.3760      D<sub>30</sub>= 0.0876      D<sub>15</sub>= 0.0136  
D<sub>10</sub>= 0.0053      C<sub>u</sub>= 166.86      C<sub>c</sub>= 1.63

**Classification**

USCS= SM      AASHTO=

**Remarks**

Sample Date: 5/28/2019  
Sampled By: Ali Test Dated: 06/06/2019

\* (no specification provided)

Location: B-7      Sample Number: 1962      Date: 06/07/2019

	<p><b>Client:</b> Jacobs Engineering</p> <p><b>Project:</b> 15th Street Extension</p> <p><b>Project No:</b> 19G3005</p> <p style="text-align: right;"><b>Figure</b></p>
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Tested By: EH      Checked By: RM





# DOT Volume Change

## GDT 6

**Project No.** 19G3005  
**Project Name** 15th Street Extension  
**Boring No.** B-4 /B-5  
**Sample No.** Bag Sample  
**Sample Depth** 0-6 feet  
**Sample Description** Grayish Brown Silty Sand-SM

**Tested By** EH  
**Test Date** 6/5/2019  
**Reviewed By** RM  
**Review Date** 6/7/2019  
**Lab No.** 1963

	<u>Swell</u>	<u>Shrink</u>	
(1) Weight of Mold (g)	<u>482.60</u>	<u>482.60</u>	(2) Mold Volume (ft <sup>3</sup> ):
Mold number	<u>#2</u>	<u>#2</u>	(Swell) <u>0.0073</u> (Shrink) <u>0.0073</u>
			Mold Diameter (in):
			(Swell) <u>3.996</u> (Shrink) <u>3.996</u>
			Mold Height (in):
			(Swell) <u>1.012</u> (Shrink) <u>1.012</u>

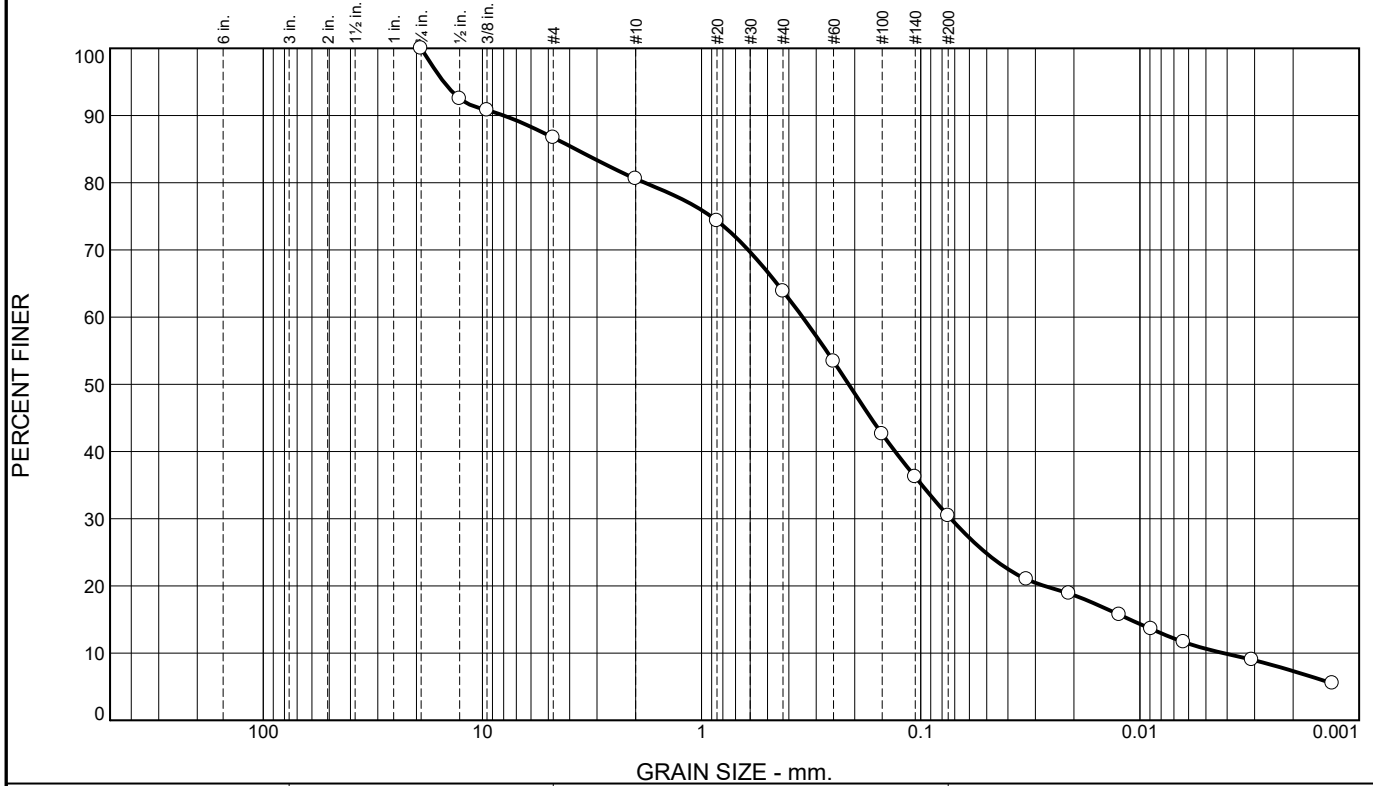
	3	4	5		6	7	8	9	10	11	12
Swell or Shrink	Wt. of Soil and Mold (g)	Weight of Soil (g) [3 - 1]	Wet Density (pcf) [4 / 2]	Pan Number	Weigh of Pan (grams)	Wt. of Wet Soil & Pan (grams)	Wt. of Dry Soil & Pan (grams)	Wt. of Soil, (grams) [8 - 6]	Wt. of Water (grams) [7 - 8]	Moisture Content, % [10 / 9]	Dry Density (pcf) 5 / [(1) + 11]
Swell	<u>924.1</u>	441.5	132.5	<u>AF</u>	<u>8.2</u>	<u>162.2</u>	<u>148.9</u>	140.7	13.3	9.4	121.1
Shrink	<u>927.3</u>	444.7	133.5								122.0

<u>Swell</u>	<u>Shrink</u>
Initial Dial Reading: <u>1.041</u>	Initial Dial Reading (ht): <u>1.009</u> Tare ID: <u>N/A</u>
After Soak Dial Reading: <u>1.044</u>	After Drying Dial Reading (ht): <u>0.997</u>
	After Drying Dial Reading (d): <u>3.995</u>
	<u>3.990</u>
	<u>3.990</u>
	<u>3.989</u>
	Average: <u>3.991</u>
	Original Volume (in <sup>3</sup> ): <u>12.69</u>
	Final Volume (in <sup>3</sup> ): <u>12.51</u>
	<b>Shrinkage (%): <u>1.43</u></b>

**Total Volume Change (%): 1.73**  
**Plus #10 Sieve Correction Factor: 0.816**  
**Corrected Total Volume Change (%): 1.41**



# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	13.3	6.1	16.8	33.4	19.8	10.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	92.5		
3/8"	90.8		
#4	86.7		
#10	80.6		
#20	74.3		
#40	63.8		
#60	53.4		
#100	42.6		
#140	36.2		
#200	30.4		
0.0329 mm.	21.0		
0.0211 mm.	18.9		
0.0124 mm.	15.7		
0.0089 mm.	13.6		
0.0063 mm.	11.6		
0.0031 mm.	9.0		
0.0013 mm.	5.5		

\* (no specification provided)

**Soil Description**

Brown Silty Sand-SM

**Atterberg Limits**

PL= NP      LL= NV      PI= NP

**Coefficients**

D<sub>90</sub>= 8.0014      D<sub>85</sub>= 3.7606      D<sub>60</sub>= 0.3462  
D<sub>50</sub>= 0.2132      D<sub>30</sub>= 0.0729      D<sub>15</sub>= 0.0111  
D<sub>10</sub>= 0.0042      C<sub>u</sub>= 83.28      C<sub>c</sub>= 3.69

**Classification**

USCS= SM      AASHTO=

**Remarks**

Sample Date: 5/28/2019  
Sampled By: Ali  
Test Date: 06/06/2019

**Location:** B4/B5  
**Sample Number:** 1963

**Date:** 06/07/2019



**Client:** Jacobs Engineering  
**Project:** 15th Street Extension

**Project No:** 19G3005

**Figure**

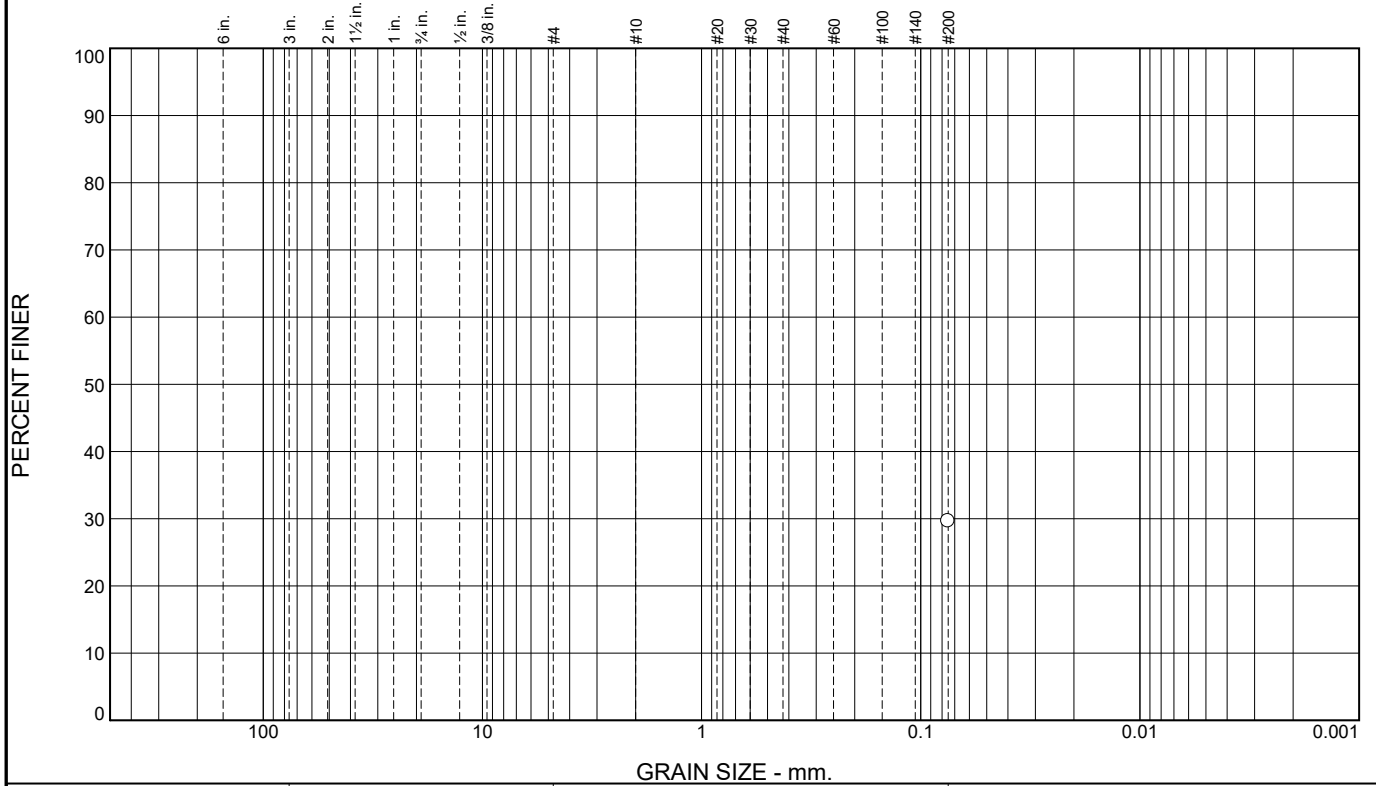
**Tested By:** EH

**Checked By:** RM





# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						29.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	29.6		

\* (no specification provided)

**Soil Description**

Dark Graish Brown Silty Sand-SM

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>90</sub>=                      D<sub>85</sub>=                      D<sub>60</sub>=  
D<sub>50</sub>=                      D<sub>30</sub>=                      D<sub>15</sub>=  
D<sub>10</sub>=                      C<sub>u</sub>=                      C<sub>c</sub>=

**Classification**

USCS= SM                      AASHTO=

**Remarks**

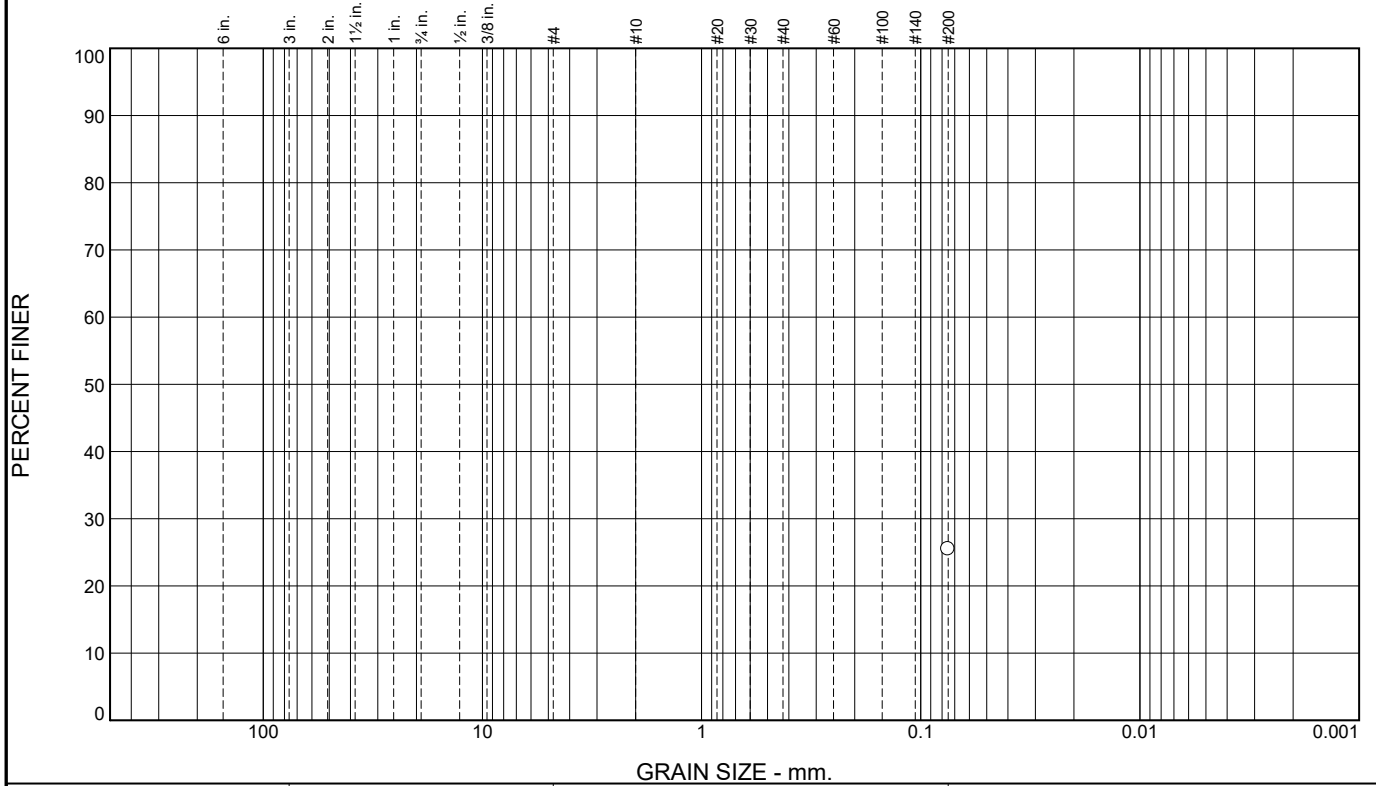
Date Sample: 5/28/2019  
Sampled By: Ali  
Date Tested 5/30/2019, NM=13.4%

**Location:** B-8                      **Depth:** 6.0-7.5'                      **Date:** 06/06/2019  
**Sample Number:** 1964

	<p><b>Client:</b> Jacobs Engineering  <b>Project:</b> 15th Street Extension  <b>Project No:</b> 19G3005</p>
<b>Figure</b>	

**Tested By:** EH                      **Checked By:** RM

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						25.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	25.5		

\* (no specification provided)

**Soil Description**

Light Gray Silty Sand-SM

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>90</sub>=                      D<sub>85</sub>=                      D<sub>60</sub>=  
D<sub>50</sub>=                      D<sub>30</sub>=                      D<sub>15</sub>=  
D<sub>10</sub>=                      C<sub>u</sub>=                      C<sub>c</sub>=

**Classification**

USCS= SM                      AASHTO=

**Remarks**

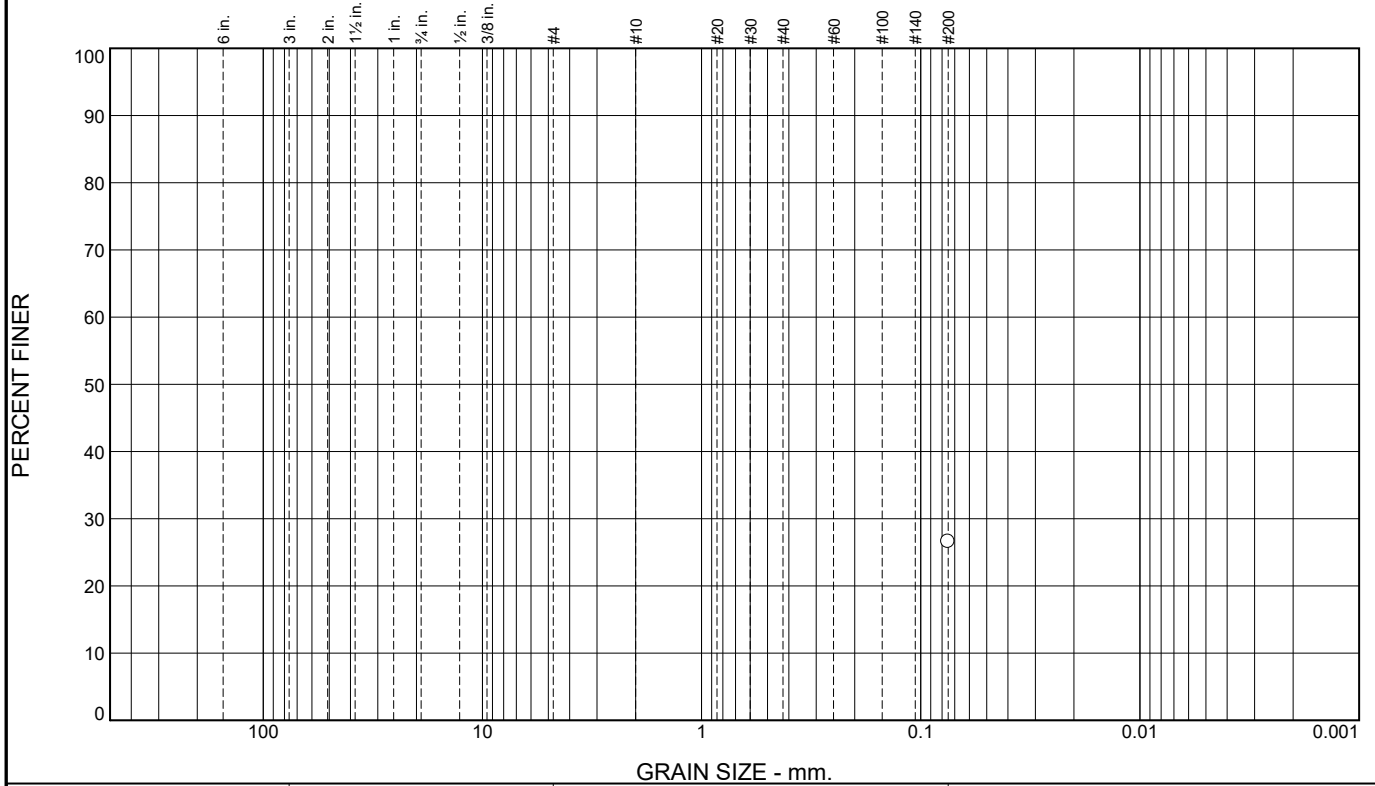
Date Sample: 5/28/2019  
Sampled By: Ali  
Date Tested: 5/30/2019, NM=11.8%

Location: B-11                      Depth: 3.5-5.0'                      Date: 06/06/2019  
Sample Number: 1965

	<b>Client:</b> Jacobs Engineering <b>Project:</b> 15th Street Extension <b>Project No:</b> 19G3005
<b>Figure</b>	

Tested By: EH                      Checked By: RM

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						26.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	26.6		

\* (no specification provided)

**Soil Description**

Brown Silty Sand-SM

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>90</sub>=                      D<sub>85</sub>=                      D<sub>60</sub>=  
D<sub>50</sub>=                      D<sub>30</sub>=                      D<sub>15</sub>=  
D<sub>10</sub>=                      C<sub>u</sub>=                      C<sub>c</sub>=

**Classification**

USCS= SM                      AASHTO=

**Remarks**

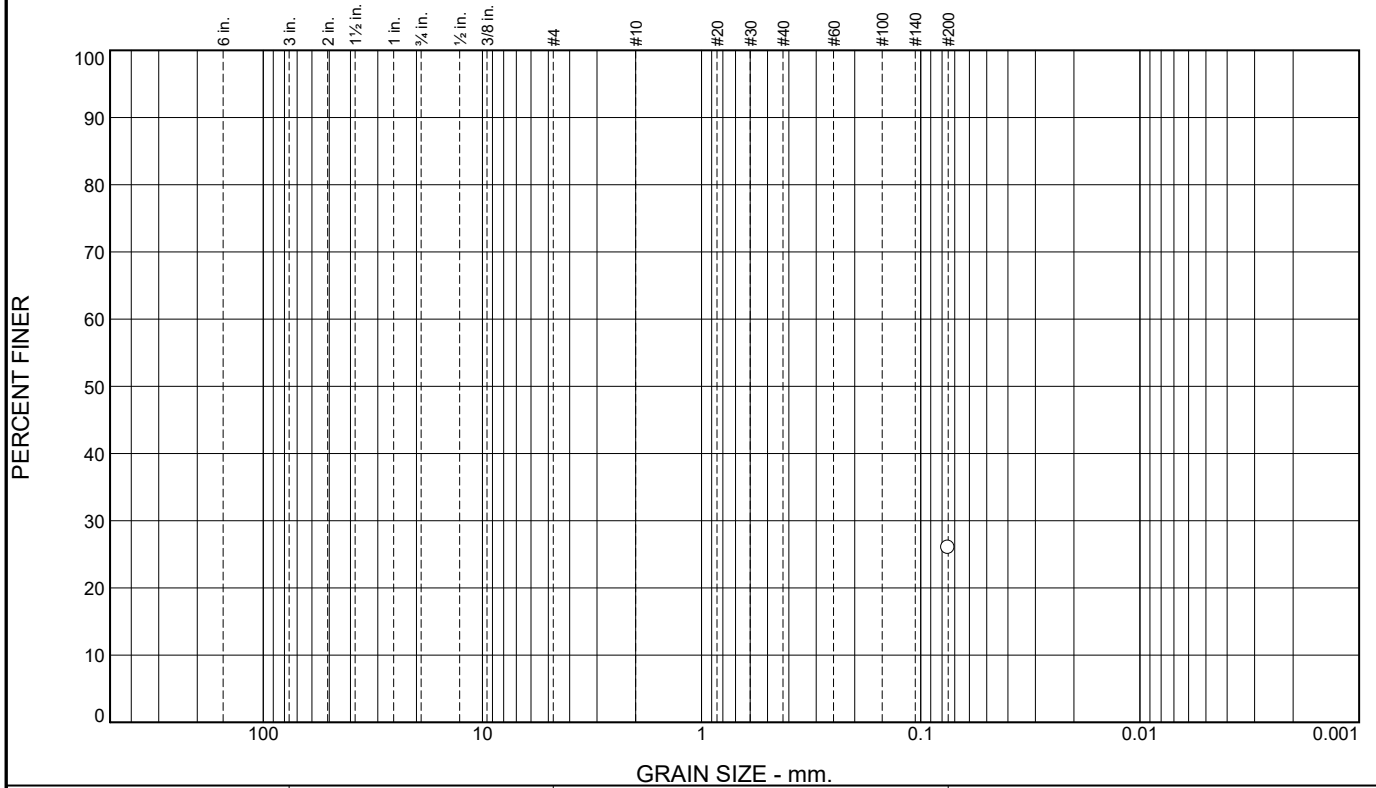
Date Sample;5/28/2019  
Sampled By: Ali  
Date Tested 5/30/2019, NM=11.6%

**Location:** B-12                      **Depth:** 3.5-5.0'                      **Date:** 06/06/2019  
**Sample Number:** 1966

	<p><b>Client:</b> Jacobs Engineering</p> <p><b>Project:</b> 15th Street Extension</p> <p><b>Project No:</b> 19G3005</p> <p style="text-align: right;"><b>Figure</b></p>
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**Tested By:** EH                      **Checked By:** RM

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						26.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	26.0		

\* (no specification provided)

**Soil Description**

Light Gray Micaceous Silty Sand-SM

**Atterberg Limits**

PL=                      LL=                      PI=

**Coefficients**

D<sub>90</sub>=                      D<sub>85</sub>=                      D<sub>60</sub>=  
D<sub>50</sub>=                      D<sub>30</sub>=                      D<sub>15</sub>=  
D<sub>10</sub>=                      C<sub>u</sub>=                      C<sub>c</sub>=

**Classification**

USCS= SM                      AASHTO=

**Remarks**

Sample Date: 05/28/2019  
Sampled By: Ali  
Date Tested: 05/30/2019, NM= 16.2%

**Location:** B-15                      **Depth:** 1-2.5'

**Sample Number:** 1967

**Date:** 06/06/2019



**Client:** Jacobs Engineering  
**Project:** 15th Street Extension

**Project No:** 19G3005

**Figure**

**Tested By:** EH

**Checked By:** RM

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**SPECIAL PROVISION**

**PROJECT: 15<sup>th</sup> Street Extension, Fulton County**

**PI No. 0015019**

**Section 154 — Construction Vibration Monitoring**

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*Add the following:*

**154.1 General Description**

This Work consists of performing preconstruction crack surveys, seismograph and other monitoring of construction vibrations, and post construction crack surveys of the buildings located on Parcels #1, 4, 6, 8 and 9 adjacent to the proposed project construction on 15<sup>th</sup> street from West Peachtree Street NW to Williams Street NW by procuring the services of a prequalified subcontractor specializing in this work.

**154.1.01 Definitions**

General Provisions 101 through 150.

**154.1.02 Related References**

**A. Standard Specifications**

General Provisions 101 through 150.

**B. Referenced Documents**

General Provisions 101 through 150.

**154.1.03 Submittals**

**A. Prequalification of Subcontractor**

Submit the following documentation for the Engineer's review and approval a minimum of thirty days prior to beginning construction activities on the project:

Evidence of the subcontractor's successful completion of at least five projects similar in concept and scope to the proposed crack survey and vibration monitoring. Include names, addresses and telephone numbers of the owners' representatives for verification.

Résumés of employees performing this work. Provide evidence showing each employee possesses experience and knowledge similar in concept and scope of this work for performing crack surveys and installing and reading seismographs. Provide evidence that the reports will be reviewed and signed by a



Georgia Licensed Professional Engineer or Georgia Licensed Professional Geologist. The Department will be sole judge of determining if employees are qualified to perform the work on this project.

A detailed survey plan, monitoring plan, and sequence of work that describes all materials, methods and equipment to be used to complete the crack survey and vibration monitoring.

#### **B. Construction Monitoring**

Submit the following documentation during construction monitoring:

Preconstruction Crack Survey Report documenting existing conditions of buildings prior to construction activities in accordance with subsection 154.3.03.B.

Monthly Seismograph Data and Data Summary Report and Activity Log of all construction activities within 500 feet (152 meters) of the seismograph in accordance with subsection 154.3.03.A.1.

Reports of building conditions regarding cracks or any other damage potentially caused by construction activities as complaints are received in accordance with subsection 154.3.03.C.

#### **C. Post Construction**

Submit a Post Construction Crack Survey Report in accordance with subsection 154.3.03.D documenting post construction condition of cracks or damage identified in the pre-construction survey and cracks or any other damage potentially caused by construction activities.

### **154.2 Materials**

General Provision 101 through 150.

### **154.3 Construction Requirements**

#### **154.3.01 Personnel**

Ensure all employees performing this work have been approved by the Engineer in accordance with subsection 154.1.03.A.

#### **154.3.02 Equipment**

##### **A. Seismograph**

Use a seismograph(s) that is weather proof and capable of continuously recording particle velocity in three perpendicular components with a flat response of 2-250 HZ over a range of at least 0.01 to 5.0 inches per second (0.254 to 127 mm per second). Provide a seismograph(s) that employs an internal dynamic calibration during each recording sequence and that has been shake table tested within the previous 24 months verifying an accuracy of +/- 5% over the frequency range of 4 to 125 Hertz. Provide a recorder/ software system that is capable of digitally storing and reproducing vibration levels in tabular or histogram (bar graph) form at no greater than six minute intervals.

##### **B. Crack Gauges**

Use crack gauges specifically designed for use on this type of work. Utilize a minimum of 15 crack gauges and a maximum of 25 to monitor significant cracks on the interior or exterior of buildings located closest to the construction activities. Submit the proposed locations of crack gauges to the Engineer for review and approval prior to installation. Use crack gauges that do not damage or stain existing surfaces. Replace missing or damaged gauges at no additional cost to the Department. Repair and restore surfaces back to the pre- installation state.

### **154.3.03 Construction**

Obtain Engineer's written approval of the Prequalification documents submitted in accordance with Subsection 154.1.03.A prior to beginning this work.

Perform the preconstruction crack survey prior to starting construction activities on the project.

Install and begin seismograph monitoring prior to starting excavation, shoring and backfilling construction activities on the project.

Maintain seismograph and crack monitoring until excavation, shoring and backfilling, compaction of subgrade, base and pavement construction activities on the project are complete.

#### **A. Seismograph Installation and Monitoring**

Monitor vibrations at building(s) using seismograph(s) when construction activities including, but not limited to, excavation, shoring installation, backfilling, and compaction of subgrade, base and pavement are within 75 feet (23 meters) of the building(s), or otherwise have the potential to result in vibrations that may cause damage or complaints. Relocate seismograph(s) as needed. Protect the seismograph from weather and vandalism. Replace missing or damaged equipment at no cost to the Department. Document the following information at the time that the seismograph is installed:

Date and time of installation

Coordinates of installed instrument or Station and offset

Method of transducer attachment

Name and affiliation of the person installing the instrument

##### **1. Monthly Seismograph Data and Data Summary Report and Activity Log:**

Compile a Monthly Seismograph Data and Data Summary Report containing the data from the seismograph and a summarization of the data showing time and magnitude of the maximum vibration that has occurred each day.

Maintain an activity log of all construction activities within 500 feet (152 meters) of the seismograph. Include the following data in each log:

Location of construction activity

Type of construction activity

Types and number of construction equipment being used, including model, manufacture and weight.

Date and times construction equipment was used.

Submit Monthly Seismograph Data Summary Report and Activity Log to the Engineer on a monthly basis.

#### **B. Preconstruction Crack Survey**

Complete a preconstruction crack survey on the outside and inside of all buildings located on Parcels #1, 4, 6, 8 and 9. Document building conditions by taking photographs and detailed notes citing location, length and width of cracks. Compile documentation into a Preconstruction Crack Survey Report and submit to the Engineer.

**C. Building Monitoring**

Monitor buildings during construction for any new cracks and or elongation or widening of existing cracks. Provide a report of building conditions to the Engineer regarding cracks or any other damage potentially caused by construction activities as complaints are received.

**D. Post Construction Crack Survey**

Complete a post construction crack survey on the outside and inside of all buildings located on Parcels: #1, 4, 6, 8 and 9. Document building conditions by taking photographs and detailed notes citing condition of cracks or damage identified in the pre-construction survey; also, location, length and width of cracks or any other damage potentially caused by construction activities.

**154.4 Measurement**

The Work under this Contract Item is not measured separately for payment.

**154.5 Payment**

This Contract Item completed and accepted will be paid for at the Lump Sum Price bid. Payment will be full compensation for furnishing and installing the seismograph(s) and crack gauges, for monitoring and reporting vibration data recorded on the seismograph(s) and crack gauges, and completing crack survey and documenting building conditions and providing copies of all data to the Engineer in accordance with this specification. Seismographs, crack gauges and all other measuring equipment and devices will remain property of the Contractor.

Payment will be made under:

Item No. 154	Construction Vibration Monitoring	Per Lump Sum
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Office of Materials and Testing

pH   
 Resistivity

Project Number: 15th. Street Extension - 19G3005

County: Fulton

P.I. Number: GDOT P.I. No. 0015019

## Pipe Culvert Material Alternates

TYPE OF INSTALLATION			PIPE TYPE												
			CONCRETE	STEEL			ALLUMINUM	THERMOPLASTIC							
			REINFORCED CONCRETE AASHTO M-170	CORRUGATED STEEL ALUMINUM COATED (TYPE 2) AASHTO M-36	CORRUGATED STEEL PLAIN ZINC COATED AASHTO M-36	POLYMER COATED STEEL AASHTO M-245	CORRUGATED ALUMINUM AASHTO M-196	CORRUGATED HDPE AASHTO M-252	CORRUGATED SMOOTHED LINED HDPE TYPE "S" AASHTO M-294	CORRUGATED SMOOTH LINED POLYPROPYLENE AASHTO M 330	PVC CORRUGATED SMOOTH INTERIOR ASTM F-949	PVC Profile Wall Drain Pipe AASHTO M-304			
STORM DRAIN	NON-TRAVEL BEARING (OUTSIDE ROADBED)	INTERSTATE	X												
		NON INTERSTATE	X	X		X	X		X	X	X	X			
	TRAVEL BEARING (INSIDE ROADBED)	GRADE ≤ 10%	ADT < 1,500	X	X		X	X		X	X	X	X		
			1,500 < ADT < 5,000	X	X		X	X		X	X	X	X		
			5,000 < ADT < 15,000	X							X	X	X	X	
			ADT > 15,000 & INTERSTATES	X											
		GRADE > 10%				X			X	X	X	X	X		
	SIDE DRAIN			X		X	X		X	X	X	X	X		
	PERMANENT SLOPE DRAIN				X	X	X		X	X	X	X	X		
	PERFORATED UNDERDRAIN				X	X		X	X	X	X	X	X		

**NOTES:**

- 1 Allowable materials are indicated by an "X".
- 2 Structural, installation, fill height and backfill requirements of storm drain pipe will be in accordance with Georgia Standard 1030-D or 1030-P and the Standard Specifications
- 3 The Contractor shall provide additional storm sewer capacity calculations if a pipe material other than concrete is selected.
- 4 Pipe used under mechanically stabilized earth (MSE) walls, within MSE wall backfill, or within five feet of an MSE wall face shall be Class V Concrete Pipe.