CITY OF DALTON, GEORGIA

CONTRACT DOCUMENTS
For
PROJECT:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

CITY OF DALTON PUBLIC WORKS DEPARTMENT
PO BOX 1205
DALTON, GEORGIA 30722

GEORGIA REGISTERED No. PE043928 PROFESSIONAL ENGINEER JEFF B. FENNELL
01-04-24

INVITATION TO BID

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

Sealed bids will be received by the City of Dalton Finance Department located at 300 W. Waugh Street, Dalton, Georgia 30721 until:

FRIDAY, MARCH 8, 2024 AT 2:00 PM

for the furnishing of all design, materials, labor, tools, skill, equipment and incidentals unless noted otherwise for the construction of the project entitled:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

at which time and place the sealed bids will be publicly opened and read aloud.

Bids received after the designated time will not be considered.

The principal items of construction include:

Approximately 2,000 feet of utility improvements, drainage improvements, roadway improvements and streetscape improvements along Pentz Street and Cuyler Street including electrical and communications duct bank installation, demolition items, pavement milling, asphalt paving, concrete sidewalks and driveways, traffic signal items, concrete curb & gutter, storm sewer improvements, decorative brick pavers, landscaping items and other miscellaneous items for general roadway construction including striping, traffic control, and erosion control items. All work shall be performed according to the latest Georgia D.O.T. Standards and Specifications.

Bidders shall inform themselves of and comply with all conditions and specifications contained in the bid package, contract, related documents and State and Federal Law. Bidders are advised that this project is funded in large part by the American Rescue Plan Act Improving Neighborhood Outcomes in Disproportionately Impacted Communities Grant Program, administered by the Governor's Office of Planning and Budget, the terms and conditions of which are attached and incorporated into this bid package.

The bid package, specifications, and contract documents for this project are open to public inspection at the City of Dalton Public Works Department located at 535 Elm Street, Dalton, Georgia 30721. The Public Works Department may be contacted by telephone at (706) 278-7077 or by mail at P.O. Box 1205, Dalton, Georgia 30722.

A **Mandatory** pre-bid meeting is scheduled for **1:00 PM Thursday, February 15, 2024** to begin at the Public Works Office. Please reserve time to tour the site locations. Failure to attend the mandatory pre-bid meeting will result in disqualification from being able to

provide a bid on the work.

Any questions pertaining to the bid documents and specifications should be submitted in writing via email by the **question's deadline of 4:00 PM Wednesday, February 21, 2024**. Questions must be directed to Jackson Sheppard at: jsheppard@daltonga.gov.

The City of Dalton will issue responses to questions and any other corrections or amendments it deems necessary in written addenda issued prior to the bids due date. Bidders are advised to check the website for addenda before submitting a bid.

One Contract shall be awarded covering all work, and the contract duration shall be 365 Calendar Days from notice to proceed. Bidders must agree to pay liquidated damages in accordance with the schedule specified in Section 108.08 of the latest Georgia D.O.T. Specifications for each consecutive calendar day thereafter. Due consideration will be given to delivery of materials in specifying starting date.

Contract documents, plans, and the bid package for this project may be obtained electronically via the City of Dalton's webpage http://www.daltonga.gov.

Should a bidder choose to download the bid package from the City of Dalton webpage, please send a written request to be added to the Project "Bidder's List" by sending an email request to: jsheppard@daltonga.gov.

Bids must be accompanied by a Certified Check or Bid Bond in an amount equal to not less than five percent *(5%)* of the bid to be considered.

In accordance with State Law (O.C.G.A. 13-10-91 & 50-36), ALL SEALED BIDS MUST INCLUDE AN EXECUTED E-VERIFY AFFIDAVIT.

No bid may be withdrawn after the scheduled closing time for receiving bids for a period of sixty *(60)* days.

The Owner reserves the right to reject any or all bids (and/or alternates) and to waive formalities and re-advertise.

CITY OF DALTON, GEORGIA

BY

T. Jackson Sheppard, E.I.T.
Project Manager

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SECTION 0100 – INFORMATION FOR BIDDERS

0101 RECEIPT AND OPENING OF BIDS

The CITY OF DALTON, GEORGIA *(hereinafter called the Owner)*, invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Owner at the CITY OF DALTON FINANCE DEPARTMENT 300 W. WAUGH STREET, DALTON, GEORGIA 30721 until MARCH 8TH, 2024, AT 2:00 PM and then at said office publicly opened and read aloud. The envelope containing the bids must be sealed and designated as the bid for the construction of the project entitled:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities to reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof.

0102 PREPARATION OF BID

Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in numerals for unit prices and for total amounts.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. In accordance with State Law (O.C.G.A 13-10-91 & 50-36), **ALL SEALED BIDS MUST INCLUDE AN EXECUTED E-VERIFY AFFIDAVIT**, THIS DOCUMENT CAN BE FOUND IN THE BID PROPOSAL SECTION. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form. Any bid which is not properly prepared and accompanied by required certifications may be rejected by the Owner.

Each bidder will be required to certify compliance with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act O.C.G.A. §13-10-90 et seq. by doing the following: registering at https://www.uscis.gov/e-verify to verify information of all newly hired employees in order to comply with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act. Each firm must submit a completed and notarized E-verify (Exhibit A) affidavit with their bid submittal. During the entire duration of this contract, Contractor and all sub-contractors must remain in compliance with Georgia Security and Immigration Compliance Act of 2007 and Georgia code §13-10-91 and §50-36-1.

0103 ELECTRONIC MAIL MODIFICATION

Any bidder may modify his bid by written electronic communication at any time prior to the scheduled closing time for receipt of bids, provided such communication is received by the Owner prior to the closing time, and, provided further, the Owner is satisfied that a written confirmation of the electronic modification over the signature of the bidder was mailed prior to the closing time. If written confirmation is not received within two days from the closing time, no consideration will be given to the electronically mailed modification.

0104 QUALIFICATIONS OF BIDDERS

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. By submission of his Bid, the Bidder acknowledges the right of the Owner to make such investigations, to contact references and utilize this information as a basis of determining award of the contract. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

Written information pertaining to the Bidder's qualifications may be requested by the Owner. Failure of the Bidder to provide such information within fifteen days of notification will be grounds for disqualification.

0105 BID SECURITY

Each bid must be accompanied by a certified check or bid bond prepared on the form of bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of five (5)% of the bid. Such certified checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining certified checks or bid bonds will be returned promptly after the Owner

and the accepted bidder have executed the contracts, or, if no award has been made within 60 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

0106 LIQUIDATED DAMAGES AND FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security (bid bond) deposited with his bid.

0107 TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within 365 Calendar Days following "Notice to Proceed". Bidders must agree to pay liquidated damages in accordance with the schedule specified in Section 108.08 of the latest Georgia D.O.T. Specifications for each consecutive calendar day thereafter. Anticipated "Notice to Proceed" date is tentatively set for April 19, 2024.

0108 CONDITION OF WORK

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

0109 ADDENDA AND INTERPRETATIONS

Oral interpretations of the meaning of plans, specifications or other contract documents shall not be binding over written material.

Every request for such interpretation should be in writing addressed to City of Dalton Public Works, P.O. Box 1205, Dalton, Georgia 30722 or by email to Jackson Sheppard (jsheppard@daltonga.gov) and to be given consideration must be received by the question's deadline of 4:00 PM February 21, 2024. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications, which, will be emailed to all prospective bidders. Failure of any bidder to receive any such addendum or interpretations shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

0110 SECURITY FOR FAITHFUL PERFORMANCE

Simultaneously with his delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of his contract and for the payment of all persons performing labor on the project under this contract, and furnishing materials in connection with his contract, as specified in the General Conditions included herein. Surety companies executing Bonds must appear on the Treasury Department's most current list *(Circular 570 as amended)* and be authorized to transact business in the state where the project is located.

0111 POWER OF ATTORNEY

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

0112 NOTICE OF SPECIAL CONDITIONS

Attention is particularly called to those parts of the contract documents and specifications which are identified subsequently under Special Conditions.

0113 LAWS AND REGULATIONS

The bidders' attention is directed to the fact that all applicable federal and state 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 the same as though herein written out in full.

0114 METHOD OF AWARD

If the Contract is awarded, it will be awarded to the lowest Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the project. The Owner shall have complete discretion in making this determination and may consider factors such as, but not limited to the following:

0114.01 Unit bid prices of various items as they relate to total bid price.

0114.02 Proximity of the Bidder's permanent place of business as it may relate to Bidder's responsiveness in carrying out the contract.

0114.03 Litigation record of the Bidder.

0114.04 Satisfactory completion of similar projects.

0114.05 Resources pertaining to management, personnel and equipment.

0114.06 Financial history, credit rating and current resources.

0115 OBLIGATION OF BIDDER

At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents *(including all addenda)*. The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to his bid.

0116 CORRELATION AND INTENT OF DOCUMENTS

The contract documents are complementary, and what is called for by one shall be as binding as if called for by all.

The intent of the documents is to describe in detail all construction entailed in this project. The contractor will furnish all labor, materials, equipment, transportation, tools and appurtenances such as may be reasonably required under the terms of the contract to make each part of the work complete.

The drawings are intended to conform and agree with the specifications. If, however, discrepancies occur, the Owners will decide which shall govern. Special specifications stated on the drawings govern that particular piece of construction and have equal weight and importance as the printed specifications. In the event of any discrepancies between the drawings and the figures written thereon, the figures are to be taken as correct.

0117 CLAIMS

The Owner reserves the right to refuse to issue any voucher and to direct that no payment shall be made the contractor in the case they have reason to believe that said contractor has neglected or failed to pay any subcontractor, material dealer, worker or employee for work performed on or about the project including work as set forth in these specifications, until the Owner is satisfied that such subcontractors, material dealers, worker, or employees have been fully paid. However this provision shall not obligate the Owner to intervene in any claim.

0118 ORDER OF WORK

The work shall be started at such points as the Owner shall designate and shall be prosecuted in the order he directs. This applies to both location and items of construction.

0119 SUBCONTRACTS

If required by the Owner, the apparent Successful Bidder, and any other Bidder so requested, will within seven days after the day of the Bid opening submit to Owner

a list of all Subcontractors and other persons and organizations *(including those who are to furnish the principal items of material and equipment)* proposed for those portions of the Work as to which such identification is so required. If the Owner, after due investigation, has reasonable objection to any proposed Subcontractor, other person or organization, may, before giving the Notice of Award, request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price. If the apparent Successful Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any Subcontractor, other person or organization so listed and to whom the Owner does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner.

0120 TIMELY EXECUTION

When the Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by at least five unsigned counterparts of the Agreement and all other Contract Documents. Within ten days thereafter, the Contractor shall sign and deliver at least five counterparts of the Agreement to Owner with all other Contract Documents attached. Thereafter, the Owner will deliver two fully signed counterparts to Contractor.

0121 SALES TAX NOTICE

Bidders are hereby advised that they are not entitled to take advantage of Owner's tax-exempt status and all bids should reflect sales tax on any materials purchased.

..... END OF SECTION .....

SECTION 0200 – BID PROPOSAL

BID BOND
(Five Percent of Bid)

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____

Wilson Construction Management, LLC

of the City of Norcross State of Georgia and County of Gwinnett

as Principal and THE GRAY CASUALTY & SURETY COMPANY

as Surety, are hereby held and firmly bound unto the CITY OF DALTON, GEORGIA as Owner in the penal sum of Five Percent of the total amount bid

Dollars ($ 5%) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed this 08 day of March, 2024.

The condition of the above obligation is such that whereas the Principal has submitted to the CITY OF DALTON, GEORGIA a certain bid attached hereto and hereby made a part hereof to enter into a contract in writing for the construction of the project entitled:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

NOW, THEREFORE,

(a) If said bid shall be rejected or in the alternate,

(b) If said bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto *(properly completed in accordance with said bid)* and shall furnish a bond for his faithful performance of

BID BOND
(Continued)

said contract and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void; otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bids, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Witness As To Principal

Wilson Construction Management, LLC
Principal

By _____ *SEAL*

CONSTRUCTION MANAGEMENT LLC WILSON LIMITED LIABILITY COMPANY SEAL 08/23/2019 GEORGIA

Witness As To Surety
Stephanie Wall

THE GRAY CASUALTY & SURETY COMPANY
Surety

P.O. Box 6202, Metairie, LA 70009
Address

By _____
Attorney-in-Fact
Jessica Reno

THE GRAY CASUALTY & SURETY COMPANY SEAL

THE CITY OF DALTON "THE CARPET CAPITAL OF THE WORLD"

THE GRAY INSURANCE COMPANY
THE GRAY CASUALTY & SURETY COMPANY

GENERAL POWER OF ATTORNEY

Bond Number: NA **Principal:** Wilson Construction Management, LLC

Project: PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

KNOW ALL BY THESE PRESENTS, THAT The Gray Insurance Company and The Gray Casualty & Surety Company, corporations duly organized and existing under the laws of Louisiana, and having their principal offices in Metairie, Louisiana, do hereby make, constitute, and appoint: **Kevin Wojtowicz, Jessica Reno, Edwin T. Collins, IV, Devin Phillips, Christian Collins, and Laura D. Mosholder of St. Petersburg, Florida jointly and severally** on behalf of each of the Companies named above its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its deed, bonds, or other writings obligatory in the nature of a bond, as surety, contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the amount of
$25,000,000.00.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both The Gray Insurance Company and The Gray Casualty & Surety Company at meetings duly called and held on the 26th day of June, 2003.

"RESOLVED, that the President, Executive Vice President, any Vice President, or the Secretary be and each or any of them hereby is authorized to execute a power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings, and all contracts of surety, and that each or any of them is hereby authorized to attest to the execution of such Power of Attorney, and to attach the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be binding upon the Company now and in the future when so affixed with regard to any bond, undertaking or contract of surety to which it is attached.

IN WITNESS WHEREOF, The Gray Insurance Company and The Gray Casualty & Surety Company have caused their official seals to be hereinto affixed, and these presents to be signed by their authorized officers this 4th day of November, 2022.

THE GRAY INSURANCE COMPANY SEAL

By: Michael T. Gray
President
The Gray Insurance Company

Cullen S. Piske
President
The Gray Casualty & Surety Company

THE GRAY CASUALTY & SURETY COMPANY SEAL

State of Louisiana
ss:
Parish of Jefferson

On this 4th day of November, 2022, before me, a Notary Public, personally appeared Michael T. Gray, President of The Gray Insurance Company, and Cullen S. Piske, President of The Gray Casualty & Surety Company, personally known to me, being duly sworn, acknowledged that they signed the above Power of Attorney and affixed the seals of the companies as officers of, and acknowledged said instrument to be the voluntary act and deed, of their companies.

Leigh Anne Henican
Notary Public
Notary ID No. 92653
Orleans Parish, Louisiana

Leigh Anne Henican
Notary Public, Parish of Orleans State of Louisiana
My Commission is for Life

I, Mark S. Manguno, Secretary of The Gray Insurance Company, do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 08 day of March , 2024 .

I, Leigh Anne Henican, Secretary of The Gray Casualty & Surety Company , do hereby certify that the above and forgoing is a true and correct copy of a Power of Attorney given by the companies, which is still in full force and effect. IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Company this 08 day of March , 2024 .

THE GRAY INSURANCE COMPANY SEAL

THE GRAY CASUALTY & SURETY COMPANY SEAL

BID PROPOSAL

Place Norcross, Ga
Date 3/8/2024

Proposal of Wilson Construction Management, LLC *(hereinafter called "Bidder")* a contractor organized and existing under the laws of the City of Norcross State of Georgia and County of Gwinnett, * an individual, a corporation, or a partnership doing business as Wilson Construction Management.

TO: CITY OF DALTON, GEORGIA
(Hereinafter called "Owner")

Gentlemen:

The Bidder in compliance with your invitation for bids for the construction of the

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER
having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the contract documents, within the time set forth herein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under this contract, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within 365 Calendar Days following "Notice to Proceed". Bidders must agree to pay liquidated damages in accordance with the schedule specified in Section 108.08 of the latest Georgia D.O.T. Specifications for each consecutive calendar day thereafter as hereinafter provided in the General Conditions under "Time of Completion and Liquidated Damages."

Bidder acknowledges receipt of the following addenda:

#1

*Strike out inapplicable terms

BID PROPOSAL
(Continued)

Amount shall be shown in figures.

The prices submitted shall include all labor, materials, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

The undersigned further agrees that, in case of failure on his part to execute said contract and bond within ten *(10)* days after the award thereof, the check or bond accompanying his bid and the money payable thereon shall become the property of the Owner; otherwise, the check or bond accompanying this proposal shall be returned to the Bidder.

The Bidder declares that he understands that the quantities shown on the proposal are subject to adjustment by either increase or decrease, and that should the quantities of any of the items of work be increased, the undersigned proposes to do the additional work at the unit prices stated herein; and should the quantities be decreased, he also understands that payment will be made on actual quantities at the unit price bid and will make no claim for anticipated profits for any decrease in the quantities and that actual quantities will be determined upon completion of work, at which time adjustment will be made to the contract amount by direct increase or decrease.

Attached hereto is a bid bond or certified check on the _____ of _____ in the amount of _____ according to conditions under "Information for Bidders" and the provisions therein.

The full name and residence of persons or parties interested in the foregoing bids, as principals, are named as follows:

Jeremiah Wilson 4251 Quail Ridge Way Norcross, Ga 30092

Nathaniel Wilson 148 Montvale Drive Hoschton, Ga 30548

BID PROPOSAL
(Continued)

Dated at:

6365 McDonough Drive Norcross, Ga 30093

The 8th day of March, 2024

WILSON CONSTRUCTION MANAGEMENT LLC LIMITED LIABILITY COMPANY SEAL 08/23/2019 GEORGIA

DANIEL MILLER
Principal

By _____ *SEAL*

CONSTRUCTION PAYMENT BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR *(Name and Address)*:

_____
_____
_____

OWNER *(Name and Address)*:

CITY OF DALTON
P.O. BOX 1205
DALTON, GEORGIA 30722

CONSTRUCTION CONTRACT:
Date: _____
Amount: _____

Description *(Name and location)*:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER
SURETY *(Name and Principal place of Business)*:

_____
_____
_____

BOND:
Date: _____
Amount: _____
Bond Number: _____

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner and for the use and protection of all subcontractors and persons supplying labor, materials, machinery, and

CONSTRUCTION PAYMENT BOND
(Continued)

equipment in the prosecution of the Work involved in this Construction Contract.

2. With respect to the Owner, this obligation shall be null and void if the Contractor:
   2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

   2.2. Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity whose claim, demand, lien or suit is for payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety *(at the address described in Paragraph 11)* of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligations to Claimant unless the Claimant has substantially complied with the requirements of O.C.G.A. 36-82-104 by giving the notices provided for therein. Each Claimant failing to substantially comply with said Code Section shall be deemed to have waived the protection of the payment bond. No Claimant shall file an action for payment against the Owner, Contractor or Surety, except in accordance with this section.
   4.1. Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety *(at the address described in Paragraph 12)* and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
   4.2. Claimants who do not have a direct contract with the Contractor:
      1. Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed: and
      2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
      3. Not having been paid within the above 30 days, have sent a written notice

CONSTRUCTION PAYMENT BOND
(Continued)

to the Surety *(at the address described in Paragraph 12)* and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and that basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

9. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

11. No suit or action on this bond shall be instituted by a Claimant after expiration of one *(1)* year from the completion of the contract and the acceptance of the work by the public entity responsible therefor.

CONSTRUCTION PAYMENT BOND
(Continued)

12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on this Bond.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in the Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the
Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3. Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

CONTRACTOR AS PRINCIPAL	SURETY
Company: _____	Company: _____
_____ *(Corp. Seal)*	_____ *(Corp. Seal)*
Signature: _____	Signature: _____
Name and Title: _____	Name and Title: _____

CONSTRUCTION PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR *(Name and Address)*:

_____
_____
_____

OWNER *(Name and Address)*:

CITY OF DALTON
P.O. BOX 1205
DALTON, GEORGIA 30722

CONSTRUCTION CONTRACT:
Date: _____
Amount: _____
Description *(Name and location)*:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTX/CUYLER
SURETY *(Name and Principal place of Business)*:

_____
_____
_____

BOND:
Date: _____
Amount: _____
Bond number: _____

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor

CONSTRUCTION PERFORMANCE BOND
(Continued)

shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.

3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:
   3.1. The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and
   3.2. The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and
   3.3. The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
   4.1. Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or
   4.2. Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or
   4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or
   4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
      1. After investigation, determine the amount for which it may be liable to the

CONSTRUCTION PERFORMANCE BOND
(Continued)

Owner and, as soon as practicable after the amount is determined, tender payment therefore to the Owner; or

2. Deny liability in whole or in part and notify the Owner citing reasons therefor.

5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2. Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time to the Construction Contract or to related subcontracts, purchase orders and other obligations.

CONSTRUCTION PERFORMANCE BOND
(Continued)

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.
    - 12.1. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
    - 12.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
    - 12.3. Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.
    - 12.4. Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

CONTRACTOR AS PRINCIPAL	SURETY
Company: _____	Company: _____
_____ *(Corp. Seal)*	_____ *(Corp. Seal)*
Signature: _____	Signature: _____
Name and Title: _____	Name and Title: _____

CONTRACT

THIS AGREEMENT made this the 30th day of APRIL, 2024 by and between the CITY OF DALTON, GEORGIA, hereinafter called "Owner", and Wilson Construction Management a contractor doing business as an individual, a partnership, or a corporation* of the City of Norcross, County of Gwinnett, and State of Georgia hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Owner, the Contractor hereby agrees to commence and complete the construction of the project entitled:

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT
DALTON PROJECT NO. PW-2024-PENTZ/CUYLER

hereinafter called the "Project", for the sum of $18,196,318.00 Dollars () and all extra work in connection therewith, under the terms as stated in the Contract Documents, and at his *(its or their)* own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the proposal, the General Conditions of the Contract, the specifications and contract documents therefore as prepared by the Owner and as enumerated in the General Conditions, all of which are made a part hereof and collectively constitute the Contract.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within 365 Calendar Days of receiving "Notice to Proceed". The Contractor further agrees to pay liquidated damages in accordance with the schedule specified in Section 108.08 of the latest Georgia D.O.T. Specifications for each consecutive calendar day thereafter as hereinafter provided in the General Conditions under "Time of Completion and Liquidated Damages."

*Strike out inapplicable terms.

CONTRACT
(Continued)

The Owner agrees to pay the Contractor in current funds for the performance of the contract, subject to additions and deductions as provided in the General Conditions of the Contract, and to make payments on account thereof as provided in "Payments to Contractor," of the General Conditions.

IN WITNESS WHEREOF, the parties to those presents have executed this contract in five *(5)* counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

ATTEST:

CITY OF DALTON, GEORGIA

_____
City Clerk

By: _____ *SEAL*

_____
Witness

_____
Title

ATTEST:

_____
Secretary

By: _____ *SEAL*

_____
Witness

V.P.
_____
Title

CONSTRUCTION MANAGEMENT LLC ★ WILSON
LIMITED LIABILITY COMPANY
SEAL
08/23/2019
GEORGIA

Secretary of Owner should attest. If Contractor is corporation, secretary should attest.

Give proper title of each person executing contract.

CONTRACTOR AFFIDAVIT AND AGREEMENT

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with City of Dalton has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with City of Dalton, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the City of Dalton at the time the subcontractor(s) is retained to perform such service.

The undersigned Contractor is using and will continue to use the federal work authorization program throughout the contract period.

1556715
EEV/Basic Pilot Program* User Identification Number

3/8/2024
BY: Authorized Officer or Agent (Contractor Name) — Date

Vice President
Title of Authorized Officer or Agent of Contractor

DANIEL MILLER
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE 8th DAY OF MARCH, 2024

Haleigh Youmans
Notary Public

My Commission Expires: 10/25/2026

HALEIGH YOUMANS NOTARY PUBLIC COMMISSION EXPIRES OCTOBER 25, 2026 HENRY COUNTY, GEORGIA

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

REVISED BID PROPOSAL FORM 2.24.24-REPLACE ORIGINAL BID PROPOSAL FORM IN CONTRACT DOCUMENTS

REVISED Bid Proposal Form - Dalton Project No. PW-2024-PENTZ/CUYLER

Georgia OPB Eligible Items (INODIC)

ITEM NUMBER	QTY	UNIT	UNIT PRICE	ITEM DESCRIPTION	TOTAL
150-1000	1	LS	$ 979,505.00	TRAFFIC CONTROL	$ 979,505.00
163-0240	1	LS	$ 25,332.00	TEMPORARY EROSION AND SEDIMENT CONTROL	$ 25,332.00
207-0203	3750	CY	$ 55.00	FOUND BKFILL MATL, TP II	$ 206,250.00
210-0100	1	LS	$ 2,596,919.00	GRADING COMPLETE	$ 2,596,919.00
213-1000	300	CY	$ 107.00	BORROW MATL (LOCAL SAND OR SAND-GRAVEL BACKFILL)	$ 32,100.00
310-1101	500	TN	$ 91.50	GR AGGR BASE CRS, INCL MATL	$ 45,750.00
402-1801	50	TN	$ 200.00	RECYCLED ASPH CONC PATCHING, INCL BITUM MATL	$ 10,000.00
402-1812	300	TN	$ 210.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	$ 63,000.00
402-3130	1050	TN	$ 170.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	$ 178,500.00
413-0750	1300	GL	$ 8.00	TACK COAT	$ 10,400.00
432-5010	6700	SY	$ 8.00	MILL ASPH CONC PVMT, VARIABLE DEPTH	$ 53,600.00
441-0104	2600	SY	$ 81.50	CONC SIDEWALK, 4 IN (CLASS A CONC WITH ALL WHITE SAND)	$ 211,900.00
441-5002	50	LF	$ 46.00	CONCRETE HEADER CURB, 6 IN, TP 2 (CLASS A CONC WITH ALL WHITE SAND)	$ 2,300.00
441-6012	3100	LF	$ 35.00	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2 (CLASS A CONC WITH ALL WHITE SAND)	$ 108,500.00
500-9999	775	CY	$ 250.00	CLASS B CONC, BASE OR PVMT WIDENING	$ 193,750.00
550-1180	781	LF	$ 123.00	STORM DRAIN PIPE, 18 IN, H 1-10	$ 96,063.00
550-1240	294	LF	$ 136.00	STORM DRAIN PIPE, 24 IN, H 1-10	$ 39,984.00
550-1360	291	LF	$ 310.00	STORM DRAIN PIPE, 36 IN, H 1-10	$ 90,210.00
550-1480	257	LF	$ 406.00	STORM DRAIN PIPE, 48 IN, H 1-10	$ 104,342.00
573-1006	50	LF	$ 100.00	UNDDR PIPE ONLY, 6 IN	$ 5,000.00
600-0001	75	CY	$ 500.00	FLOWABLE FILL	$ 37,500.00
611-3030	5	EA	$ 2,489.00	RECONSTR STORM SEW MANHOLE, TYPE 1	$ 12,445.00
611-8050	2	EA	$ 3,790.00	ADJUST MANHOLE TO GRADE	$ 7,580.00
611-8120	32	EA	$ 1,300.00	ADJUST WATER METER BOX TO GRADE (INCL NEW METER BOX AND COVER)	$ 41,600.00
653-0095	3	EA	$ 293.00	THERMOPLASTIC PVMT MARKING, HANDICAP SYMBOL	$ 879.00
653-0120	3	EA	$ 149.00	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	$ 447.00
653-0130	2	EA	$ 222.00	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	$ 444.00
653-1704	150	LF	$ 7.00	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	$ 1,050.00

653-2501	1	LM	$ 4,805.00	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	$ 4,805.00
ITEM NUMBER	QTY	UNIT	UNIT PRICE	ITEM DESCRIPTION	TOTAL
653-2502	1	LM	$ 4,594.00	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	$ 4,594.00
668-2100	16	EA	$ 6,479.00	DROP INLET, GP 1	$ 103,664.00
668-4300	8	EA	$ 8,619.00	STORM SEWER MANHOLE, TP 1	$ 68,952.00
668-4311	12	LF	$ 300.00	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 1	$ 3,600.00
900-0039	9500	SF	$ 15.00	BRICK PAVERS	$ 142,500.00
				Subtotal (INODIC Eligible Items)	$ 5,483,465.00

Georgia OPB Non-Eligible Items (Local Funding)

ITEM NUMBER	QTY	UNIT	UNIT PRICE	ITEM DESCRIPTION	TOTAL
441-4030	850	SY	$ 150.00	CONC VALLEY GUTTER, 8 IN (CLASS A CONC WITH ALL WHITE SAND)	$ 127,500.00
500-3800	23	EA	$ 1,200.00	CLASS A CONCRETE WITH ALL WHITE SAND, INCL REINF STEEL (LIGHT POLE FOUNDATIONS)	$ 27,600.00
550-1361	227	LF	$ 340.00	STORM DRAIN PIPE, 36 IN, H 10-15	$ 77,180.00
550-1481	132	LF	$ 450.00	STORM DRAIN PIPE, 48 IN, H 10-15	$ 59,400.00
550-2999	255	LF	$ 576.00	PIPE ARCH OR ELLIPTICAL - 65 IN X 40 IN, H 1-10	$ 146,880.00
611-3010	1	EA	$ 5,338.00	RECONSTR DROP INLET, GROUP 1	$ 5,338.00
611-8140	3	EA	$ 1,909.00	ADJUST WATER VALVE BOX TO GRADE	$ 5,727.00
611-8150	5	EA	$ 3,000.00	ADJUST SEWER LATERAL CLEANOUT TO GRADE (INCL NEW BRASS CAP)	$ 15,000.00
611-8160	2	EA	$ 2,500.00	ADJUST GAS VALVE BOX TO GRADE	$ 5,000.00
615-1000	50	LF	$ 1,500.00	UTILITY CONFLICT ADJUSTMENT - ENCASEMENT PIPE	$ 75,000.00
636-1033	5	SF	$ 25.00	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	$ 125.00
636-2070	42	LF	$ 12.50	GALV STEEL POSTS, TP 7	$ 525.00
639-3004	3	EA	$ 5,400.00	STEEL STRAIN POLE, TP IV (FOUNDATION ONLY)	$ 16,200.00
639-3014	2	EA	$ 5,400.00	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE (FOUNDATION ONLY)	$ 10,800.00
653-0110	1	EA	$ 116.00	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	$ 116.00
653-1804	600	LF	$ 3.50	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	$ 2,100.00
653-3501	50	GLF	$ 2.00	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	$ 100.00
660-1625	50	LF	$ 400.00	UTILITY CONFLICT ADJUSTMENT - SEWER MAIN, DUCTILE IRON, 8 IN	$ 20,000.00
660-2050	50	LF	$ 500.00	UTILITY CONFLICT ADJUSTMENT - SEWER LATERAL	$ 25,000.00

REVISED BID PROPOSAL FORM 2.24.24-REPLACE ORIGINAL BID PROPOSAL FORM IN CONTRACT DOCUMENTS

ITEM NUMBER	QTY	UNIT	UNIT PRICE	ITEM DESCRIPTION	TOTAL
668-4312	11	LF	$ 500.00	STORM SEWER MANHOLE, TP 1, ADDL DEPTH, CL 2	$ 5,500.00
668-4400	7	EA	$ 20,797.00	STORM SEWER MANHOLE, TP 2	$ 145,579.00
668-4411	5	LF	$ 600.00	STORM SEWER MANHOLE, TP 2, ADDL DEPTH, CL 1	$ 3,000.00
668-4412	12	LF	$ 700.00	STORM SEWER MANHOLE, TP 2, ADDL DEPTH, CL 2	$ 8,400.00
670-1010	150	LF	$ 500.00	UTILITY CONFLICT ADJUSTMENT - WATER MAIN	$ 75,000.00
670-5000	150	LF	$ 400.00	UTILITY CONFLICT ADJUSTMENT - WATER SERVICE LINE	$ 60,000.00
682-2120	8	EA	$ 800.00	PULL BOX, TYPE 2	$ 6,400.00
682-6232	2600	LF	$ 47.00	DOUBLE CONDUIT, NONMETL, TP 3, 1.5 IN	$ 122,200.00
682-6233	300	LF	$ 20.00	TRIPLE CONDUIT, NONMETL, TP 3, 2 IN	$ 6,000.00
682-7065	12750	LF	$ 50.00	CONDUIT DUCT BANK, 4 IN	$ 637,500.00
682-7066	6000	LF	$ 50.00	CONDUIT DUCT BANK, 6 IN	$ 300,000.00
682-7070	600	LF	$ 165.00	CONDUIT DUCT BANK (DIRECTIONAL BORE INSTALLATION), 4 IN	$ 99,000.00
682-7071	200	LF	$ 148.00	CONDUIT DUCT BANK (DIRECTIONAL BORE INSTALLATION), 6 IN	$ 29,600.00
682-9027	31	EA	$ 2,800.00	COMMUNICATIONS BOX	$ 86,800.00
682-9950	110	LF	$ 40.00	DIRECTIONAL BORE, 7 IN	$ 4,400.00
700-9300	150	SY	$ 22.50	SOD	$ 3,375.00
702-0030	33	EA	$ 510.00	ACER RUBRUM - 'JFS-KW78' (ARMSTRONG GOLD® MAPLE), 2 IN CAL	$ 16,830.00
702-0120	26	EA	$ 884.00	CARPINUS CAROLINIANA - 'CCMTF1' (COLLYNAIR® AMERICAN HORNBEAM), 2 IN CAL	$ 22,984.00
702-0290	14	EA	$ 1,190.00	GINKGO BILOBA - 'JFS-UGA2' TM (GOLDEN COLONNADE® MAIDENHAIR TREE), 2 IN CAL	$ 16,660.00
702-1081	7	EA	$ 561.00	ULMUS AMERICANA - 'PRINCETON' (PRINCETON AMERICAN ELM), 2 IN CAL	$ 3,927.00
703-4200	68	EA	$ 6,449.00	TREE WELL	$ 438,532.00
900-0040	150	SF	$ 10.50	BRICK PAVERS (RESET)	$ 1,575.00
				Subtotal (Local Funding Items)	$ 2,712,853.00
				Total Bid Proposal (INODIC + Local)	$ 8,196,318.00

Bidding Company Name: WILSON CONSTRUCTION MANAGEMENT, LCC

Authorized Bidding Rep. Signature & Title _____

SECTION 0300 - GENERAL CONDITIONS

0301 CONTRACT AND CONTRACT DOCUMENTS

The Contract Documents as hereinafter enumerated in Paragraph 2 of the General Conditions, shall form this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were fully set forth. 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 effect, limit or cast light on the interpretation of the provisions to which they refer.

0302 DEFINITIONS

The following terms as used in this contract are respectively defined as follows:

0302.01 Contractor - A person, firm or corporation with whom the contract is made by the Owner.

0302.02 Contract Documents - The Contract Documents are composed of the Advertisement for Bids; Instructions to Bidders; Bid Package; Form of Proposal, General Conditions, Supplementary Conditions, Special Conditions, Detail Specifications, Form of Contract, Form of Bond*(s)*, Addenda and the drawings including all changes incorporated herein before their execution.

0302.03 Project Representative - Refers to the authorized representative of the Owner, who is assigned to the site or any part thereof.

0302.04 Owner - The party of the First Part in the accompanying Contract, and meaning the CITY OF DALTON, GEORGIA.

0302.05 Subcontractor - A person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with the contractor for performance of a part of the work at the site.

0302.06 Work on *(at)* the Project - Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any Subcontractor.

0303 CORRELATION AND INTENT OF DOCUMENTS

The contract documents are complementary, and what is called for by any one shall be as binding as if called for by all.

0303.01 The intent of the documents is to describe all construction entailed in this project. The contractor will furnish all labor and materials, equipment, transportation, tools and appurtenances such as may be reasonably required under the terms of the contract to make each part of the work complete.

0303.02 The Drawings are intended to conform and agree with the Specifications; if, however, discrepancies occur, the Owner will decide which shall govern. Special specifications stated on the Drawings govern that particular piece of construction and have equal weight and importance as the printed specifications. In the event of any discrepancies between the Drawings and the figures written thereon, the figures are to be taken as correct.

0304 MATERIALS, SERVICES AND FACILITIES

0304.01 It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the work within the specified time. It is further understood that in providing materials, labor, tools, equipment, water, light, power, superintendence, or any other expense associated with the Contract the Contractor may not take advantage of the City's tax exempt status.

0304.02 Any work necessary to be performed by the Contractor to complete the project on time after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to the Owner.

0305 CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims and/or encumbrances.

0306 MATERIALS FURNISHED BY THE CONTRACTOR

All materials used in the work including equipment shall be new and unused materials of a reputable U.S. Manufacturer conforming to the applicable requirements of the Specifications, and no materials shall be used in the work until they have been approved by the Owner. The Contractor shall furnish all materials necessary except as otherwise specifically noted or specified.

0307 INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

0308 PATENTS

0308.01 The Contractor shall hold and save the Owner 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 the Owner, unless otherwise specifically stipulated in the Contract Documents.

0308.02 License and/or Royalty Fees for the use of a process which is authorized by the Owner of the project must be reasonable, and paid to the holder of the patent, or his authorized licensee, direct by the Owner and not by or through the Contractor.

0308.03 If the Contractor uses any design, device or materials covered by letters, patent or copyright, he shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. It is mutually agreed and understood, that, without exception, arising from the use of such design, device, or materials or in any way involved in the work, the Contractor and/or his Sureties shall indemnify and save harmless the Owner of the project from all claims for infringement by the reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract and shall indemnify the Owner for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

0309 SURVEYS, PERMITS AND REGULATIONS

0309.01 Unless otherwise expressly provided for in the Specifications, the Owner will furnish to the Contractor any control alignment and bench mark data from previous engineering surveys.

0309.02 The Contractor shall procure and pay all permits, licenses and approvals necessary for the execution of his contract. The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to performance of the work, the protection of adjacent property, and the maintenance of passageways, guard fences or other protective facilities.

0310 CONTRACTOR'S OBLIGATIONS

0310.01 The Contractor shall and will, 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 plans and drawings covered by this contract, any and all supplemental plans and drawings and in accordance with the directions of the Owner as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. He 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 of their improper construction, maintenance or operation.

0310.02 The Contractor shall observe, comply with and be subject to all terms, conditions, requirements, and limitations of the Contract and specifications and shall do, carry on, and complete the entire work to the satisfaction of the Owner.

0310.03 Contractor shall be required to submit a construction schedule, for all stages of the project through completion to the Owner prior to beginning construction services specified within awarded contract.

0311 CONTRACTOR'S RESPONSIBILITY

The Contractor shall be responsible for all material and work until they are finally accepted by the Owner and shall repair at his own expense any damage that they sustain before their final acceptance. The Contractor shall be responsible for all damages caused by him of whatever nature and must settle all claims arising from such damage without cost to the Owner; he shall act as defendant in, and bear the expense of each and every suit of any and every nature which may be brought against him or the Owner, by reason of, or connected with the work under the Contract. Should any claim arise, the Owner may hold back sufficient money to meet said claims or until the Contractor has satisfied the Owner that all claims against him as the result of his work have been adjusted. He must also show that there are no claims or liens whatsoever outstanding at the completion of his contract before final payment is made. The contractor is additionally responsible for acting in accordance with its obligations to the Owner in adhering to the Terms of its grant program as laid out in Section 0500 and its attachments.

0312 WEATHER CONDITIONS

In the event of temporary suspension of work, or during inclement weather, or

whenever the Owner shall direct, the Contractor will, and will cause his subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Owner, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors so to protect his work, such materials shall be removed and replaced at the expense of the Contractor.

0313 SAFETY PROVISIONS

0313.01 The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 *(PL 91-596)* and under Sec.107 of the Contract Work Hours and Safety Standards Act *(PL 91-54).*

0313.02 The Contractor 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 of their improper construction, maintenance and operation.

0313.03 The Contractor shall employ, when necessary, watchmen on the work and shall, when necessary, erect and maintain such strong and suitable barriers and such light as will effectually prevent the happening of any accident to health, limb or property.

0314 SANITARY PROVISIONS

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the regulations of the State Board of Health and all local ordinances. No nuisance will be permitted.

0315 PUBLIC CONVENIENCE AND SAFETY

Materials stored at the site of the work shall be so placed and the work shall, at all times, be so conducted as to cause no greater obstruction to traffic than is considered permissible by the Owner. No roadway shall be closed or opened except by express permission of the Owner and the Contractor's proper notification of local fire and police departments. Precaution shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery, equipment and other hazards shall be guarded in accordance with the safety provisions of the manual of Accident Prevention in Construction, published by the Associated General Contractors of America to extent that such provisions are not in contravention of applicable laws.

0316 PROTECTION OF WORK AND PROPERTY - EMERGENCY

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the contract or by the Owner, or his duly authorized representative.

0316.01 In case of an emergency which threatens loss or injury of property, and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Owner in a diligent manner. He shall notify the Owner immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Owner for approval.

0316.02 Where the Contractor has not taken action but has notified the Owner of an emergency threatening injury to persons or damage to the work or any adjoining property, he shall act as instructed or authorized by the Owner.

0316.03 The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 0327 of the General Conditions.

0317 INSPECTION

The authorized representatives and agents of the Owner shall be permitted to observe all work, materials, payrolls, records of personnel, invoices of materials and other relevant data and records.

0318 REPORTS, RECORDS AND DATA

The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract.

0319 SUPERINTENDENCE BY CONTRACTOR

At the site of the work, the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Owner and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

0320 COMPETENT LABOR

0320.01 The Contractor shall employ only competent and skilled workers on the project. The Contractor shall have a competent superintendent or foreman

present at all times when the work is in progress and with authority to receive orders and execute the work.

0320.02 The Contractor shall, upon demand from the Owner, immediately remove any superintendent, foreman or worker whom the Owner may consider incompetent or undesirable.

0321 CONSTRUCTION EQUIPMENT

The Contractor shall provide all necessary equipment in good repair for the expeditious construction of the work. Any equipment not adapted for the work, in such repair as to be dangerous to the project or workers, shall not be used.

0322 CHANGES IN THE WORK

0322.01 Without invalidating the Agreement, the Owner may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, the Contractor will proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Paragraph 0323. A Change Order signed by the Contractor indicates his agreement therewith.

0322.02 The Owner may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If the Contractor believes that any Field Order authorized by the Owner entitles him to an increase in the Contract Price or extension of Contract Time, he shall inform the Owner in writing of the amount of increased price or time associated with the Field Order, and he shall include reference to appropriate contract documents supporting the basis for the claim, and he shall not proceed with the work in question until a written decision has been rendered by the Owner.

0322.03 Any changes or additional work performed by the Contractor without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency.

0322.04 It is the Contractor's responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. The Contractor will furnish proof of such adjustment to the Owner.

0322.05 The term Change Order is defined as a written order to the Contractor signed by the Owner which authorizes a change in the work or the contract price or the contract time issued after execution of the Agreement.

0322.06 The Contract Price constitutes the total compensation payable to the Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the Contractor shall be at his expense without changing the Contract Price, except where authorized by Change Order.

0323 CHANGE IN CONTRACT PRICE

0323.01 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

0323.01.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.

0323.01.2 By mutual acceptance of a lump sum *(which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 0323.04.2.1).*

0323.01.3 On the basis of the Cost of the Work *(determined as provided in Paragraphs 0323.04 and 0323.05)* plus a Contractor's Fee for overhead and profit *(determined as provided in Paragraphs 0323.4 and 0323.05).*

0323.02 The term Cost of the Work means the sum of all costs necessarily incurred and paid by the Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in Paragraph 0323.03.

0323.02.1 Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen

at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by Owner.

0323.02.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith.

0323.02.3 Payments made by Contractor to the Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such Bids to Owner who will then determine which Bids will be accepted.

0323.02.4 Costs of special consultants *(including, but not limited to, engineers, architects, testing laboratories, surveyors, lawyers, and accountants)* employed for services specifically related to the Work.

0323.02.5 Supplemental costs including the following:

0323.02.5.1 The proportion of necessary transportation, traveling and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

0323.02.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of Contractor.

0323.02.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner and the costs of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

0323.02.5.4 Sales, use or similar taxes related to the Work, and for which Contractor is liable, imposed by any governmental authority.

0323.02.5.5 Deposits lost for causes other than Contractor's negligence, royalty payments and fees for permits and licenses. Costs for permits and licenses must be shown as a separate item.

0323.02.5.6 Losses, damages and expenses, not compensated by insurance or otherwise, sustained by Contractor in connection with the execution of, and to, the Work, provided they have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's Fee.

0323.02.5.7 The cost of utilities, fuel and sanitary facilities at the site.

0323.02.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

0323.02.5.9 Cost of premiums for additional Bonds and Insurance required because of changes in the Work.

0323.03 The term Cost of the Work shall not include any of the following:

0323.03.1 Payroll costs and other compensation of Contractor's officers, executives, principals *(of partnership and sole proprietorships)*, general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by Contractor whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the schedule referred to in subparagraph 0323.02.1 - all of which are to be considered administrative costs covered by the Contractor's Fee.

0323.03.2 Expenses of Contractor's principal and branch offices other than his office at the site.

0323.03.3 Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

0323.03.4 Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied and making good any damage to property.

0323.03.5 Other overhead or general expense costs of any kind and the costs of

any item not specifically and expressly included in Paragraph 0323.04.

0323.04 The Contractor's Fee which shall be allowed to Contractor for his overhead and profit shall be determined as follows:

0323.04.1 a mutually acceptable firm fixed price; or if none can be agreed upon.

0323.04.2 a fee based on the following percentages of the various portions of the Cost of the Work.

0323.04.2.1 for costs incurred under paragraphs 0323.02.1 and 0323.02.2, the Contractor's Fee shall be fifteen percent.

0323.04.2.2 for costs incurred under paragraph 0323.02.3, the Contractor's Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to Contractor on account of overhead and profit of all Subcontractors shall be fifteen percent:

0323.04.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 0323.02.4, 0323.02.5, and 0323.03;

0323.04.2.4 the amount of credit to be allowed by Contractor to Owner for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in Contractor's Fee by an amount equal to ten percent of the net decrease; and

0323.04.2.5 when both additions and credits are involved in any one change, the adjustment in Contractor's Fee shall be computed on the basis of the net change in accordance with paragraphs 0323.04.2.1 through 0323.04.2.4, inclusive.

0323.05 Whenever the cost of any Work is to be determined pursuant to Paragraph 0323.02 or 0323.03. Contractor will submit in form acceptable to Owner an itemized cost breakdown together with supporting data.

0324 CHANGE OF THE CONTRACT TIME

The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to Owner within ten days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless Owner allows an additional period of time to ascertain more accurate data. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

0324.01 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if he makes a claim therefor as provided in Paragraph 0324. Such delays shall include, but not be restricted to, acts or neglect by any separate contractor employed by Owner, fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

0324.02 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Paragraph 0324 shall not exclude recovery for damages *(including compensation for additional professional services)* for delay by either party.

0325 CORRECTION OF WORK

All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the review of the Owner who shall be the final judge of the quality and suitability of the work, material, processes of manufacture and methods of construction for the purpose for which they are used. Should they fail too meet his approval, they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the Engineer, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of the Engineer shall be equitable. It is not intended that the Engineer should be liable for the Contractor's performance of the work nor for safety during construction.

0326 EXISTING UNDERGROUND UTILITIES AND STRUCTURES

0326.01 The Owners and/or operators of private or public utilities shall have access to such utility at all times, for the installation, maintenance, adjustment, repair and operation of said utility. No extra compensation will be allowed because of the delay or interference caused by such work.

0326.02 Wherever existing utilities are encountered which conflict in actual position and location with the proposed work, the Contractor shall promptly notify the Owner for resolution of the conflict.

0326.03 The Contractor shall be solely and directly responsible to the Owner and/or other operator of such utility properties for any damage, injury, expense, loss, inconvenience or delay, or for any suits, actions, claims of any character brought on account of any injuries or damages which may result from the carrying out of the work.

0327 SUBSURFACE CONDITIONS FOUND DIFFERENT

Should the Contractor encounter sub-surface and/or latent conditions at the site materially differing from those shown on the plans or indicated in the specifications, he shall immediately give notice to the Owner of such conditions before they are disturbed. The Owner will thereupon promptly investigate the conditions, and if he finds that they materially differ from those shown on the plans or indicated in the specifications, he will at once make such changes in the plans and/or specifications as he may find necessary, any increase or decrease of cost resulting from such changes to be adjusted in the manner provided in Paragraph 0323 of the General Conditions.

0328 CLAIMS FOR EXTRA WORK

No claim for extra work or cost shall be allowed unless the same was one in pursuance of a written order of the Owner and approved by the Owner, as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. When work is performed under the terms of Subparagraph 0322 of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.

0329 RIGHT OF THE OWNER TO TERMINATE CONTRACT

In the event that any of the provisions of this contract are violated by the Contractor or by any of his Subcontractors, the Owner may serve written notice upon the Contractor and the surety of its intention to terminate the contract, such notices to contain the reasons for such intention to terminate the contract, and unless within ten *(10)* days after the serving of such notice upon the Contractor such violation or delay shall cease and satisfactory arrangement of correction be made, the contract shall, upon the expiration of said ten *(10)* days, cease and terminate. In the event of any such termination the Owner shall immediately serve notice thereof upon the Surety and the Contractor and the Surety shall have the right to take over and perform the contract; provided, however, that if the Surety does not commence performance thereof within ten *(10)* days from the date of the mailing to such Surety of notice of termination, the Owner may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned the Owner thereby, and in such event the Owner may take possession of and utilize in completing the work, such materials, appliances and plant as may be on the site of the work and necessary therefor.

0330 CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in form satisfactory to the Owner showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The Contractor shall also furnish on forms to be supplied by the Owner, *(a)* a detailed estimate giving a complete breakdown of the contract price and *(b)* periodic itemized estimate of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

0331 PAYMENTS TO CONTRACTORS

0331.01 The amount of Retainage Schedule shall be as follows:

0331.01.1 • Five (5%) percent of each progress payment shall be withheld as retainage for the life of the project, including change orders and other authorized additions provided in the Contract is due;

0331.01.2 • When the Work is substantially complete (operational or beneficial occupancy) and City determines the Work to be reasonably acceptable, the Contractor shall submit an invoice or other documents as may be required and receive payment thereof within thirty (30) days. If there are any remaining incomplete minor items, an amount equal to two hundred (200%) percent of the value of each item, as determined by City, shall be withheld until such items are completed.

0331.01.3 • This Contract is governed by O.C.G.A. § 13-10-2 through O.C.G.A § 13-10-80, which requires that the Contractor, within ten (10) days of receipt of retainage from City, pass through payments to Subcontractors and reduce each Subcontractor's retainage accordingly. The Code provision also requires Subcontractors to pass through payments to Lower Tier Subcontractors and reduce each lower tier contractor's retainage. Therefore, City, in its discretion, may require the Contractor to submit satisfactory evidence that all payrolls, material bills, or other indebtedness connected with the Work have been paid before making any payment.

0331.01.4 • Within sixty (60) days after the Work is fully completed and accepted by City, 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 breach of contract, violation of state or federal law or for compensation such claims 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 City.

0331.02 Where a project is under the jurisdiction of a Force Account Agreement between the Owner and the Georgia Department of Transportation, the Contractor shall maintain a *daily* report of the amount of completed work as shown in the bid proposal. A copy of the accepted report appears in Appendix A, if applicable, at the end of this section and may be reproduced for use on this project. The Contractor's representative shall certify by signature that the report is accurate on behalf of the Contractor for the Owner *(shown as "Utility" on the report)*. The Project Engineer representing the Georgia Department of Transportation shall certify by signature that the report is accurate for the "State". A copy of each days report properly certified as required by this part shall accompany each progress payment request by the Contractor. The quantity of work completed shown on the progress payment request *must* be supported by an equal quantity shown on the daily report for that progress payment period. Payment requested for quantities of work not supported by a properly certified daily report*(s)* may *not* be recommended for payment by the Owner.

0331.03 In preparing estimates, the material delivered on the site and preparatory work done may be taken into consideration. Where a project is under the jurisdiction of a Force Account Agreement between the Owner and the Georgia Department of Transportation, however, material delivered on the site and preparatory work done may *not* be taken into consideration.

0331.04 All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the contract.

0331.05 The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner'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 Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner 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 sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner shall be considered as a payment made under the contract by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

0331.06 If at any time the Owner shall determine that the amount of work completed at that time is lagging behind the expired contract time by more than 20 percent, the Owner may determine that the Contractor is not faithfully performing on the contract and therefore the Owner may elect to withhold all monies and refrain from making any additional payments to the Contractor until such time as the Owner determines the work to be progressing satisfactorily.

0332 ACCEPTANCE AND FINAL PAYMENT

When the project provided for under this contract shall have been completed by the Contractor, and all parts of the work have been approved by the Owner according to the contract, the Owner shall, within ten *(10)* days unless otherwise provided, make final inspection and advise the Contractor as to preparing a final estimate, showing the value of work as soon as the necessary measurements and computations can be made, all prior certificates or estimates upon which payments have been being made are approximately only, and subject to correction in the final payment. The amount of the final estimates, less any sums that may have been deducted or retained under the provisions of this contract, will be paid to the Contractor within sixty *(60)* days after approval by the Owner, provided that the contractor has properly maintained and operated the project as specified under these specifications, and provided, that he has furnished to the Owner a sworn affidavit to the effect that all bills are paid and no suits are pending in connection with the work done or labor and material furnished under this contract. A sample affidavit appears at the end of this section to be considered as an example of an acceptable affidavit.

0333 PAYMENTS BY CONTRACTORS

The Contractor shall pay *(a)* for all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered, *(b)* for all materials, tools, and other expendable equipment to the extent of 90 percent of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools and equipment are delivered at the site of the project, and the balance of the cost thereof not later than the 30th day following the completion of that part of the work in or on which such materials, tools and equipment are incorporated or used, and *(c)* to each of his Subcontractors,

not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his Subcontractors to the extent of each Subcontractor's interest therein.

0334 CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE

0334.01 The Contractor shall not commence work under this Contract until he has obtained all the insurance required under this paragraph and such insurance has been reviewed by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until the insurance has been so obtained and reviewed.

0334.01.1 Contractor's Liability Insurance: Contractor shall purchase and maintain such comprehensive general liability and other insurance as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the work and Contractor's other obligations under the Contract Documents, whether such performance is indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

0334.01.1.1 Claims under workers' or workmen's compensation, disability benefits and other similar employees benefit acts;

0334.01.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

0334.01.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

0334.01.1.4 Claims for damages insured by personal injury liability coverage which are sustained (i) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (ii) by any other person for any other reason.

0334.01.1.5 Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; and

0334.01.1.6 Claims for damages because of bodily injury or death of any person or property damage arising out of the Ownership, maintenance or use of any motor vehicle.

The insurance required by this paragraph shall include the specific coverages and be written for not less than the limits of liability and

coverages provided in these specifications, or required by law, whichever is greater. The comprehensive general liability insurance shall include completed operations insurance. All such insurance shall contain a provision that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days prior written notice has been given to Owner. All such insurance shall remain in effect until final payment and at all times thereafter when Contractor may be correcting, removing or replacing defective work. In addition, Contractor shall maintain such completed operations insurance for at least one year after final payment and furnish Owner with evidence of continuation of such insurance at final payment. Renewal certificates shall be sent to the Owner 30 days prior to the expiration date of any policy required herein.

0334.02 Contractual Liability Insurance: The comprehensive general liability insurance required will include contractual liability insurance applicable to Contractor's obligations under separate contract and subcontracting.

0334.03 Unless otherwise provided in these General Conditions, Contractor shall purchase and maintain property insurance upon the work at the site to the full insurable value thereof *(subject to such deductible amounts as may be provided in these general conditions or required by law)*. This insurance shall include the interest of Owner, Contractor and Subcontractors in the work, shall provide "all risk" insurance for physical loss and damage including but not limited to fire, lightning, windstorms, hail, smoke, explosion, riot, aircraft, vehicles, falling objects, flood, earthquake, theft, vandalism, malicious mischief, collapse, water damage and other perils, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property *(including fees and charges of engineers, architects, attorneys and other professionals)*. If not covered under the "all risk" insurance or otherwise provided in these General Conditions, Contractor shall purchase and maintain similar property insurance on portions of the work stored on and off the site or in transit when such portions of the work are to be included in an Application for Payment. The policies of insurance required to be purchased and maintained by Contractor in accordance with paragraphs c and d shall contain a provision that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days prior written notice has been given to the Owner.

0334.04 Contractor shall purchase and maintain such boiler and machinery insurance as may be required by these General Conditions or by law. This insurance shall include the interest of Owners, Contractor and Subcontractors in the work and shall provide coverage for all installed and

functional mechanical equipment for the full replacement value of the equipment.

0334.05 Owner shall not be responsible for purchasing and maintaining any property insurance to protect the interests of Contractor or Subcontractors in the work to the extent of any deductible amounts that are provided in the supplemental conditions. If Contractor wishes property insurance coverage within the limits of such amounts, Contractor may purchase and maintain it at his own expense.

0334.06 If Owner has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by Contractor, Owner will notify Contractor thereof within ten days of the date of delivery of such certificates, to Owner. Contractor will provide to the Owner such additional information in respect of insurance provided by him as Owner may reasonably request. The right of the Owner to review and comment on Certificates of Insurance is not intended to relieve the Contractor of his responsibility to provide insurance coverage as specified nor to relieve the Contractor of his liability for any claims which might arise.

0334.07 Partial Utilization - Property Insurance: If Owner finds it necessary to occupy or use a portion or portions of the work prior to Substantial Completion of all the work, such use or occupancy may be accomplished provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or lapse on account of any such partial use or occupancy.

0334.08 The Contractor shall carry and maintain Combined Excess Liability *(Umbrella)* Insurance for a limit of not less than the following:

Each Occurrence:	$3,000,000
Aggregate:	$3,000,000

0334.09 The limits of liability for the insurance required by paragraph 334.1.1. of the General Conditions shall provide coverage for not less than the following amounts or greater where required by law:

For claims under Worker's Compensation:

State	Statutory
Federal	Statutory

Employer's Liability – Each Accident:	$1,000,000
Employer's Liability – Disease – Each Employee:	$1,000,000
Employer's Liability – Disease – Policy Limit:	$1,000,000

If the Contractor chooses to maintain a policy with a maximum of the state mandated amounts of $100,000 per accident, $100,000 for disease per employee and a disease policy limit of $500,000, the Contract required minimum of $1,000,000 can be achieved by the excess liability policy required.

General Liability Provided Per Occurrence **(City of Dalton, GA must be shown as an additional insured.)**

Each Occurrence (Bodily and Property Damage Included):	$1,000,000
Fire Damage *(Any One Fire)*:	$50,000
Medical Expense *(Any One Person)*:	$5,000
Personal and Adv Injury, With Employment Exclusion Deleted:	$1,000,000
General Aggregate *(Per Project)*:	$2,000,000
Products and Completed Operations Aggregate:	$1,000,000

Notes: Property Damage Liability Insurance will provide explosion, collapse and underground hazard coverages where applicable. Each detonation of blasting shall be considered a single occurrence. General Liability shall include Contractual Liability as stipulated.

Comprehensive Automobile Liability:

Combined Single Limit Per Occurrence, For Any and All Autos, Including Bodily Injury and Property Damage:	$1,000,000

0334.10 Scope of Insurance and Special Hazards - The amounts stated above are minimum amounts of insurance to be carried. The Contractor shall carry such additional insurance as may be required to provide adequate protection of the Contractor and his Subcontractors, respectively, against any and all damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by his and, also, against any of the special hazards which may be encountered in the performance of this Contract.

Where the scope of work involves crossing of a railway and/or railway rights-of-way, Contractor shall be required to furnish railway with a Railroad

Protective Liability Insurance Policy naming railway as the named insured and issued to the Contractor with a combined single limit of $2,000,000 for all damages arising out of bodily injury, death, property damage liability and physical damage to property liability per occurrence with an aggregate limit of $6,000,000.

0334.11 Certificate Holder should read:

CITY OF DALTON
P.O. BOX 1205
DALTON, GEORGIA 30722

0334.12 Insurance company must have an A.M. Best Rating of A-6 or higher. Insurance company must be licensed to do business by the Georgia Secretary of State. Insurance company must be authorized to do business in the State of Georgia by the Georgia Insurance Department.

0335 CONTRACT SECURITY

The Contractor shall furnish a Construction Performance Bond in an amount at least equal to one hundred percent *(100%)* of the contract prices as security for the faithful performance of this contract and also a Construction Payment Bond in an amount at least equal to one hundred percent *(100%)* of the contract price or in a penal sum not less than that prescribed by State, Territorial or local law, as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law.

The surety company issuing the above required Construction Performance Bond must have an A.M. Best Rating of A-6 or higher. The surety company must be licensed to do business by the Georgia Secretary of State. Insurance company must be authorized to do business in the State of Georgia by the Georgia Insurance Department.

0336 ADDITIONAL OR SUBSTITUTE BOND

If at any time the Owner for justifiable cause shall be or become dissatisfied with any Surety or Sureties, then upon the Construction Performance or Payment Bonds, the Contractor shall within five *(5)* days after notice from the Owner to do so, substitute an acceptable bond *(or bonds)* in such form and sum and signed by such other Surety or Sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond to the Owner.

0337 LIEN

Neither the final payment nor any part of the retained percentage will become due until the Contractor, if required, shall furnish the Owner a complete release from any liens which may arise out of this contract, or receipts in full in lieu thereof, and if required in either case, an affidavit that insofar as he has knowledge or information, the release and receipts include all materials, for which a lien might be filed. The Contractor may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner to indemnify it against any lien. If a lien shall remain unsatisfied after all payments are made, then the Contractor shall refund to the Owner all monies which the latter may be compelled to pay in discharging such lien, including all incidental costs and attorney's fees.

0338 ASSIGNMENTS

The Contractor shall not assign the whole or any part of this contract or any money due to or to become due hereunder without written consent of the Owner. In case the Contractor assigns all or part of any money due or to become due under this contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assigned in and to any money due or to become due to the Contractor shall be subject to prior liens of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this contract.

0339 MUTUAL RESPONSIBILITY OF CONTRACTORS

If through acts of neglect on the part of the Contractor, any other Contractor or subcontractor, shall suffer loss or damage on the work, the Contractor agrees to settle with such other Contractor or subcontractor by agreement or arbitration, if such other contractor or subcontractor will so settle. If such other Contractor or subcontractor shall assert any claim against the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

0340 COORDINATION WITH OTHER CONTRACTORS

The Contractor shall coordinate his operations with those of other contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including his Subcontractors shall keep informed of the progress and the detail work of other Contractors and shall notify the Owner immediately of lack of progress or defective workmanship on the part of other contractors. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with his own work.

0341 SUBCONTRACTING

The Contractor shall utilize the service of specialty subcontractor on those parts of the work which, under normal contracting practices, are performed by specialty Subcontractors. Provided - that if the Owner shall determine that the specialty work in question has been customarily performed by the Contractor's own organization and that such organization is presently competent to perform such work, the Contractor shall be permitted to do so. Provided, further - that if the Owner shall determine that the performance of any specialty work be specialty Subcontractors will result in materially increased costs or inordinate delays, the requirements of this paragraph shall not apply.

0341.01 The Contractor shall not be allowed to award work to any subcontractor prior to written approval of the Owner, which approval will not be given until the Contractor submits to the Owner, a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require.

0341.02 The Contractor shall be as fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

0341.03 The Contractor shall cause appropriate provisions to be inserted in all Subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and other contract documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.

0341.04 Nothing contained in this Contract shall create any contractual relation between any Subcontractor and the Owner.

0342 USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor expressly undertakes at his own expense:

0342.01 To take every precaution against injuries to persons or damage to property;

0342.02 To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other Contractors;

0342.03 To place upon the work or any part thereof only such loads as are consistent

with the safety of that portion of the work.

0342.04 To clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;

0342.05 Before final payment to remove all surplus material, false work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat orderly condition;

0343 QUANTITIES OF ESTIMATE

Wherever the estimated quantities of work to be done and materials to be furnished under this contract are shown in any of the documents including the proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the Owner to complete the work contemplated by this Contract, and such increase or diminution shall in no way vitiate this Contract, nor shall any such increase or diminution give cause for claims or liability for damages.

0344 RIGHTS-OF-WAY AND SUSPENSION OF WORK

The Owner shall furnish all land and rights-of-way necessary for the carrying out of this Contract and the completion of the work herein contemplated and will use due diligence in acquiring said land and rights-of-way as speedily as possible. But it is possible that all lands and rights-of-way may not be obtained as herein contemplated before construction begins, in which event the Contractor shall begin his work upon such land and rights-of-way as the Owner may have previously acquired, and no claim for damages whatsoever will be allowed by reason of the delay in obtaining the remaining lands and rights-of-way. Should the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation, or by reason of its inability to procure any lands or rights-of-way for the said work, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay, or, to withdraw from the contract except by consent of the Owner, but time for completion of the work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to be set forth in writing.

0345 GUARANTY

0345.01 All work constructed under this contract shall be fully guaranteed by the Contractor for a period of one year from the date of final inspection and acceptance by the Owner. This guarantee shall cover any and all defects in workmanship or materials that may develop in this specified time, and any

failure in such workmanship or materials shall be repaired or replaced to the satisfaction of the Owner by the Contractor at his own expense.

0345.02 Neither the final certificate of payment nor any provision in the contract documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship.

0346 CONFLICTING CONDITIONS

Any provisions in any of the contract documents which may be in conflict or inconsistent with any of the paragraphs in these General Conditions shall be void to the extent of such conflict or inconsistency.

0347 NOTICE AND SERVICE THEREOF

Any notice to any Contractor from the Owner 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 certified or registered mail or email, to the said Contractor at his last given address, or delivered in person to the said Contractor or his authorized representative on the work.

0348 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

0349 SUSPENSION OF WORK

Should the Owner be prevented or enjoined from proceeding with work either before or after the start of construction by reason of any litigation or other reason beyond the control of the Owner, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

0350 PROTECTION AND RESTORATION OF PROPERTY

0350.01 The Contractor shall not enter upon private property for any purpose without first obtaining permission, and he shall use every precaution necessary to

prevent damage or injury to any public or private property, trees, fences, monuments, underground structures, etc., on and adjacent to the site of the work. He shall protect carefully, from disturbance or damage, all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location, and shall not remove them until directed.

0350.02 Except as specifically provided in the Contract Documents, the Contractor shall not do any work that would affect any railway track, pipeline, telephone, telegraph, or electric or transmission line, or other structure nor enter upon the right-of-way or other lands appurtenant thereto, until authority therefore has been secured from the proper parties. The Contractor shall not be entitled to any extension of time or any extra compensation on account of any postponement, interference, or delay resulting from his requirement, except as specifically provided in the contract.

0350.03 The Contractor shall be responsible for all damage or injury to property of any character resulting from any act, omission, neglect, or misconduct in his manner or method of executing said work, or due to his nonexecution of said work, or at any time due to defective work or materials, and he shall not be released from said responsibility until the work shall have been completed and accepted.

0350.04 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 non-execution thereof on the part of the Contractor, he 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 he shall make good such damage or injury in an acceptable manner.

0351 RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor shall be responsible for all injury or damage of any kind resulting from his work, to persons or property. The Contractor hereby assumes the obligation to indemnify and save harmless the Owner including associates, agents and representatives, from every expense, liability, or payment arising out of or through injury to any person or persons including death and loss of services, or damage to property, regardless of who may be the Owner of the property, suffered through any cause whatsoever in the construction work involved in the contract and to defend on their behalf any suit brought against them arising from any such cause.

0352 INTEREST OF FEDERAL, STATE OR LOCAL OFFICIALS

No Federal, State or Local official shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

0353 OTHER PROHIBITED INTERESTS

No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory of other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

0354 USE OF CHEMICALS

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either E.P.A., or U.S.D.A. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

0355 MAINTENANCE OF TRAFFIC

0355.01 The Contractor shall notify the Owner and the appropriate department of transportation prior to performing any work which disrupts normal flow of traffic, and shall utilize appropriate warning signs, flagmen and other procedures necessary to ensure safety and minimize inconvenience to the public.

0356 ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this contract or the Construction Performance and Payment Bond.

0357 OWNER'S RIGHT TO SUSPEND WORK

The Owner shall have the authority to suspend the work, wholly or in part as he may deem necessary because of conditions unsuitable for proper prosecution of the work or failure on the part of the Contractor to carry out the provisions or to meet the specified requirements. The Contractor shall not suspend operations without the Owner's permission.

0358 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

0358.01 It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder 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."

0358.02 The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly 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 the Owner, 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 climatic range and usual industrial conditions prevailing in this locality.

0358.03 If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay to the Owner the amount specified in the contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

0358.04 The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

0358.05 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 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 of the essence of this

contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

0358.05.1 To any preference, priority or allocation order duly issued by the Government;

0358.05.2 To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather

0358.06 Provided, further, that the Contractor shall, within ten *(10)* days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner, 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 this matter.

0359 GOVERNING LAW; VENUE

0359.01 The Contract Documents shall be governed by the law of the State of Georgia. The exclusive jurisdiction and venue for any action rising out of this Agreement shall be the Superior Court of Whitfield Georgia, and the parties hereby waive any and all objections or defenses thereto.

.....END OF SECTION .....

AFFIDAVIT FOR FINAL PAYMENT AND RELEASE OF LIENS

STATE OF: _____

COUNTY OF: _____

FROM: _____ *(Contractor)*

TO: CITY OF DALTON, GEORGIA _____ *(Owner)*

RE: Contract entered into the _____ day of _____, _____ between the above mentioned parties for the construction of the project entitled PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT.

KNOW ALL MEN 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-men, sub-contractors, mechanics, and laborers have been paid and satisfied in full and that there are not outstanding claims of any character arising out of the performance of the Contract which have been paid and satisfied in full.

2. The undersigned further certifies that to the best of their knowledge and belief there are not unsatisfied claims for damages resulting from injury or death to any employees, sub-contractors, or the public at large arising out of the performance of the Contract or any suits or claims for any other damage of any kind, nature or description on which might constitute a lien upon the property of the Owner.

3. The undersigned makes this final affidavit as provided by the Contract and agrees that acceptance of final payment shall constitute full settlement of all claims against the Owner arising under or by virtue of the Contract.

4. IN WITNESS WHEREOF, the undersigned has signed and sealed this instrument this day of _____, _____.

SIGNED: _____ *(SEAL)*

BY: _____

TITLE: _____

Personally appeared before the undersigned who after being duly sworn, deposes and says that the facts stated in the above affidavit are true.

This _____ day of _____, _____.

Notary Public: _____ *SEAL*

My Commission Expires: _____,

_____ County,

SECTION 0400 – GENERAL NOTES

1. THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS/BID PACKAGE, OR IN ANY WAY 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 CITY OF DALTON IN ANY WAY. THE ATTENTION OF THE BIDDER IS SPECIFICALLY DIRECTED TO GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATION SECTIONS 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS.

2. ALL WORK ASSOCIATED WITH THIS CONTRACT SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, CONSTRUCTION DETAILS, AND THE **PLANS PREPARED BY GOODWYN MILLS CAWOOD INCLUDED IN EXHIBIT A.**

3. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE (WHERE APPLICABLE) SUCH THAT WATER DOES NOT POND ON FINISHED SURFACES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL DRAINAGE STRUCTURES WITHIN THE LIMITS OF THE PROJECT THROUGHOUT THE DURATION OF THE PROJECT. ANY DEBRIS THAT GOES INTO DRAINAGE STRUCTURES SHALL BE CLEANED OUT BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

5. TRAFFIC CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH PART 6 OF THE 2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. A CERTIFIED FLAGGER WILL BE REQUIRED FOR THIS PROJECT.

6. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH DALTON UTILITIES AND OTHER UTILITY AGENCIES FOR THE COORDINATION AND ADJUSTMENTS (IF APPLICABLE) OF ALL UTILITIES LOCATED WITHIN THE PROJECT LIMITS.

7. CONTRACTOR IS REQUIRED TO CALL GA 811 OR FILE ONLINE A UTILITY LOCATE REQUEST PRIOR TO COMMENCING WORK AND MAINTAIN ACTIVE LOCATE FOR THE DURATION OF THE PROJECT.

8. TIME OF WORK RESTRICTIONS – NO WORK SHALL BE PERFORMED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM MONDAY THROUGH FRIDAY. DAMAGES FOR FAILURE TO OBSERVE TIME OF WORK RESTRICTIONS SHALL BE ASSESSED TO THE CONTRACTOR AT THE RATE OF $200 PER HOUR. CONTRACTOR IS REQUIRED SUBMIT REQUESTS IN WRITING TO THE PUBLIC WORKS PROJECT MANAGER FOR ALL WORK THAT TAKES PLACE OUTSIDE OF ALLOWED TIMES AND DAYS, AND SHALL BE PERMITTED UPON WRITTEN APPROVAL AT THE DISCRECTION OF THE CITY.

CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR NOTIFYING IN ADVANCE ALL BUISNESSES LOCATED ADJACENT TO APPROVED AFTER HOURS WORKING AREAS PRIOR TO COMMENCING.

9. COORDINATION OF PROJECT WITH OWNERS – CONTRACTOR SHALL CONTINUOUSLY MAKE A GOOD FAITH EFFORT TO COORDINATE WORK ACTIVITIES WITH THE ADJACENT PROPERTY OWNERS AFFECTED BY THE PROJECT.

10. CONTRACTOR IS REQUIRED TO FURNISH THE CITY AN AS-BUILT SURVEY OF THE IMPROVEMENTS FROM A LICENSED SURVEYOR UPON COMPLETION OF THE PROJECT. NO SEPARATE PAYMENT WILL BE MADE FOR THIS SURVEY AND THE EXPENSE SHOULD BE INCLUDED IN GRADING COMPLETE.

11. **THE CONTRACTOR SHALL PERFORM THE INSTALLATION OF THE UNDERGROUND DUCT BANK PORTION OF THE PROJECT AS EXPEDITIOUSLY AS POSSIBLE. ONCE THE UNDERGROUND DUCT BANK AND ASSOCIATED PULL BOXES ARE INSTALLED, THE CONTRACTOR SHALL GIVE NOTICE IN WRITING TO THE CITY OF DALTON INDICATING THAT THE UNDERGROUND DUCT BANK IS COMPLETE AND READY FOR THE UTILITY INSTALLATION. ONCE THE CITY HAS RECEIVED THE CONTRACTOR'S OFFICIAL NOTIFICATION, THE CITY WILL IMMEDIATELY NOTIFY THE UTILITY PROVIDERS TO COMMENCE WITH THE RELOCATION OF THEIR OVERHEAD UTILITIES INTO THE NEWLY CONSTRUCTED UNDERGROUND DUCT BANK. THE UTILITY POLES WILL BE REMOVED BY DALTON UTILITIES AFTER ALL OF THE UTILITY PROVIDERS HAVE COMPLETED THEIR RELOCATION AND REMOVED THEIR OVERHEAD FACILITIES. THE CONTRACTOR SHALL SEQUENCE AND SCHEDULE HIS WORK ACCORDINGLY IN ORDER TO CONTINUE WORKING WHILE THE UTILITY RELOCATION WORK IS BEING PERFORMED. IN THE EVENT THE UTILITY RELOCATION WORK IN GENERAL OR THE OVERALL DURATION OF THE UTILITY RELOCATION WORK PREVENTS THE CONTRACTOR FROM MAKING REASONABLE PROGRESS ON A CONTROLLING ITEM OF WORK, THE CONTRACTOR SHALL SUBMIT A CLAIM IN WRITING FOR AN EXTENSION IN THE CONTRACT TIME IN ACCORDANCE WITH THE REQUIREMENTS OF PARAGRAPH 0324 OF THE GENERAL CONDITIONS OF THE CONTRACT DOCUMENTS. IF THE CONTRACTOR'S REASONS FOR THE TIME EXTENSION ARE ACCEPTABLE TO THE CITY, THE CONTRACT TIME WILL BE EXTENDED IN AN AMOUNT EQUAL TO TIME LOST DUE TO THE UTILITY DELAYS THAT ARE BEYOND THE CONTROL OF THE CONTRACTOR.**

SECTION 0500 – SPECIAL NOTES

1. The Contractor acknowledges that the PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT herein described is being undertaken in part or in whole using funds derived from the 'American Rescue Plan Act Improving Neighborhood Outcomes in Disproportionately Impacted Communities Grant Program' which is administered by the Governor's Office of Planning and Budget (The "Grant").
2. The Contractor acknowledges that the Grant is administered by a political subdivision of the State of Georgia, and the money derived therefrom is subject to laws, rules, and regulations proscribed by the State of Georgia.
3. The Contractor acknowledges that the Grant is funded by the Federal Government of the United States, and the money derived therefrom is subject to the laws, rules, and regulations proscribed by the United States.
4. The Contractor affirms and warrants that it has received and reviewed the document entitled 'American Rescue Plan Act Improving Neighborhood Outcomes in Disproportionately Impacted Communities Grant Program TERMS AND CONDITIONS' along with its attachments (the "Terms").
5. The Contractor affirms and warrants that it understands the obligations of the City, which is styled as the 'Grantee' in the Terms, and any contractor or subcontractor of the City.
6. The Contractor affirms and warrants to the City that it will refrain from taking any action, or inaction, which may result in a violation of the Terms by the City, with special consideration given to:
    a. Paragraph 2.4 'Performance Period'
    b. Paragraph 2.5 'General Responsibility and Compliance'
    c. Paragraph 2.7 'Public Information and Meetings'
    d. Paragraph 2.9 'False Statements by Grantee'
    e. Paragraph 2.10 'Conflict of Interest Safegaurds'
    f. Paragraph 2.11 'Fraud, Waste and Abuse'
    g. Paragraph 2.16 'Required Assurances'
    h. Paragraph 2.17 'System for Award Management (SAM) Requirements'
    i. Paragraph 3.1 'E-Verify'
    j. Paragraph 3.2 'Compliance with Federal Law, Regulations and Executive Orders'
    k. Paragraph 3.3 'Clean Air Act'
    l. Paragraph 3.4 'Federal Water Pollution Control Act'
    m. Paragraph 3.5 'Energy Conservation'
    n. Paragraph 3.6 'Procurement of Recovered Materials'
    o. Paragraph 3.7 'Copyright, Patents, and Intellectual Property Rights'
    p. Paragraph 3.10 'Reporting Requirements'
    q. Paragraph 5.1 'Cooperation with Monitoring, Audits, Records Requirements, Assessments and Evaluations'
    r. Paragraph 6.1 'Prohibited Costs'
    s. Paragraph 6.2 'Political Activities'
    t. Paragraph 7.2 'Reporting'
    u. Exhibit A 'Grantee Assurances'
7. The Contractor will not frustrate efforts by the City to fulfill their obligations under the Terms by withholding documentation which may be necessary for reporting or audits without good cause shown.
8. The Contractor affirms and warrants that it will not use Grant funds for political activities.

9. The Contractor affirms and warrants it will abide by the requirements of Paragraph 6 of Exhibit A 'Grantee Assurances' of the Terms.
10. The Contractor acknowledges that a violation of the Special Notes listed here will constitute a breach of the Contract.

SECTION 0501 – EQUAL OPPORTUNITY

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

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. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency 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 vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided,* That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant

to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

SECTION 0600 – SPECIAL PROVISIONS

0601 PROJECT SPECIAL PROVISIONS

All special provisions listed on this page shall apply to this project, Pentz and Cuyler Street Corridor Improvements Project. See the following pages for the special provisions:

Section 108 – Prosecution and Progress

Section 150 – Traffic Control

Section 150.6 – Traffic Control (Special Conditions)

Section 163 – Miscellaneous Erosion Control Items

Section 213 – Borrow Material (Local Sand or Sand-Gravel Backfill)

Section 500 – Concrete Structures

Section 660 – Gravity Sewer Mains and Accessories

Section 670 – Water Mains and Accessories

Section 700 – Grassing

Section 703 – Tree Wells, Tree Walls, and Root Protection

Section 890 – Seed and Sod

Section 893 – Miscellaneous Planting Materials

Section 900 – Brick Pavers

.....END OF SECTION .....

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 108 - Prosecution and Progress

Retain Sub-Section 108.08 of the Georgia D.O.T. Standard Specifications as written and add the following:

C. Intermediate Contract Time

1. Special Conditions – Roadway

   Failure to reopen the lane closure as specified in Special Provision 150.6 will result in the assessment of Liquidated Damages at the rate of $1,000 per day.

   When provided notice from the City, Failure to maintain or establish traffic control devices and layout as specified in Special Provision 150 will result in the assessment of liquidated damages in accordance with the Schedule of Deductions for Each Calendar Day of Deficiencies of Traffic Control Installation and/or Maintenance as specified in Sub-Section 150.07.01 of Special Provision 150.

All liquidated damages specified above are cumulative and are in addition to those which may be assessed in accordance with the contract for failure to complete the overall project.

February 01, 2017
Revised October 22, 2018
Revised December 7, 2020

CITY OF DALTON
PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 150—Traffic Control

150.1 General Description

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

The Contractor shall be responsible for the maintenance of traffic signals and Advanced Traffic Management System (ATMs) devices from the time that the system is modified until final acceptance. The maintenance of traffic signals and ATMs devices that are not a part of the Work and that are not in conflict with any portion of the Work shall not be the responsibility of the Contractor. However, the Contractor is still responsible for damages to all devices that he or his subcontractors cause, in accordance with Section 107 and other Specifications.

When any provisions of this Specification or the Plans do not meet the minimum requirements of the MUTCD, the MUTCD shall control. The 2009 Edition of the MUTCD including revisions shall be in effect for the duration of the project.

All traffic control devices used during the construction of the project shall meet the standards utilized in the MUTCD, and shall comply with the requirements of these Specifications, Georgia Construction Standards and Details, Project Plans, Design Manuals, and Special Provisions.

The needs and control of all road users (motorists, bicyclists and pedestrians within the highway right-of-way and easements, including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a Temporary Traffic Control (TTC) zone shall be an essential part of highway construction, utility work, maintenance operations and management of traffic incidents.

Utilities included in the Contract are bound by Special Provision 150 and shall follow its requirements. For utilities not included in the Contract but working within the project limits, they shall, at a minimum follow the MUTCD. Moreover, in accordance with Utility Accommodation Policy and Standards Manual dated 2016, the Engineer reserves the right to require additional certified flaggers, signs, warning lights, channelization devices, and other safety devices as may be necessary to properly protect, warn, and safeguard the traveling public. In addition, the Department reserves the right to place time restrictions or moratoriums on all utility work covered under a permit when, in the opinion of the Department, the continuance of the Work would seriously hinder traffic flow, be needlessly disruptive, or would unnecessarily inconvenience the traveling public. In case of emergencies, Utilities shall be provided access in accordance with Utility Accommodation Policy and Standards Manual.

150.1.01 Definitions

For Special Provision 150, the definitions for "shall", " should", and "may" will be in accordance with MUTCD (1A.13).

Shall (Standard) - a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device.

Should (Guidance) - a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate.

May (Option) - a statement of practice that is a permissive condition and carries no requirement or recommendation.

150.1.02 Content

150.1 General Description

150.1.01 Definitions

150.1.02 Content

150.1.03 Related References

A. Standard Specification
B. Reference Documents

150.1.04 Submittals/Preconstruction

A. Worksite Traffic Control Supervisor
B. Sequence of Operations
C. Pedestrian Considerations

1. Pedestrian Signage
2. Temporary Pedestrian Facilities

150.2 Materials and Traffic Control Devices

150.2.01 Traffic Control Devices

A. NCHRP 350 and MASH
B. Approval
C. Quality Guidelines for All Temporary Traffic Devices

150.2.02 Reflectorization Requirements

A. Signs

B. Channelization Devices

150.2.03 Arrow Panels

150.2.04 Channelization Devices

A. General
B. Drums

1. Design
2. Application
3. Longitudinal Channelization
4. Removal

C. Vertical Panels

1. Design
2. Application

D. Cones

1. Design
2. Applications

E. Barricades

1. Design
2. Application

F. Warning Lights

1. Design
2. Application

150.2.05 Flashing Beacon

150.2.06 Guardrail

150.2.07 Interim Signs

A. Posts
B. Sign Blanks and Panels

150.2.08 Pavement Markings

A. All Traffic Striping for Forty-Five (45) Days or Less (≤45 Days)
B. All Temporary Striping Beyond Forty-Five (45) days (>45 Days)
C. All Temporary Traffic Striping on Final Surface

150.2.09 Portable Changeable Message Signs

150.2.10 Portable Impact Attenuators

150.2.11 Portable Temporary Traffic Control Signals

150.2.12 Raised Pavement Markers

150.2.13 Rumble Strips

150.2.14 Temporary Barriers

A. Design
B. Application

150.2.15 Temporary Guardrail Anchorage- Type 12

150.2.16 Temporary Traffic Signal

150.3 Construction Requirements

150.3.01 General

A. Implementation Requirements
B. Maintenance of Traffic Control Devices
C. Traffic Interruption Restrictions
D. Work Zone Restrictions

1. Interstate

1. Closure Length
2. Duration

B. Shoulder Closure
C. Lane Closure

1. Advance Warning Signs
2. Transition Area – Taper
3. Activity Area
4. Termination Area

D. Removal of Lane Closures
E. Exit and Entrance Ramps

150.3.06 Traffic Pacing Method

A. Pacing of Traffic
B. Methods of Signing for Traffic Pacing

150.3.07 Flagging Operation

A. Flaggers
B. Flagger Certification
C. Flagger Appearance and Equipment
D. Flagger Warning Signs
E. Pilot Vehicle Requirements
F. Automated Flagger Assistance Devices
G. Portable Temporary Traffic Control Signals

150.3.08 Traffic Signals

A. Responsibility/Cost
B. Law Enforcement Officer Requirement

150.3.09 Mobile Operations

150.3.10 Pavement Markings

A. General

1. Resurfacing Projects
2. Widening and Reconstruction Projects
3. New Location Construction Projects

B. Installation and Removal of Pavement Markings

1. Installation
2. Removal
3. Intermediate Surface
4. Final Surface
5. Pay Factor Reduction for Asphaltic Concrete Final Surfaces
6. Preparation and Planning for Traffic Shifts

C. Raised Pavement Markers

1. Supplementing Lane Lines
2. Supplementing Ramp Gore Lines

3. Other Lines

D. Exceptions for Interim Markings

1. Two-Lane, Two-Way Roadway
2. Multi-Lane Highway - with No Paved Shoulder(s) or Paved Shoulder(s) Four Feet or Less (≤ 4')
3. Limited Access Roadways and Roadways with Paved Shoulder Greater than Four Feet (>4')
4. Ramps for Multi-lane Divided Highways
5. Miscellaneous Pavement Markings

150.3.11 Differences in Elevation between Travel Lanes and Shoulders

A. Differences in Elevations

1. Difference of Two Inches (≤ 2") or Less Between Adjacent Travel Lanes
2. Difference of Two Inches (≤ 2") or Less Between Adjacent Travel Lane and Paved Shoulder
3. Difference of Greater Than Two Inches (>2") is Permitted for Continuous Operations
4. Difference of Greater Than Two Inches (>2") Between Travel Lanes and/or Shoulders for Non-Continuous Operations

B. Healed Section
C. Emergency Situations
D. Plating
E. Asphaltic Concrete Resurfacing Projects

1. Shoulder Construction Included as a Part of the Contract
2 Shoulder Construction Not Included as a Part of the Contract

150.3.12 Work Zone Law Enforcement

150.4 Measurement

150.4.01 Traffic Control Items

A. Traffic Control
B. Changeable Message Sign, Portable
C. Flashing Beacon Assembly
D. Pavement Markings
E. Portable Impact Attenuators
F. Signs

1. Interim Ground Mounted or Interim Overhead Special Guide Signs
2. Remove and Reset Existing Special Guide Signs, Ground Mount or Overhead
3. Modify Special Guide Signs, Ground Mount or Overhead

G. Temporary Audible Information Device
H. Temporary Barrier
I. Temporary Curb Cut Wheelchair Ramps
J. Temporary Guardrail Anchorage, Type 12
K. Temporary Walkways with Detectable Edging
L. Traffic Signal Installation - Temporary
M. Work Zone Law Enforcement

150.5 Reserved

150.6 Special Conditions

150.7 Payment

150.7.01 Enforcement and Adjustments

150.1.03 Related References

A. Standard Specifications

Section 104 - Scope of Work

Section 105 - -Control of Work-Legal Regulations and Responsibility to the Public

Section 107 - Legal Regulations and Responsibility to the Public

Section 108 - Prosecution and Progress

Section 209 - Subgrade Construction

Section 400 - Hot Mix Asphaltic Concrete Construction

Section 441 - Miscellaneous Concrete

Section 429 - Rumble Strips

Section 620 - Temporary Barrier

Section 632 - Portable Changeable Message Signs

Section 641 - Guardrail

Section 647 - Traffic Signal Installation

Section 648 - Traffic Impact Attenuator

Section 652 - Painting Traffic Stripe

Section 653 - Thermoplastic Traffic Stripe

Section 654 - Raised Pavement Markers

Section 656 - Removal of Pavement Markings

Section 657 - Preformed Plastic Pavement Markings

Section 658 - Polyurea Traffic Strip

Section 659 - Hot Applied Preformed Plastic Pavement Markings

Section 911 - Sign Posts

Section 912 - Sign Blanks and Panels

Section 913 - Reflectorizing Materials

B. Referenced Documents

ASTM D4956-13 (Retro-reflectivity)

American Traffic Safety Services Association (ATSSA)

Construction Detail A-3 Curb Cut (Wheelchair) Ramps Concrete Sidewalk Details

Construction Detail A-4 Detectable Warning Surface Truncated Dome Size, Spacing and Alignment Requirements

Construction Detail T-3A (Type 7, 8, and 9 Square Tube Post Installation Detail)

GDOT Signing and Marking Design Guidelines

Georgia Standard 4000W "Lengths of Advancement, Clear Zone Distances, Fill Height Embankment"

Georgia Standard 4960 "Temporary Barrier (End Treatment Options)"

Georgia Standard 9102 "Traffic Control Detail for Lane Closure on Two-Lane Highway"

Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway"

Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway"

Georgia Standard 9121 "Tapers, Signs, and Markings for Passing Lanes"

Manual for Assessing Safety Hardware (MASH)

Manual on Uniform Traffic Control Devices (MUTCD)

National Cooperative Highway Research Program (NCHRP) 350

National Safety Council

Qualified Product List #29 (QPL-29) Reflective Sheeting

Qualified Product List #34 (QPL-34) Work Zone Traffic Control Devices (Drums, Type III Barricades, Vertical Panels, and Portable Sign Systems)

Qualified Product List #35 (QPL-35) Drive Type Galvanized Steel Sign Posts

Qualified Product List #46 (QPL-46) Traffic Pavement Markings

Qualified Product List #64 (QPL-64) Attenuator Units (Compression Crash Cushion) and Guardrail End Treatments

Qualified Product List #76 (QPL-76) Raised Pavement Markers and Channel Markers

Qualified Product List #79 (QPL-79) Portable Arrow Boards

Qualified Product List #82 (QPL-82) "Portable Changeable Message Signs"

Utility Accommodation Policy and Standards Manual

Work Zone Safety and Mobility Policy

150.1.04 Submittals/Preconstruction

A. Worksite Traffic Control Supervisor

The Contractor shall designate a qualified individual as the Worksite Traffic Control Supervisor (WTCS). The WTCS shall be responsible for selecting, installing and maintaining all traffic control devices in accordance with the Plans, Specifications, Special Provisions and the MUTCD. The WTCS shall be currently certified by the American Traffic Safety Services Association (ATSSA) Work Site Traffic Supervisor Certification program or the National Safety Council Certification program. On-line classes will not be accepted.

The WTCS shall be available on a twenty-four (24) hour basis to perform his duties. If the Work requires traffic control activities to be performed during the daylight and nighttime hours, it may be necessary for the Contractor to designate an alternate WTCS. An alternate WTCS must meet the same requirements and qualifications as the primary WTCS and be accepted by the Engineer prior to beginning any traffic control duties. The Worksite Traffic Control Supervisor's traffic control responsibilities shall have priority over all other assigned duties.

As the representative of the Contractor, the WTCS shall have full authority to act on behalf of the Contractor in administering the TTC Plan. The WTCS shall have appropriate training in safe traffic control practices in accordance with Part 6 of the MUTCD. In addition to the WTCS, all other individuals making decisions regarding traffic control shall meet the training requirements of the Part 6 of the MUTCD.

The Worksite Traffic Control Supervisor (WTCS) shall have a copy of Part 6 of the MUTCD and the Contract on the job site. Copies of the current MUTCD may be obtained from the FHWA web page at http://mutcd.fhwa.dot.gov.

The WTCS shall supervise the initial installation of traffic control devices. The Engineer, prior to the beginning of construction, will review the initial installation. Modifications to traffic control devices as required by sequence of operations or staged construction shall be reviewed by the WTCS.

Any work performed on the interstate or limited access highway right-of-way that requires traffic control shall be supervised by a submitted/approved certified Worksite Traffic Control Supervisor. No work requiring traffic control shall be performed unless the certified WTCS is on the worksite. Failure to maintain a Certified Worksite Traffic Control Supervisor on the Work will be considered as non-performance under Subsection 150.7.01.

The WTCS or alternate WTCS shall be available on a full-time basis to maintain traffic control devices with access to all personnel, materials, and equipment necessary to respond effectively to an emergency situation within forty-five (45) minutes of notification of the emergency.

The WTCS shall perform inspections, at a minimum once a month, to ensure that traffic control is maintained. For all interstate and limited access highways, the WTCS shall perform, as a minimum, weekly traffic control inspections. The inspections will start with the installation of the advance warning signs and will stop when a maintenance acceptance is issued or when the corrective list is completed.

An inspection shall include both daytime and nighttime reviews. The inspection shall be reported to the Engineer on a Traffic Control Inspection Report, (TC-1). Unless modified by the special conditions or by the Engineer, routine deficiencies shall be corrected within a twenty-four (24) hour period. Failure to comply with these provisions shall be grounds for dismissal from the duties of WTCS and/or removal of the WTCS from the project. Failure of the WTCS to execute his duties shall be considered as non-performance under Subsection 150.7.01.

TRAFFIC CONTROL INSPECTION REPORT (TC-1)

Project No.: _____ County: _____

Contractor: _____ Date: _____ Daytime: _____

Nighttime: _____

PURPOSE: To provide adequate warning, delineation, and channelization to assist in guiding road users in advance of and through the work zone by utilizing proper pavement markings, signs, and other MUTCD compliant devices.

RESPONSIBILITY: The Worksite Traffic Control Supervisor (WTCS) has the duty of ensuring that all traffic control devices are installed and maintained according to the requirements of the Traffic Control Plan.

DEFICIENCIES: Items noted below require corrective measures be performed within the next

____ hours/days.

LOCATION	DESCRIPTION	ACTION REQUIRED

(use additional sheets if needed)

Signature: _____ WTCS or DOT performing inspection

DOT inspection presented to WTCS Date: _____ Time: _____

TO BE COMPLETED BY THE WTCS

The attached deficiencies were corrected by Date: _____ Time: _____

Signature _____ Return TC-1 to DOT inspector.

The WTCS certifies that all traffic control devices in use on the project are MASH/NCHRP 350 crashworthy compliant.

Traffic Control Checklist

Satisfactory Unsatisfactory Non-applicable

Signs

S U N

- Are the signs correctly installed?
- Signs are in place according to TTC Plans. Signs are plumb and level. Signs are at the proper height.
- Are the signs visible and readable to the public both daytime and nighttime?
- Is retroreflectivity good?
- Are signs not in use including PCMS properly stored?

TTC Devices

S U N

- Are they MASH/NHCRP 350 approved? Do they meet MUTCD and Special Provision 150 requirements?
- Are they installed according to manufacture recommendation?
- Are they in acceptable/marginal condition? Are they stable? Is the retroreflectivity good?

Clear Zone

S U N

- Are all material and equipment stored beyond the clear zone?
- If stored in clear zone, are they protected by positive barrier?
- Are drop-offs marked and healed according to Special Provision 150?

Positive Barriers

S U N

- Are the barriers in acceptable/marginal condition and FHWA approved?
- Are the barrier reflectors proper and in good condition?
- Do the barriers extend to the proper advancement length? Are the tapers according to GA Standards?

Attenuators and Guardrails

S U N

- Are the proper attenuator assemblies in use?
- Gating - Is the recovery area free of debris and provide the necessary recovery area?
- Is the assembly in accordance with manufacture's recommendation?
- Are the guardrails properly anchored and/or attached to the barrier?
- Are shoes and transition sections in accordance with Standards?

Pavement Markings

S U N

- Are the pavement makings visible and legible?
- Can they be seen during the daytime and nighttime?
- Are there no conflicting pavement markings?
- Are the pavement markings including RPM installed and maintained according to section 150?

The Engineer will periodically review the Work for compliance with the requirements of the TTC plan.

On projects where traffic control duties will not require full time WTCS supervision, the Engineer may allow the Contractor's Project superintendent, foreman, subcontractor, or other designated personnel to serve as the WTCS as long as satisfactory results are obtained. Nevertheless, the individual shall meet the requirements and perform the duties of a WTCS.

B. Sequence of Operations

Any Sequence of Operations provided in this Contract in conjunction with any staging details which may be shown in the Plans, is a suggested sequence for performing the Work. It is intended as a general staging plan for the orderly execution of the Work while minimizing the impact on pedestrian facilities, mainline, cross-streets and side streets. The Contractor shall develop detailed staging and temporary traffic control plans for performing specific areas of the Work including but not limited to all traffic shifts, detours, bridge widenings, paces, or other activities that disrupt traffic or pedestrian flow. The Engineer may require detailed staging and TTC Plans for lane closures or disruption to pedestrian facilities. These Plans shall be submitted for approval at least two (2) weeks prior to the scheduled date of the activity. Activities that have not been approved at least seven (7) days prior to the scheduled date shall be rescheduled.

Where traffic is permitted through the work area under stage construction, the Contractor may choose to construct, at no additional expense to the Department, temporary on-site bypasses or detours in order to expedite the Work. Plans for such temporary bypasses or detours shall be submitted to the Engineer for review and approval thirty (30) calendar days prior to the proposed construction. Such bypasses or detours shall be removed promptly when in the opinion of the Engineer; they are no longer necessary for the satisfactory progress of the Work. Bypasses and detours shall meet the minimum requirements of Subsection 150.3.01.E.

As an option to the Sequence of Operations in the Contract, the Contractor may submit an alternative Sequence of Operations for review and approval. Alternate Sequence of Operations for pedestrian facilities shall be in compliance with the MUTCD and ADA. Pedestrian needs identified in the preconstruction phase shall be included in the proposed alternate plan.

The Department will not pay, or in any way, reimburse the Contractor for claims arising from the Contractor's inability to perform the Work in accordance with the Sequence of Operations provided in the Contract or from an approved Contractor alternate.

The Contractor shall secure the Engineer's approval of the Contractor's proposed plan of operation, sequence of work and methods of providing for the safe passage of vehicular and pedestrian traffic before it is placed in operation. The proposed plan of operation shall supplement the approved traffic control plan. Any major changes to the approved TTC plan, proposed by the Contractor, shall be submitted to the Department for approval.

Some additional traffic control details will be required prior to any major shifts or changes in traffic. The traffic control details shall include, but not be limited to, the following:

1. A detailed drawing showing traffic locations and lanes for each step of the change.
2. The location, size, and message of all signs required by the MUTCD, Plan, Special Provisions, and other signs as required to fit conditions. Any portable changeable message signs used shall be included in the details.
3. The method to be used in, and the limits of, the obliteration of conflicting lines and markings.
4. Type, location, and extent of new lines and markings.
5. Horizontal and vertical alignment and superelevation rates for detours, including cross-section and profile grades along each edge of existing pavement.
6. Drainage details for temporary and permanent alignments.
7. Location, length, and/or spacing of channelization and protective devices (temporary barrier, guardrail, barricades, etc.)

8. Starting time, duration and date of planned change.

9. For each traffic shift, a paving plan, erection plan, or work site plan, as appropriate, detailing workforce, materials, and equipment necessary to accomplish the proposed Work. This will be the minimum resource allocation required in order to start the Work.

The above details shall be submitted to the Engineer for approval at least fourteen (14) days prior to the anticipated traffic shift. Submission should be made electronically in a portable document format (pdf). The Contractor shall have traffic control details for a traffic shift which has been approved by the Engineer prior to commencement of the physical shift. All preparatory work relative to the traffic shift, which does not interfere with traffic, shall be accomplished prior to the designated starting time. The Engineer and the Contractor's representative will verify that all conditions have been met prior to the Contractor obtaining materials for the actual traffic shift.

C. Pedestrian Considerations

All existing pedestrian facilities, including access to transit stops, shall be maintained. Where pedestrian routes are closed, alternate routes shall be provided. Closures of existing, interim and final pedestrian facilities shall have the prior written approval of the Engineer. When existing pedestrian facilities are disrupted, closed or relocated in a TTC zone, the temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. Pedestrian facilities are considered improvements and provisions made to accommodate or encourage walking. Whenever a sidewalk is to be closed, the Engineer shall notify the maintaining agency two (2) weeks prior to the closure. Prior to closure, detectable barriers (that are detectable by a person with a visual disability traveling with the aid of a long cane), as described by the MUTCD, shall be placed across the full width of the closed sidewalk. Barriers and channelizing devices used along a temporary pedestrian route shall be in compliance with the MUTCD.

Temporary Traffic Control devices used to delineate a Temporary Traffic Control Zone Pedestrian Walkway shall be in compliance with Subsection 150.3.01.A. Appropriate signs as described in the MUTCD shall be maintained to allow safe passage of pedestrian traffic or to advise pedestrians of walkway closures (Refer to MUTCD Figures TA-28 and TA-29 for guidance). Advance closure signing should be placed at intersections rather than midblock locations so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing. Temporary Traffic Control devices and construction material shall not intrude into the usable width of the pedestrian walkway. Signs and other devices shall be placed such that they do not narrow or restrict any pedestrian passage to less than forty-eight inches (≥ 48").

1. Pedestrian Signage

   A pedestrian walkway shall not be severed or relocated for non-construction activities, such as parking for construction vehicles and equipment. Movement by construction vehicles and equipment across designated pedestrian walkways should be minimized. When necessary, construction activities shall be controlled by flaggers. Pedestrian walkways shall be kept free of mud, loose gravel or other debris.

   When temporary covered walkways are used, they shall be lighted during nighttime hours. When temporary traffic barrier is used to separate pedestrian and vehicular traffic, the temporary barrier shall meet NCHRP-350 Test Level Three. The barrier ends shall be protected in accordance with Georgia Standard 4960. Curbing shall not be used as a substitute for temporary traffic barriers when temporary traffic barriers are required. Tape, rope or plastic chain strung between temporary traffic control devices are not considered as detectable and shall not be used as a control for pedestrian movements.

   The WTCS shall inspect the activity area daily to ensure that effective pedestrian TTC is being maintained. The inspection of TTC for pedestrian traffic shall be included as part of the TC-1 report.

2. Temporary Pedestrian Facilities

   Temporary pedestrian facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. The geometry, alignment and construction of the facility should meet the applicable requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)".

a. Temporary Walkways with Detectable Edging

A smooth, continuous hard surface (firm, stable and slip resistant) shall be provided throughout the entire length of the temporary pedestrian facility. Compacted soils, sand, crushed stone or asphaltic pavement millings shall not be used as a surface course for walkways.

Temporary walkways shall include detectable edging as defined in the MUTCD. When temporary traffic barrier is included as a pay item in the Contract and where locations identified on the Plans for positive protection will also allow them to serve as pedestrian detectable edging, payment will be made for the temporary traffic barrier in accordance with Section 620. No payment will be made for temporary walkways with Detectable Edging where existing pavements or existing edging (that meets the requirements of MUTCD) are utilized as temporary walkways. Payment for temporary detectable edging, including approved barriers and channelizing devices, installed on existing pavements shall be included in Traffic Control-Lump Sum.

Regardless of the materials used, temporary walkways shall be constructed with sufficient thickness and durability to withstand the intended use for the duration of the construction project. If concrete or asphalt is used as the surface course for the walkway, it shall be a minimum of one and one-half inches (≥ 1-1/2") thick. Temporary walkways constructed across unimproved streets and drives shall be a minimum thickness of four inches (≥ 4") for concrete and three inches (≥ 3") for asphalt. Joints formed in concrete sidewalks shall be in accordance with Section 441 Concrete surfaces shall have a broom finish.

If plywood is used as a walkway, it must be a minimum of three quarters of an inch (≥ 3/4") thick, pressure treated and supported with pressure treated longitudinal joists spaced a maximum of sixteen inches (≤ 16") on center. The plywood shall be secured to the joist with galvanized nails or galvanized deck screws. Nails and screws shall be countersunk to prevent snagging or tripping the pedestrians. A slip resistant friction course shall be applied to any plywood surface that is used as a walkway. Any slip resistant material used shall have the prior written approval of the Engineer.

The Contractor may propose alternate types of Temporary Walkways provided that the Contractor can document that the proposed walkway meets the requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)". Alternate types of Temporary Walkways shall have the prior written approval of the Engineer.

Temporary walkways shall be constructed and maintained so there are no abrupt changes in grade or terrain that could cause a tripping hazard or could be a barrier to wheelchair use. The Contractor shall construct and maintain the walkway to ensure that joints in the walkway have a vertical difference in elevation of no more than one quarter (≤ 1/4") of an inch and that the horizontal joints have gaps no greater than one half (≤ 1/2") of an inch. The grade of the temporary walkway should parallel the grade of the existing walkway or roadway and the cross slope should be no greater than two percent (≤ 2%). A width of sixty inches (60"), if practical, should be provided throughout the entire length of any temporary walkway. The temporary walkway shall be a minimum width of forty eight inches (48"). When it is not possible to maintain a minimum width of sixty inches (60") throughout the entire length of temporary walkway, a sixty inch (60") by sixty inch (60") passing space should be provided at least every two hundred feet (200 ft.), to allow individuals in wheelchairs to pass.

Temporary walkways shall be constructed on firm subgrade. Compact the subgrade according to Section 209. Furnish and install any needed temporary pipes prior to constructing any walkway to ensure positive drainage away from or beneath the temporary walkway. Once the walkway is no longer required, remove any temporary materials and restore the area to the original conditions or as shown in the Plans.

b. Temporary Curb Cut Wheelchair Ramps

Temporary curb cut wheelchair ramps shall be constructed in accordance with Section 441 and Construction Detail A-3 Curb Cut (Wheelchair) Ramps Concrete Sidewalk Details. Ramps shall also include a detectable warning surface in accordance with Construction Detail A-4 Detectable Warning Surface Truncated Dome Size, Spacing and Alignment Requirements. Other types of material for the construction

of the temporary curb cut wheelchair ramps, including the detectable warning surface, may be used provided the Contractor can provide documentation that the material to be used meets the requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)". When a wheelchair ramp is no longer required, remove the temporary materials and restore the area to existing conditions or as shown in the Plans. For the items required to restore the area to original conditions or as shown in the Plans, measures for payment shall be covered by Contract pay items. If pay items are not included in the Contract, then payment for these items shall be included in Traffic Control-Lump Sum.

c. Temporary Audible Information Device

Temporary audible information devices, when shown in the Plans, shall be installed in compliance with the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)". The devices shall be installed in accordance with the manufacturer's recommendations. Prior to installation, the Contractor shall provide the Engineer with a set of manufacturer's drawings detailing the proper installation procedures for each device. When no longer required, the devices shall remain the property of the Contractor.

150.2 Materials and Traffic Control Devices

150.2.01 Traffic Control Devices

A. NCHRP 350 and MASH

All devices shall be certified in accordance with the Manual for Assessing Safety Hardware (MASH) Test Level 3 and/or the National Cooperative Highway Research Program (NCHRP) 350 Test Level 3 as applicable unless modified by this Special Provision. In addition, temporary work zone devices, including portable barriers, manufactured after December 31, 2019, must have been successfully tested under 2016 edition of MASH requirements. Such devices manufactured on or before this date, and successfully tested under either NCHRP Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives.

B. Approval

All traffic control devices with applicable Qualified Products List (QPL) categories shall come from the appropriate QPL list. Products not on the QPL may be used with an approval letter from the Georgia Department of Transportation Office of Materials and Testing. If there is no applicable QPL, the Contractor shall provide proof of MASH/NCHRP 350 certification. The proof may be a letter or written statement from the manufacturer that the product is MASH/NCHRP 350 approved. Decal certifications are not proof of certification and are not required.

C. Quality Guidelines for All Temporary Traffic Devices

All traffic control devices found to be unacceptable in accordance with the current ATSSA, "Quality Guidelines for Temporary Traffic Devices and Features" regardless of total numbers shall be replaced within twenty-four (24) hours unless stated otherwise in the Specifications, in the Contract, or as directed by the Engineer.

150.2.02 Retroreflectivity Requirements

A. Signs

Reflective sheeting shall meet the requirements of Section 913 and QPL-29

All construction warning signs (black on fluorescent orange) shall meet the minimum reflectivity and color requirements of ASTM D4956 Type XI regardless of the mounting height. All other signs reflectorization shall be in accordance with the Plans, Contract, and "GDOT Signing and Marking Design Guidelines".

B. Channelization Devices

Reflective sheeting shall meet the requirements of Section 913 and QPL-29

All channelization devices (white/ fluorescent orange and white/red) shall meet the minimum retroreflectivity requirements of ASTM D4956 Type VI.

150.2.03 Arrow Panels

Arrow panels shall meet the requirements for MUTCD (6F.61) and QPL-79.

Portable sequential arrow, sequential chevron, or flashing arrow panels shall be a minimum size of forty-eight inches (48") high by ninety-six inches (96") wide with not less than fifteen (15) lamps used for the arrow. The arrow shall occupy virtually the entire size of the arrow panel and shall have a minimum legibility distance of one (1) mile. The minimum legibility distance is the distance at which the arrow panel can be comprehended by an observer on a sunny day, or clear night. Arrow panels shall be equipped with automatic dimming features for use during hours of darkness. The arrow panels shall also meet the requirements for a Type C panel as shown in the MUTCD (6F.61). The sequential or flashing arrow panels shall not be used for lane closure on two-lane, two-way highways when traffic is restricted to one-lane operations in which case, appropriate signing, flaggers and when required, pilot vehicles will be deemed sufficient.

The arrow panels shall be placed on the shoulder at or near the point where the lane closing transition begins. The panels shall be mounted on a vehicle, trailer, or other suitable support. Vehicle mounted panels shall be provided with remote controls. Minimum mounting height shall be seven feet (7') above the roadway to the bottom of the panel, except on vehicle mounted panels which should be as high as practical.

For emergency situations, arrow display panels that meet the MUTCD requirements for Type A or Type B panels may be used until Type C panels can be located and placed at the site. The use of Type A and Type B panels shall be held to the minimum length of time possible before having the Type C panel(s) in operation. The Engineer shall determine when conditions and circumstances are considered to be emergencies. The Contractor shall notify the Engineer, in writing, when any non-specification arrow display panel(s) is being used in the Work.

150.2.04 Channelization Devices

A. General

Channelization shall clearly delineate the travel way through the work zone and alert drivers and pedestrians to conditions created by work activities in or near the travel way. Channelization shall be in accordance with the Plans, Specifications, MUTCD, QPL-34, and the following requirements.

B. Drums

1. Design

Drums shall meet the minimum requirement of the MUTCD (6F.67). Drums shall have six inch (6") wide stripes – white/fluorescent orange.

2. Application

Drums shall be used as the required channelizing device to delineate the full length of a lane closure, shift, or encroachment, except as modified by this Subsection.

3. Longitudinal Channelization

Drums shall be spaced as listed below for various roadside work conditions except as modified by Subsection 150.3.11. Spacing shall be used for situations meeting any of the conditions listed as follows:

a. FORTY FOOT (40') SPACING MAXIMUM

- For difference in elevation exceeding two inches (> 2").
- For healed sections no steeper than 4:1 as shown in Subsection 150.3.11, Detail 150-H..

b. EIGHTY FOOT (80') SPACING MAXIMUM

- For difference in elevation of two inches (≤ 2") or less.
- Flush areas where equipment or workers are within ten feet (≤ 10') of the travel lane.

c. 200 FOOT SPACING MAXIMUM: Where equipment or workers are more than ten feet (> 10') from travel lane. Lateral offset clearance to be four feet (4') from the travel lane.

- For paved areas, eight feet (> 8') or greater in width that are paved flush with a standard width travel lane.
- For disturbed shoulder areas not completed to typical section that are flush to the travel lane and considered a usable shoulder.

4. Removal of Drums

Drums may be removed after shoulders are completed to typical section and grassed. Guardrail and other safety devices shall be installed and appropriate signs advising of conditions such as soft or low shoulder shall be posted before the drums are removed.

C. Vertical Panels

1. Design

All vertical panels shall meet the minimum requirements of the MUTCD (6F.66). All vertical panels shall have a minimum of 270 square inches of retroreflective area facing the traffic and be a minimum of thirty-six inches (≥ 36") high. The vertical panels shall be in addition a minimum eight inches (≥ 8") wide with a stripe width of six inches (6") – white/fluorescent orange.

2. Application

Vertical panels with retroreflectivity less than Type VI can only be used when traffic drums reduce the travel lane to less than ten feet (≤ 10'); vertical panels shall be used to restore the travel lane to ten feet (≥ 10') or greater. No other application of vertical panels with retroreflectivity less than type VI will be permitted.

Vertical panels with a minimum type VI retroreflectivity and six inch (6") stripe may be used for longitudinal channelization in the activity zone where work takes place for short-term stationary lane closures and intermediate-term stationary lane closures. They can be used for lane closures lasting three (3) days and with Engineer approval up to seven (7) days. They shall not be used in the transition zone including the tapers and the tangent lengths between tapers.

D. Cones

1. Design:

All cones shall be a minimum of twenty-eight inches (≥ 28") in height regardless of application and shall meet the requirements of the MUTCD (6F.64).

Retroreflectivity may be deleted from all cones.

2. Application

On interstates, cones shall be prohibited. On all other routes, cones may only be used for longitudinal channelization in the activity zone where work takes place for short-term stationary lane closures. They shall not be used in the transition zone including the tapers and the tangent lengths between tapers. The use of cones for nighttime work will not be permitted. Cones shall not be stored or allowed to be visible on the worksite during nighttime.

Cones may be used for daytime flagging operations including tapers at flagging stations.

E. Barricades

1. Design

Type 3 barricades shall meet the minimum requirements of the MUTCD (6F.68). The Contractor has the option of choosing Type 3 barricades from the QPL-34 or the Contractor may utilize generic barricades that are approved by the Federal Highway Administration (FHWA). When barricades have been specifically crash tested with signs attached, the Contractor has the responsibility to attach the signs as per the manufacturer's recommendations to ensure crashworthiness. If the barricades were not tested with the signs, crashworthy compliance may require that rigid signs be mounted separate from the Type 3 barricade.

The use of Type 1 and Type 2 barricades will not be permitted.

2. Application

Type 3 barricades shall be placed as required by the Plans, the Standards, and as directed by the Engineer.

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

F. Warning Lights

1. Design

All warning lights shall meet the requirements of the MUTCD (6F.83).

2. Application:

a. Type A low-intensity flashing lights shall be used as shown in the Plans, the Standards, and as directed by the Engineer.

b. Type C Steady-Burn lights shall be used as shown in the Plans, the Standards, and as directed by the Engineer.

150.2.05 Flashing Beacon

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

150.2.06 Guardrail

Guardrail shall comply with Section 641 Guardrail and the guardrail standards.

When the removal and installation of guardrail is required, as a part of the Work, the following time restrictions shall apply unless modified by the special conditions:

From the time that the existing guardrail or temporary positive barrier protection is removed, the Contractor has fourteen (14) days to install the new guardrail and anchors. During the interim, the location without guardrail shall be protected with drums spaced at a maximum spacing of twenty feet (20'). The guardrail blunt end is to be treated as a fixed object and shall be protected. The maximum length of rail that can be removed at any time without being replaced with positive barrier protection is a total of 2000 linear feet of existing rail or the total length of one run of existing rail, whichever is less. Based on existing field conditions, the Engineer may review the Work and require that the guardrail be installed earlier than the maximum time allowed.

The Contractor shall install new guardrail, such that traffic exposure to fixed objects is minimized. Within the same workday, temporary attenuators, as defined in Subsection 150.2.10, should be installed on the approach to fixed objects that can't be protected with guardrail. Truck mounted attenuators may be used to shield exposed fixed objects for periods not to exceed fourteen (14) days. No separate payment will be made for truck mounted attenuators, attenuators, or other methods unless provided for in the Contract.

When the roadway is open to traffic, guardrail panels shall be lapped to comply with the directional flow of traffic. Should the staging of the Work require that the lap of the guardrail be changed, this Work shall be completed before the roadway is opened to traffic. The Work to change the lap of any guardrail shall be included in Traffic Control-Lump Sum.

The laps on anchors shall be in accordance with the manufacturer's recommendations and installation instructions. As a result, a trailing anchor may be lapped opposing the flow of traffic.

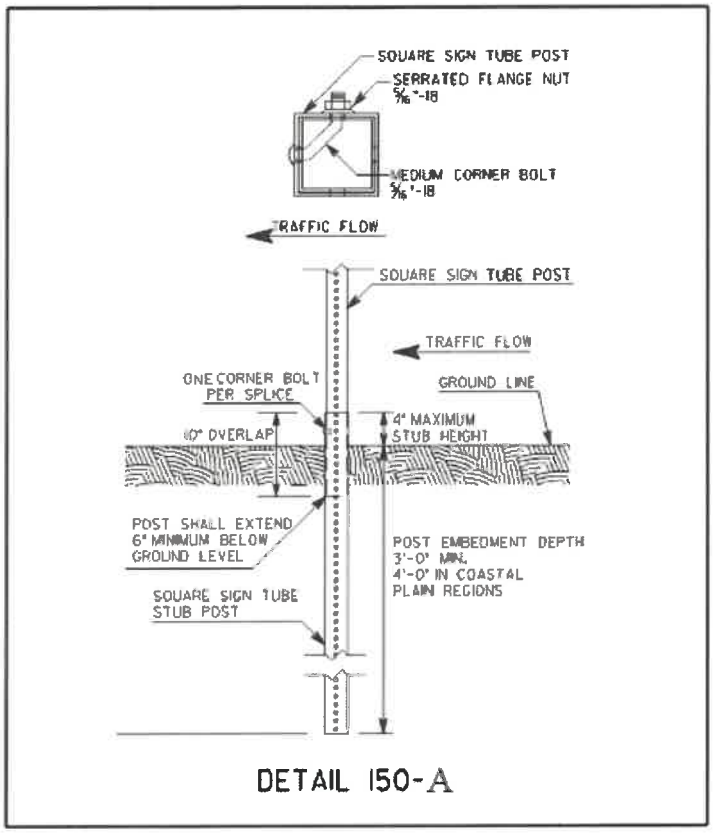
Failure to comply with the above time and quantity restrictions shall be considered as non-compliance under Subsection 150.7.01.

150.2.07 Interim Signs

A. Posts

Permanent mounting height to the bottom of sign shall be seven (7) feet to eight (8) feet measured vertically from the bottom of the sign to the elevation of the near edge of the pavement or from the walkway. Posts for all interim signs should be square tubular post meeting the requirements of Section 911, QPL-35, and Construction Detail T-3A (Type 7, 8, and 9 Square Tube Post Installation Detail). Ground mounted sign(s) that are 48" wide or greater shall be mounted on two posts. For barrier mounted sign, single post mount is allowed. The post(s) shall not extend beyond the top of the sign(s). The sign(s) shall be substantially plumbed and leveled.

Unprotected interim posts shall be spliced as shown in Detail 150-A, unless full length unspliced posts are used. Unprotected post splices will not be permitted any higher than four inches above the ground line to lessen the possibility of affecting the undercarriage of a vehicle. Installation of posts may require establishment of openings in existing pavements, islands, shoulders, etc.



B. Sign Blanks and Panels

All TTC sign blanks and panels should conform to Section 912 of the Specifications. Alternative sign blank materials (composites, polycarbonates, fiberglass reinforced plastics, recycled plastics, etc.) shall have a letter of approval from the Office of Materials and Testing for use as interim construction signs before these materials are allowed to be incorporated into the Work, unless these rigid sign blanks are currently approved as a crashworthy sign blank material under QPL- 34.
Unless specified elsewhere in the Contract, Specifications, Plans, and/or directed by the Engineer, sign sizes are according to the following:

1. All construction signs sizes shall follow the dimensions provided in the MUTCD Table 6F-1 "Temporary Traffic Control Zone Sign and Plaque Sizes" under the column for "Freeway or Expressway".

2. For all other signs used just for staging, the sign sizes shall follow the dimensions provided in the MUTCD Table 2B-1 "Regulatory Sign and Plaque Sizes" for the largest size.

3. Permanent signs used for staging shall be according to Plans.

Plywood blanks or panels will not be permitted.

The use of flexible signs will not be permitted.

For utility work not included in the Contract, the utility Contractor may use flexible signs within the project limits.

150.2.08 Pavement Markings

All temporary traffic striping shall conform to the applicable requirements of Section 652, Section 653, Section 657, Section 658, Section 659, and QPL-46.

A. All Traffic Striping for 45 Days or Less (≤45 Days)

All traffic striping that will be in place for 45 days or less shall be 4 inches or greater in width.

B. All Temporary Striping Beyond 45 days (>45 Days)

All traffic striping applied on intermediate surfaces shall be a minimum 5 inches in width or as shown on the Plans. On final surfaces when temporary striping will be overlaid or eradicated, the temporary striping shall be a minimum 5 inches in width.

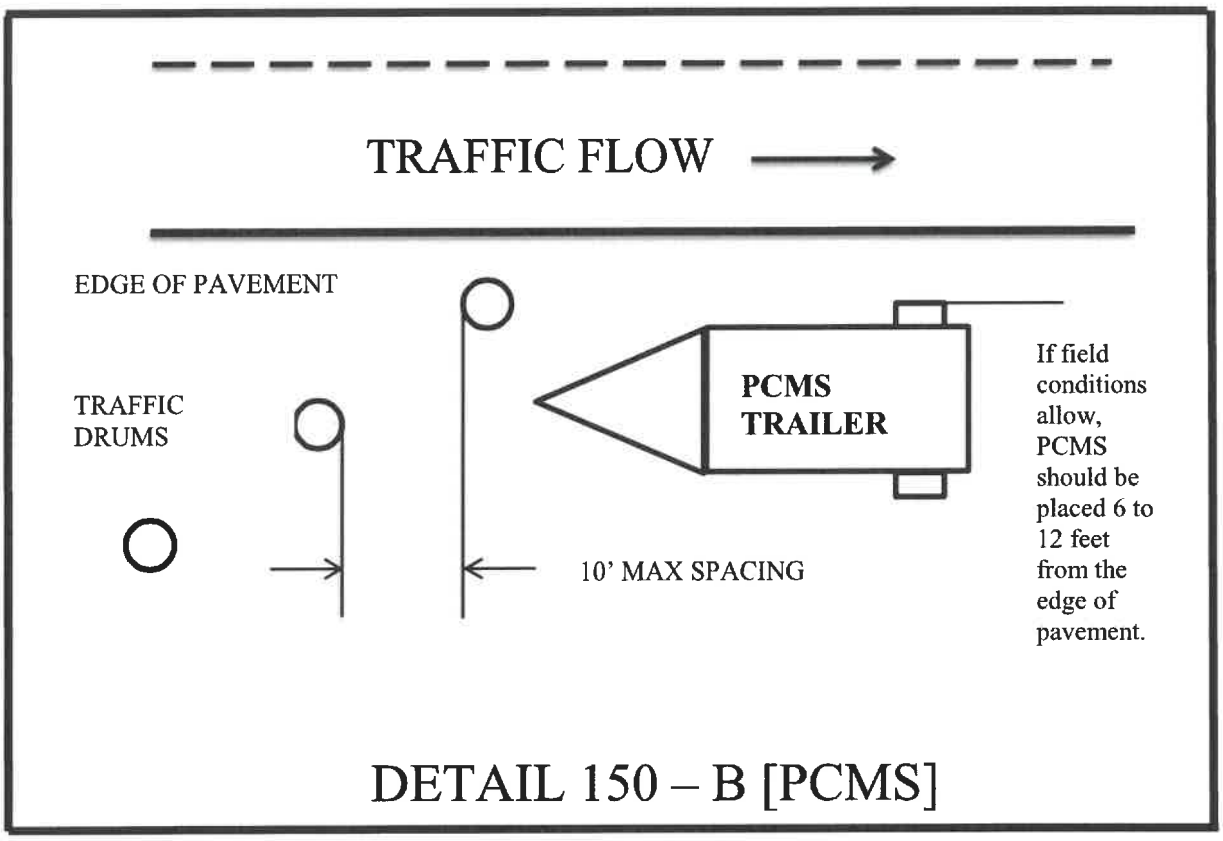
C. All Temporary Traffic Striping on Final Surface

All temporary traffic striping applied to final surfaces which will not be overlaid or grinded may be 4 inches in width or as shown on the Plans.

150.2.09 Portable Changeable Message Signs

When specified, a portable changeable message sign (PCMS) shall meet the minimum requirements of Section 632, MUTCD (6F.60) and be on QPL-82. The maximum amount of messages allowed to be flashed on one PCMS is two phases (flashes). The language and the timing of the messages shall comply with the MUTCD and Section 632. When used as an advanced device, the PCMS should typically be placed ahead of the construction activities. If the PCMS is used as a substitute for another device, then the requirements for the other device apply.

Any PCMS in use, which is not protected by positive barrier protection, shall be delineated by a minimum of three drums that meet the requirement of Subsection 150.2.04.B. The drum spacing shall not exceed a maximum of ten (10') feet as shown in Detail 150-B. When the PCMS is within twenty (20') feet of the opposing traffic flow, the trailing end of the PCMS shall be delineated with a minimum of three drums spaced in the same manner as the approach side of the PCMS.



DETAIL 150 – B [PCMS]

When not in use, the PCMS shall be removed from the roadway, unless protected by positive barrier protection. If the PCMS is protected by positive barrier protection, the sign panel shall be turned away from traffic when not in use.

150.2.10 Portable Impact Attenuators

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

Portable Impact Attenuator Unit/Arrays installation shall conform to the requirements of Section 648, Manufacturer's recommendations and "(Georgia Standard 4960 "Temporary Barrier (End Treatment Options)" and shall be installed at locations designated by the Engineer, and/or as shown on the Plans. When gating attenuators are used, the Contractor shall maintain the appropriate recovery area in accordance with the manufacturers' recommendations.

Generic sand/water loaded modules are prohibited. Manufacturers' sand/water loaded modules with specific arrays that have been NCHRP 350/MASH approved can be used in appropriate locations.

The test level of protection provided shall equal or exceed the speed limit. Test level 3 shall be used for forty-five (45) mph or above.

150.2.11 Portable Temporary Traffic Control Signals

The use of Portable Temporary Traffic Control Signals shall meet the following minimum requirements:

Only two-lane, two-way roadways will be allowed to utilize Portable Temporary Traffic Control Signals.

All portable traffic control signals shall meet the physical display and operational requirements of conventional traffic signals described in the MUTCD.

Each signal face shall have at least three lenses. The lenses shall be red, yellow, and green in color and shall give a circular type of indication. All lenses shall be twelve (12") inches nominal in diameter. A minimum of two signal faces shall face each direction of traffic. A minimum of one signal head shall be suspended over the roadway travel lane in a manner that will allow the bottom of the signal head housing to be not less than seventeen (17') feet above and not more than nineteen (19') feet above the pavement grade at the center of the travel lane. The second signal head may be located over the travel lane with the same height requirements or the second signal head may be located on the shoulder. When the signal head is located on the shoulder, the bottom of the signal head housing shall be at least eight (8') feet but not more than (15') feet above the pavement grade at the center of highway.

Advance warning signage and appropriate pavement markings shall be installed as part of the temporary signal operation.

The signals shall be operated in a manner consistent with traffic requirements. The signals may be operated in timed-mode or in a vehicle-actuated mode. The signals shall be interconnected in a manner to ensure that conflicting movements cannot occur. To ensure that the appropriate operating pattern, including timing is displayed to the traveling public, regular inspections, including the use of accurate timing devices shall be made by the WTCS. If, at any time, any part of the system fails to operate within these requirements then the use of the signal shall be suspended, and the appropriate flagging operation shall begin immediately.

The (WTCS) shall continuously monitor the portable traffic control signal to ensure compliance with the requirements for maintenance under the MUTCD. The signal shall be maintained in a manner consistent with the intention of the MUTCD, with emphasis on cleaning of the optical system. Timing changes shall be made only by the WTCS. The WTCS shall keep a written record of all timing changes.

The portable temporary traffic signal shall have two power sources and shall be capable of running for seven calendar days continuously.

The Contractor shall have an alternate temporary traffic control plan in the event of failure of the signal.

150.2.12 Raised Pavement Markers

Raised pavement markers (RPMs) shall meet the requirements of Section 654 and QPL-76 .

150.2.13 Rumble Strips

Rumble strips incorporated into the Work shall meet the requirements of Section 429 and the MUTCD. Existing rumble strips that are positioned in the traveled way to warn traffic of a stop condition shall be reinstalled prior to opening to traffic. Based on the following requirements:

Intermediate surfaces that will be in use for more than forty-five (45) calendar days shall have rumble strips reinstalled on the traveled way in the area of a stop condition. Non-refundable deductions in accordance with Subsection 150.7.01 will be assessed for any intermediate surface in place for greater than 45 days without rumble strips.

Rumble strips shall be installed on the final surface within fourteen (14) calendar days of the placement of the final surface in the area of the stop condition. Failure to install within fourteen (14) calendar days will result in assessment of non-refundable deductions in accordance with Subsection150.7.01.

Prior to the removal of any rumble strips located in the travel lane, stop ahead (W3-1) warning signs shall be double indicated ahead of the stop condition. These warning signs shall be a minimum of 48 inches by 48 inches. These warning signs shall remain in place until the rumble strips have been reinstalled on the traveled way. Any existing warning signs for the stop ahead condition shall be removed or covered while the 48" X 48" (W3-1) signs are in place. When the

rumble strips have been reinstalled, these warning signs should be promptly removed and any existing signage placed back in service.

150.2.14 Temporary Barriers

A. Design:

Temporary barriers shall meet the requirements of Sections 620. The lengths of advancement should be in accordance with Georgia Standard 4000W "Lengths of Advancement, Clear Zone Distances, and Fill Height Embankment". The approach end of the taper should have 10:1 or flatter ground slope. Temporary barriers shall not be used as a channelization device. Their use is in accordance with MUTCD (6F.85).

B. Application:

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

The reflectors shall be one hundred (100) square inches (ASTM Type VII or VIII/ Type XI) reflective sheeting mounted on flat-sheet blanks. The reflectors shall be mounted approximately two inches above the top of the barrier. The reflectors shall be attached to the barrier with adhesive or by a drilled-in anchor type device. The reflectors shall not be attached to a post or board that is placed between the gaps in the barrier sections.

Approach end of Temporary barrier shall be protected according to Georgia Standard 4960 "Temporary Barrier (End Treatment Options)" or by a portable impact attenuator.

On interstates or other controlled access highways where lane shifts or crossovers cause opposing traffic to be separated by less than forty feet (<40'), portable barrier should be used as a separator.

150.2.15 Temporary Guardrail Anchorage- Type 12

This work consists of the furnishing, installation, maintenance and removal of Temporary Guardrail Anchorage- Type 12 used for Portable Barrier or temporary guardrail end treatment. Materials used in the Temporary Guardrail Anchorage- Type 12 shall meet the requirements of Section 641 of the Specifications and current Georgia Standards and may be new or used. Materials salvaged from the Project, which meet the requirements of Standards, may be utilized if available. The use of any salvaged materials will require prior approval of the Engineer.

Installation of the Temporary Guardrail Anchorage- Type 12 shall conform to the requirements of the Plans, current Georgia Standards and Section 641 of the Specifications. Installation shall also include sufficient additional guardrail and appurtenances to effect the transition and connection to Temporary Concrete Barrier as required by the details in Georgia Standard 4960 "Temporary Barrier (End Treatment Options)".

150.2.16 Temporary Traffic Signals

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

150.3 Construction Requirements

150.3.01 General

A. Implementation Requirements

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

When any shift or change is made to the location of traffic or to the flow patterns of traffic, including pedestrian traffic, the permanent safety features shall be installed and fully operational before making the change. If staging or site conditions prevent the installation of permanent features, then the equivalent interim devices shall be utilized. This work shall also include any necessary removal and reinstallation of guardrail panels to achieve the required panel lap to accommodate the appropriate shift and traffic flow including the final traffic flow configuration. The cost of performing this work shall be included in Traffic Control-Lump Sum.

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

Guardrails including anchors and delineation with properly lapped panels

1) Cable Barrier
2) Impact attenuators
3) Traffic signals
4) Warning devices
5) Pavement markings including words, symbols, stop bars, and crosswalks
6) Roadway signs including regulatory, warning, and guide

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

B. Maintenance of Traffic Control Devices

Traffic control devices shall be in acceptable condition when first erected on the Project and shall be maintained in accordance with Section 104 throughout the construction period. All unacceptable traffic control devices shall be replaced within twenty-four (24) hours. When not in use, all traffic control devices shall be removed, placed or covered so as not to be visible to traffic. All construction warning signs shall be removed within seven (7) calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten (10) calendar days after completion of the Work, the Department shall have the right to remove such devices, claim possession thereof, and deduct the cost of such removal from any monies due, or which may become due, from the Contractor.

C. Traffic Interruption Restrictions

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

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

Incident management - No advanced notice required

Threatening/Inclement weather - twenty-four (24) hours

Holiday, sporting events, unfavorable conditions - Three (3) calendar days

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

D. Work Zone Restrictions

1. Interstate

The Contractor should not simultaneously perform work on both the inside shoulder and outside shoulder on either direction of traffic flow when the Work is within 12 feet of the travel-way. Shoulders can be alternated if areas are separated by at least one-half mile of distance.

2. Non-Interstate Divided Highways

The Contractor should not simultaneously perform work on both the inside shoulder and outside shoulder on either direction of traffic flow when the Work is within 12 feet of the travel-way. Shoulders can be alternated if areas are separated by at least one-half mile distance in rural areas or at least 500 feet of distance in urban areas.

3. Non-Divided Highways

a. The Contractor should not simultaneously perform work on opposite sides of the roadway when the Work is within 12 feet of the travel-way. Shoulders can be alternated if areas are separated by at least one-half mile of distance in rural areas or at least 500 feet of distance in urban areas.

b. On two-lane projects where full width sections of the existing subgrade, base or surfacing are to be removed, and new base, subgrade, or surfacing are to be constructed, the Contractor should maintain one-lane of traffic through the construction area by removing and replacing the undesirable material for half the width of the existing roadway at a time. Replacement should be made such that paving is completed to the level of the existing pavement in the adjacent lane by the end of the workday or before opening all the roadway to traffic.

E. Work Zone Geometric Restrictions

There should be no reduction in the total number of available traffic lanes including turning lanes that existed prior to construction, except as specifically allowed by the Contract and as approved by the Engineer.

Travel lane Clearances: All portions of the Work should maintain the following minimum requirements:

Horizontal: The combined dimensions of the paved shoulder and the roadway surface remaining outside the Work Zone should be no less than sixteen feet (≥ 16') in width at any location.

Vertical: The overhead clearance should not be reduced to less than fifteen feet (≥ 15') at any location.

The restrictions above apply to all shifts, lane closures, on-site detours and off-site detours whether shown in the Contract or proposed by the Contractor. It shall be the responsibility of the Contractor to verify that these minimum requirements have been met before proceeding with any phase of the Work. Two-lane, two-way roadways may have temporary horizontal restrictions of less than sixteen feet (≥ 16') during flagging operations. The minimum horizontal clearance should be restored before the flagging operation is removed.

F. Clear Zone

At the end of the workday, all equipment, materials, and TTC devices not in use should be moved out of the clear zone or behind positive protection. The clear zone is defined by Georgia Standard 4000W "Lengths of Advancement, Clear Zone Distances, Fill Height Embankment". For urban roadway with curb, the minimum set back is six (6') feet from the curb face. If stored behind positive protection, proper lengths of advancement should be maintained. If stored behind guardrail the items shall be a minimum five feet (≥ 5') from the face of the guardrail and not in the recovery zone of the anchor.

The WTCS shall monitor the Work to ensure that all the rocks, boulders, construction debris, stockpiled materials, equipment, tools and other potential hazards are kept clear of the travel lane.

G. Milled Surface Restrictions

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

H. Construction Vehicles

The Contractor's vehicles shall travel in the direction of normal roadway traffic and shall not reverse direction except at intersections, interchanges, or approved temporary crossings. The Contractor may submit a plan requesting that construction traffic be allowed to travel in the opposite direction of normal traffic when it would be desirable to modify traffic patterns to accommodate specific construction activities.

Prior approval of the Engineer shall be obtained before any construction traffic is allowed to travel in a reverse direction. If the Contractor's submittal is approved, the construction traffic shall be separated from normal traffic by appropriate traffic control devices.

The parking of Contractor's and/or workers' personal vehicles within the work area or adjacent to traffic is prohibited. It shall be the responsibility of the WTCS to ensure that any vehicle present at the worksite is necessary for the completion of the Work.

I. Environmental Impacts

The Contractor shall ensure that dust, mud, and other debris from construction activities do not interfere with normal traffic operations or adjacent properties.

J. Existing Street Lights

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

K. Nighttime Work Lighting

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

L. Removal/Reinstallation of Miscellaneous Items

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

150.3.02 Personnel – Worker Safety Apparel

In accordance with MUTCD (6D.03) all workers, within the right-of-way who are exposed either to traffic or to work vehicles and construction equipment within the TTC zone, shall wear high-visibility safety apparel that meets the Performance Class 2 or better.

150.3.03 Signage - General

A. Signing Requirements of the Temporary Traffic Control (TTC) Plan

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

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

All existing illuminated signs shall remain lighted and be maintained by the Contractor.

Existing street name signs shall be maintained at street intersections.

Refer to section **150.2.05.B. Sign Blanks and Panels** for size and material requirements.

B. Conflicting or Non-Applicable Signs

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

Failure to promptly eliminate conflicting or non-applicable signs shall be considered as non-performance under Subsection 150.7.01.

C. Removal of Existing Signs and Supports

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

D. Interim Guide, Warning and Regulatory Signs

Interim guide, warning, or regulatory signs required to direct traffic and pedestrians shall be furnished, installed, reused, and maintained by the Contractor in accordance with the MUTCD, the Plans, Special Provisions, Special Conditions, or as directed by the Engineer. These signs shall remain the property of the Contractor. When the signs are used for long-term stationary operations as defined MUTCD (6G.02), the bottom of all interim signs shall be mounted seven feet (7') to eight feet (8') above the level of the pavement edge or sidewalk. The signs offset should

be six feet (6') to twelve feet (12') from the pavement edge or two feet (≥ 2') minimum for sidewalks according to MUTCD (6F-1). Special Conditions under Subsection 150.6 may modify this requirement.

Portable signs may be used when the duration of the Work is less than three (3) days or as allowed by the special conditions in Subsection 150.6. Portable interim signs shall be mounted a minimum of one foot (≤ 1') above the level of the pavement edge for directional traffic of two (2) lanes or less and at seven feet (7') for directional traffic of three (3) or more lanes according to MUTCD (6F-2). Signs shall be mounted at the height recommended by the manufacturer's crashworthy testing requirements.

All sign blanks shall be rigid whether the sign is mounted as a portable sign, on a Type III barricade or as a permanent mount height sign. Utilities and their subcontractors working in the project limits, and not included in the project Contract, may use non-rigid signs.

E. Existing Special Guide Signs

Existing special guide signs on the Project shall be maintained until conditions require a change in location or legend content. When change is required, existing signs shall be modified and continued in use if the required modification can be made within existing sign borders using design requirements (legend, letter size, spacing, border, etc.) equal to that of the existing signs, or of Subsection 150.3.E.2. Differing legend designs shall not be mixed in the same sign.

1. Special Guide Signs

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

2. Interim Special Guide Signs

   When it is not possible to utilize existing signs, either in place or relocated, the Contractor shall furnish, erect, maintain, modify, relocate, and remove new interim special guide signs in accordance with the Plans or as directed by the Engineer. Interim special guide signs that may be required in addition to, or a replacement for, existing expressway and freeway (interstate) signs shall be designed and fabricated in compliance with the minimum requirements for guide signing contained in Part 2E "Guide Signs – Freeway and Expressway" of the MUTCD. All interstate shields on these signs shall be 48 inches and 60 inches for two-numeral and three-numeral routes, respectively.

   The road name of the exit or route shield shall be placed on the exit gore sign.

3. Interim Overhead Guide Sign Structures

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

4. Permanent Special Guide Signs

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

F. Stop Sign Regulated Intersections

For intersections that utilize stop sign(s) to control the flow of traffic and to restrict the movement of vehicles, the stop sign(s) shall be maintained for the duration of the Work or until such time that the stop condition is eliminated or until an interim or permanent traffic signal can be installed to provide proper traffic control. The traffic signal shall be installed and properly functioning before the removal of the existing stop sign(s) is permitted. If the existing intersection is enhanced traffic control features, such as stop lines, double indicated stop signs, oversized signs, advanced warning stop ahead signs, rumble strips on the approaches or flashing beacons located overhead or on the shoulders then these features shall be maintained for the duration of the project or until the permanent traffic control plan has been implemented.

Whenever the staging of the Work requires that the traveled way be relocated or realigned the Contractor shall reinstall all enhanced traffic control features noted above on the newly constructed sections of the Work. The cost of relocating the stop lines, stop signs, advanced warning signs, the rumble strips and the flashing beacons shall be included in the price bid for Traffic Control - Lump Sum unless individual pay items are included in the Contract for rumble strips and/or flashing beacons. When pay items are included in the Contract for rumble strips or flashing beacons then these items will be paid per each.

When staging requires the relocation or realignment of an existing stop condition, it may be necessary to consider the addition of enhanced traffic control features even though none existed at the original location. Horizontal and vertical alignment changes at a new location may have decreased or restricted sight distance or the stop condition may occur sooner than in the previous alignment. If these conditions occur, then the Engineer and/or the WTCS should consider additional measures to enhance the motorist's awareness of the changes even though the staging plans may not address enhanced features. Stop signs should be a minimum of 36 inches for interim situations. The use of 48 inch stop signs may be warranted under project specific conditions. Flags may be used on interim/permanent stop signs that are mounted at seven (7') feet in height for a short duration in order to direct additional attention to a new or relocated stop sign(s). Flags should not be used for durations exceeding two weeks unless unusual or site specify conditions warrant a longer period of time. The use of Type "A" flashing red light(s) attached to the stop sign(s) may be appropriate during the same period that the flags are in use to increase attention.

The use of rumble strips and/or PCMS may be considered. The use of new rumble strips, where none previously existed, shall have the prior approval of District Traffic Operations before being included as part of the temporary traffic control plan. The message(s) displayed on any PCMS shall have the prior approval of the Engineer and the message(s) shall be included as part of the TTC plan for the interim staging.

The placement of any additional interim ground mounted signs and posts or stop lines shall be considered as incidental to the price bid for Traffic Control - Lump Sum. The installation of rumble strips, flashing beacons or the use of Portable Changeable Message Signs (PCMS) shall be considered as Extra Work unless pay items are included in the Contract.

G. Low Shoulder Signage

1. Low Shoulder for Construction/Reconstruction/Resurfacing Projects

   "Low Shoulder" (W8-9) signs shall be erected when a difference in elevation less than four (< 4') feet from the traveled way, exceeds one inch (> 1") but does not exceed three inches (≤3") between the travel lane and any type of shoulder.

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

2. Shoulder Drop-Off for Construction/Reconstruction/Resurfacing Project

"Shoulder Drop-Off" (W8-17) signs shall be used when a difference in elevation, less than four feet (< 4') from the traveled way, exceeds three inches (> 3") and is not protected by positive barrier protection. These warning signs shall be placed in advance of the drop-off.

The spacing of the signs shall not exceed one (1) mile and the signs shall be placed immediately past each crossroad intersection. The "Shoulder Drop-Off" signs shall remain in place until the difference in elevation is eliminated and the shoulder has been dressed and permanently grassed for a minimum of thirty (30) calendar days. These signs shall be furnished, installed, maintained, and removed by the Contractor as part of Traffic Control-Lump Sum. These signs shall be black borders on fluorescent orange background.

H. Bump Signage

A bump sign (W8-1) shall be utilized when a transverse joint in the pavement structure has a vertical difference in elevation of three quarters (≥ 3/4") of an inch or greater in depth with no horizontal taper to ramp the traffic from one elevation to the other. This condition typically occurs at approach slabs during pavement milling operations and at transverse joints in asphaltic pavement lifts. Other conditions include utility and storm drainage repairs that require concrete placement for patching and/or steel plating.

The W8-1 sign shall be placed sufficiently in advance to warn the motorist of the condition.

I. Sign Visibility

All existing, interim and new permanent signs shall be installed to be completely visible and legible for an advance distance in compliance with the MUTCD. Any clearing required for maintaining the line of sight to existing, interim or permanent signs shall be done as part of the requirements of the TTC plan. The clearing shall include any advance warning signs, both interim and permanent, that are installed as a part of the Work including advance warning signs that are installed outside the limits of the project. Limbs, brush, construction equipment and materials shall be kept clear of the driver's line of sight to all signs that are part of the TTC plan.

150.3.04 Advance Warning Signs

A. Project Signs - All Type of Highways

Advance warning signs shall be placed ahead of the work area in accordance with Part 6 of the MUTCD and unless noted below shall include a series of at least three advance road work (W20-1) signs placed at the termini of the project. The series shall have the legend ROAD WORK (1500 FEET, 1000 FEET, AND 500 FEET).

At grade intersecting roadways and on-ramps shall be signed with a minimum of one ROAD WORK AHEAD sign.

When work terminates at a "T" intersection, a minimum of one "ROAD WORK AHEAD" sign shall be placed in advance of the intersection and one "END ROAD WORK" sign shall be placed at the termination end of the intersection. Field conditions may require the use of additional warning signage.

1. State Routes

Advanced Warning Signs on State Routes shall be a minimum dimension of forty-eight inches by forty-eight inches (48" x 48"). When a State Route intersects a project which consists of adding travel lanes, reconstructing an existing roadway or new location work, the State Route approaches shall have a minimum of three (W20-1) advanced warning signs (1500 ft., 1000 ft., 500 ft.). The termination end of an intersecting State Route shall have END ROAD WORK signage.

The W20-1 signs shall be placed at the termini of the project or sufficiently in advance of the termini to allow for lane shifts, lane closures and other activities which may also require advanced warning signs. The advanced warning signs for the project should not overlap with the advanced warning signs for lane shifts, lane closures, etc.

The length of a work zone should be held to the minimum length required to accomplish the Work. If a project has multiple individual worksites within the overall limits of the project, each site should be signed individually if the advance warning signs for each site can be installed without overlapping an adjacent worksite. As soon as the work is completed at any individual site, the warning signs shall be removed from that site.

Project mileage indicated on the G20-1 sign shall be the actual project mileage rounded up to the nearest whole mile. Projects less than two (< 2) miles in length or individual worksites that are part of a multiple worksite project may delete this sign. The G20-1 sign shall be forty-eight inches by twenty-four inches (48" x 24") and the G20-2 sign shall be forty-eight inches by twenty-four inches (48" x 24").

2. Interstate, Limited Access and Multilane Divided Highways

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

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

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

3. Ramp Work on Limited Access Highways

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

When work is restricted to ramp reconstruction or widening activities, the advance warning signs on the mainline section of the limited access highway shall be limited to the use of portable advance warning signs. These portable advance warning signs shall only be utilized when work activity is within the gore point of the ramp and the mainline traveled way or work is active in the acceleration/deceleration lane adjacent to the mainline traveled way. Portable advance warning signs (W20-1: 1500 ft. /1000 ft. /500 ft.) shall be installed on the traveled way of the limited access highway when the above conditions are present. The advance warning signs shall be installed only in one direction where work is active. All portable signs shall be double indicated. When work is not active, the ramp work shall be advanced warned by the use of a single forty-eight inches by forty-eight inches (48" x 48") "ROAD WORK AHEAD" (W20-1) with an "ON RAMP" plaque (W13-4p) sign along the right shoulder of the mainline traveled way prior to the beginning of the taper for the deceleration lane. Differences in elevation shall be in compliance with the requirements of Subsection 150.3.11 prior to the removal of the portable (W20-1) advanced warning signs from the mainline.

B. Highway Work Zone

In accordance with Georgia Code, O.C.G.A. § 40-6-188, all sections or segments of the roadway under construction or reconstruction shall be signed as a Highway Work Zone except non-state highway two-lane two-way resurfacing projects. Two conditions can be applied to a Highway Work Zone. Condition 1 is when no reduction in the existing speed limit is required. Condition 2 is when worksite conditions require a reduction of the speed limit through the designated Work Zone. Properly marking a Highway Work Zone shall include the following minimum requirements:

1. No Reduction in the Existing Posted Speed Limit in Highway Work Zone

a. Signage shall be posted at the beginning point of the Highway Work Zone warning the traveling public that increased penalties for speeding violations are in effect. The beginning point of Highway Work Zone is at the project limits, start of work zone, or at the start of the first taper. The HWZ-2 sign shall be placed a minimum of 600 feet in advance of the Highway Work Zone and shall not be placed more than 1000 feet in advance of the Work Zone. If no speed reduction is required, it is recommended that the HWZ-2 be placed at 750 feet from the work area between the ROAD WORK 500 FT. and the ROAD WORK 1000 FT. signs.

   HWZ-2 signs shall be placed at intervals not to exceed one mile for the length of the project. HWZ-2 signs should be placed on the mainline after all major intersections except State Routes. State Routes shall be signed as per the requirements for intersecting roadways below.

b. The existing speed limit shall be posted at the beginning of the Work Zone. Existing Speed Limit signs (R2-1) shall be maintained.

c. Intersecting state routes shall be signed in advance of each intersection with the Work Zone with an HWZ-2 sign to warn motorists that increased fines are in effect. All other intersecting roadways that enter into a designated Highway Work Zone may be signed in advance of each intersection with the Work Zone. When construction equipment and personnel are present in the intersection on the mainline of a multi-lane roadway, the intersecting side roads shall be signed in advance with HWZ-2 signs. As soon as the work operation clears the intersection, the signage may be removed.

d. Sign HWZ-3 shall be posted at the end of the Highway Work Zone indicating the end of the zone and indicating that increased penalties for speeding violations are no longer in effect.

e. When a designated Highway Work Zone is no longer necessary, all signs shall be removed immediately.

2. Reducing the Speed Limit in a Highway Work Zone

Highway Work Zone signs shall be posted as required in Condition 1 above and in accordance with Detail 150-C.

A "Reduce Speed Limit Ahead" (W3-5) sign shall be posted 600 feet prior to the reduced speed limit.

Then a "Speed Limit" signage (R2-1) for the reduced speed limit shall be erected at the beginning of the Work Zone. Additional signs shall be placed at whichever is least:

a. on non-interstate roads after every junction with a numbered (state or U.S.) route.

b. on interstates entrance ramp 1,500 feet from the end of the entrance taper. Detail 150-D

c. on non-interstate and interstate, a maximum spacing of no greater than one (1) mile apart.

On multi-lane divided highways, the speed limit signs shall be double indicated when the reduced speed is in use.

Additional signs may be necessary to adjust for actual field conditions.

For limited access (interstate) highways and controlled access multi-lane divided highways, the posted speed limit shall be reduced as required below.

When any one or more of the following conditions exist and the existing speed limit is sixty-five (65) mph or seventy (70) mph, the speed limit shall be reduced by ten (10) mph. If the existing speed limit is sixty (60) mph, the speed limit should be reduced by five (5) mph. If the existing speed limit is fifty-five (≤ 55) mph or less, the Contractor can only reduce the speed limit with the prior approval of the Engineer. The reduction in the speed limit shall be no greater than ten (10) mph:

a) Lane closure(s) of any type and any duration.

b) The difference in elevation exceeds two inches (> 2") adjacent to a travel lane as shown in Subsection 150.3.11, Detail 150-E, Detail 150-F.
c) Any areas where equipment or workers are within ten feet (10') of a travel lane.
d) Temporary portable concrete barriers located less than two feet (2') from the traveled way.
e) As directed by the Engineer for conditions distinctive to this project.

When the above conditions are not present, the speed limit shall be immediately returned to the existing posted speed limit. A speed reduction shall not be put in place for the entire length of the project unless conditions warranting the speed reduction are present for the entire project length. All existing speed limit signs within the temporary speed reduction zone shall be covered or removed while the temporary reduction in the speed limit is in effect. All signs shall be erected to comply with the minimum requirements of the MUTCD.

At a minimum, the following records shall be kept by the WTCS:

a) Identify the need for the reduction.
b) Record the time of the installation and removal of the temporary reduction.
c) Fully describe the location and limits of the reduced speed zone.
d) Document any accident that occurs during the time of the reduction.

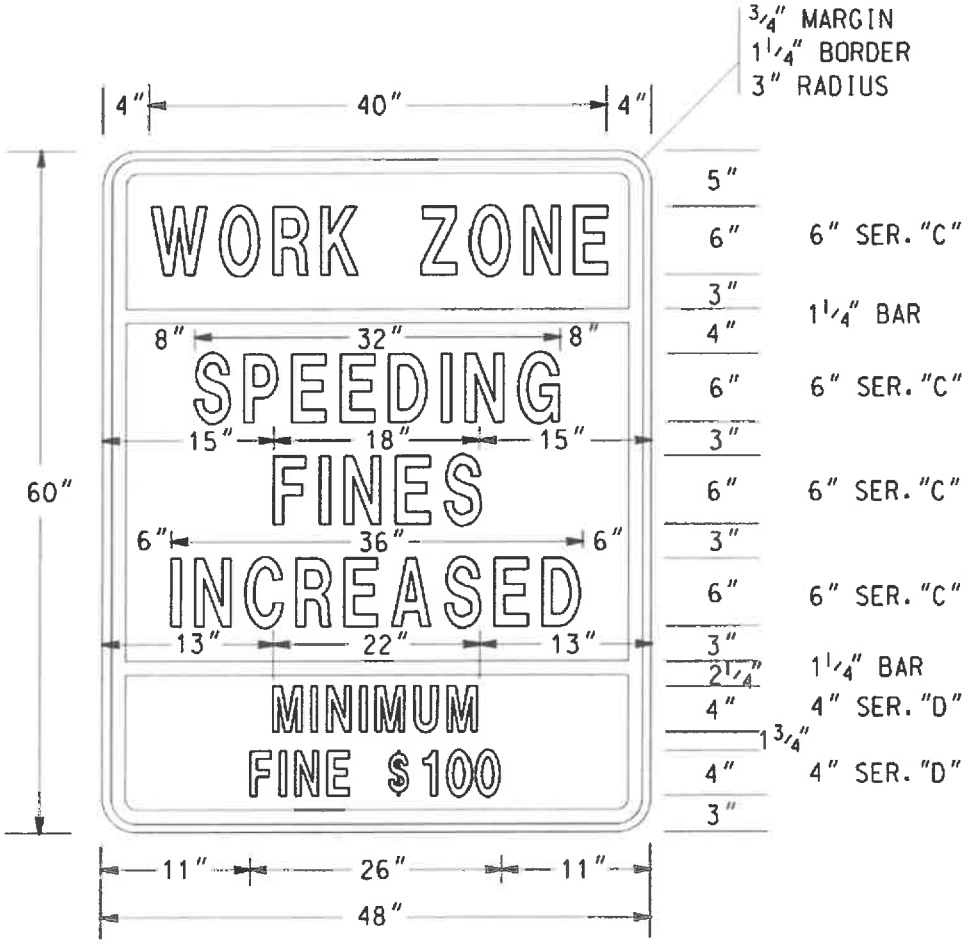
A copy of the weekly records for reduced speed zones shall be submitted to the Engineer.

When a pilot vehicle is used on a two-lane two-way roadway, the speed limit should not be reduced. For special conditions specific to the Work, on two-lane two-way roadways or multi-lane highways, the Contractor may reduce the posted speed limit with the prior approval of the Engineer.

3. Variable Speed Limit Zones

Projects that are within or extends into variable speed limit zones shall be posted according to condition 1 with HWZ-1, HWZ-2, and HWZ-3 signs. No additional "speed limit" signs, (R2-1), shall be posted. Any reduction or increase in speed limits will be controlled by the normal operation of the variable speed limit system.

Upon request, a maximum speed limit of fifty-five (55) mph may be set for the project limits.

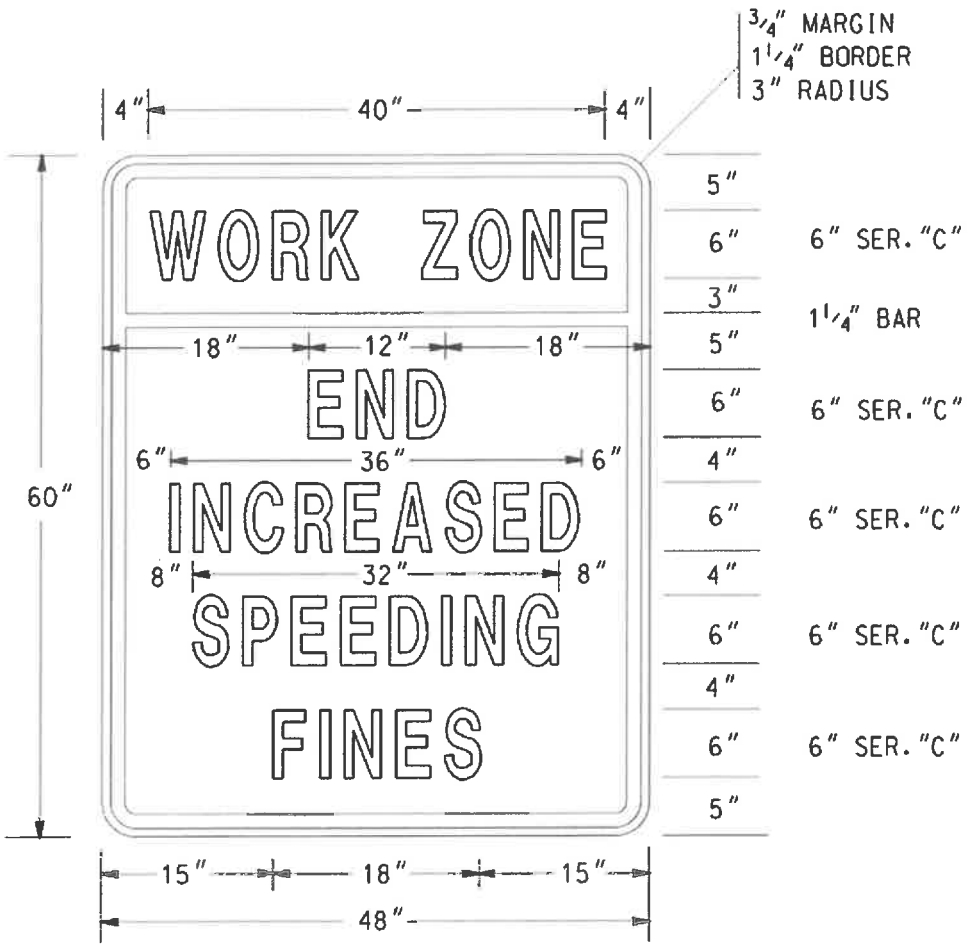


HWZ-2

COLORS
TOP PANEL
LEGEND & BORDER - BLACK (NON-REFL)
BACKGROUND - FLUORESENT ORANGE

MIDDLE & BOTTOM PANELS
LEGEND & BORDER - BLACK
BACKGROUND - WHITE

NOTES:
1. ALL HWZ-2 SIGN PANELS SHALL BE RIGID.
2. THE SIZE OF THE HWZ-2 SIGN SHALL NOT BE REDUCED FOR USE ON TWO-LANE ROADWAYS.



HWZ-3

COLORS

TOP PANEL

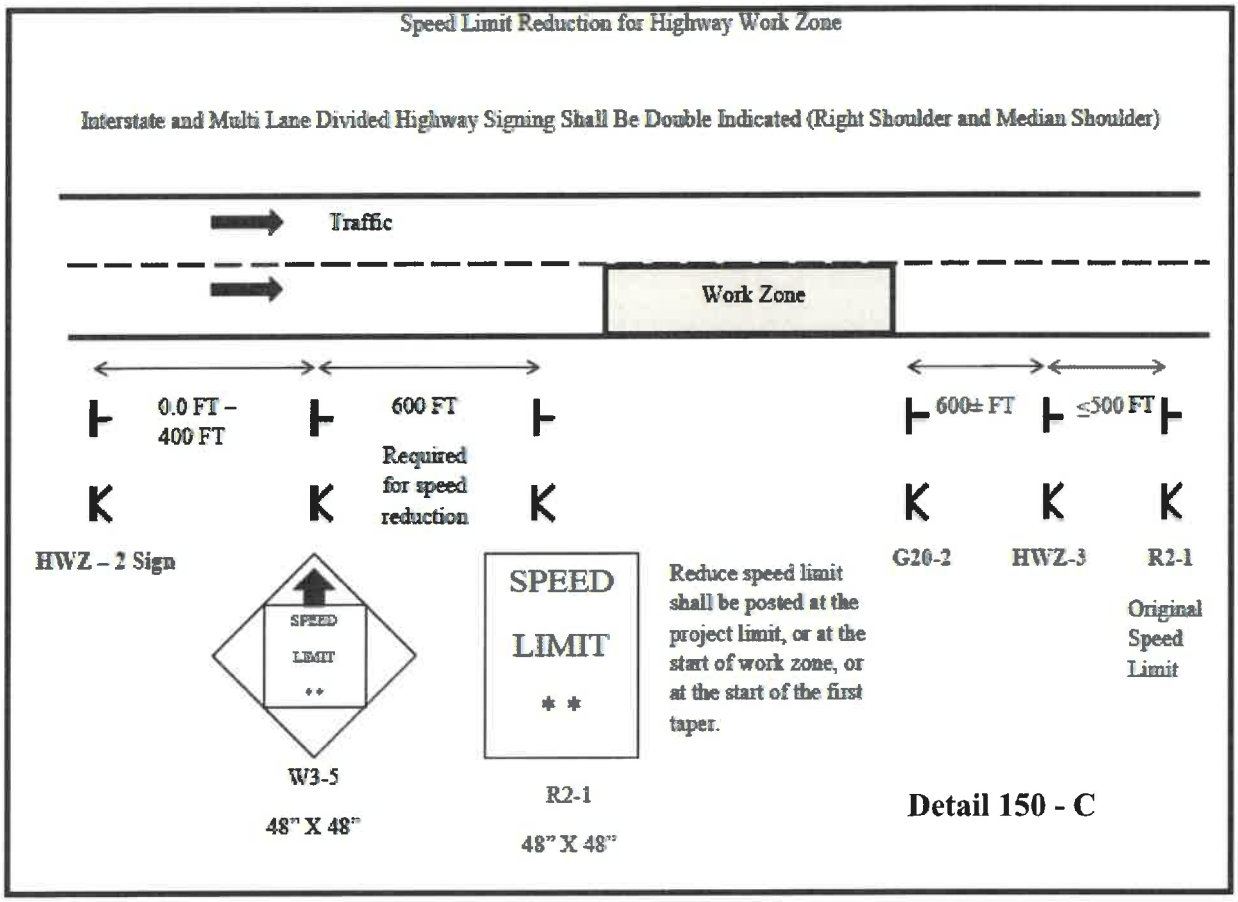
LEGEND & BORDER - BLACK (NON-REFL)
BACKGROUND - FLUORESENT ORANGE

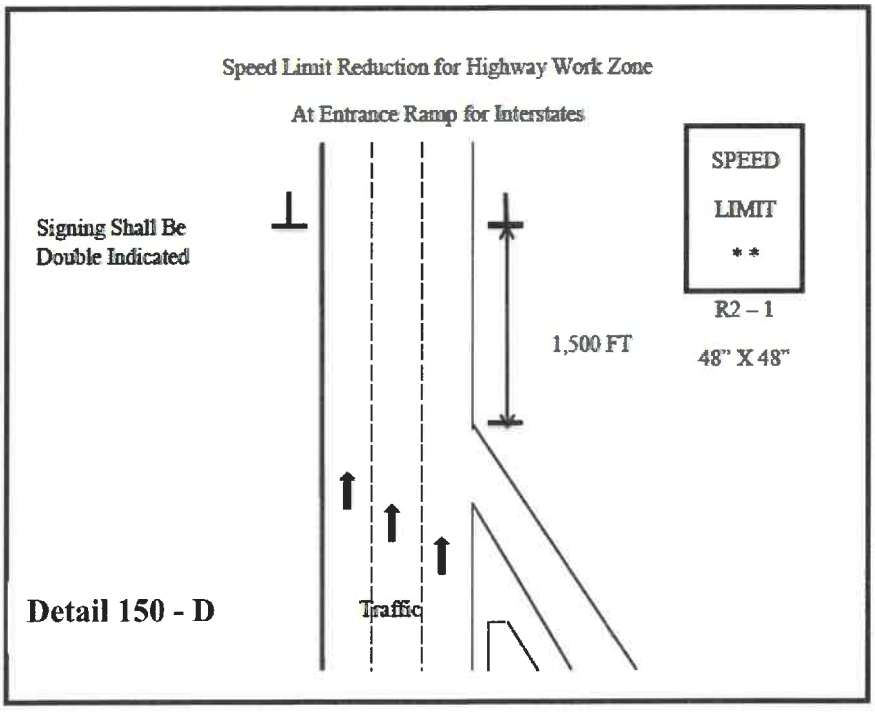
BOTTOM PANEL

LEGEND & BORDER - BLACK (NON-REFL)
BACKGROUND - WHITE

NOTES:

1. ALL HWZ-3 SIGN PANELS SHALL BE RIGID.
2. THE SIZE OF THE HWZ-3 SIGN SHALL NOT BE REDUCED FOR USE ON TWO-LANE ROADWAYS.


Speed Limit Reduction for Highway Work Zone
Interstate and Multi Lane Divided Highway Signing Shall Be Double Indicated (Right Shoulder and Median Shoulder)
Traffic
Work Zone
0.0 FT – 400 FT
600 FT
Required for speed reduction
600± FT
≤500 FT
HWZ – 2 Sign
G20-2
HWZ-3
R2-1
Original Speed Limit
SPEED LIMIT
* *
Reduce speed limit shall be posted at the project limit, or at the start of work zone, or at the start of the first taper.
W3-5
48" X 48"
R2-1
48" X 48"
Detail 150 - C


Speed Limit Reduction for Highway Work Zone
At Entrance Ramp for Interstates
Signing Shall Be Double Indicated
SPEED LIMIT
* *
R2 – 1
48" X 48"
1,500 FT
Traffic
Detail 150 - D

C. Installation/Removal of Work Area Signage

No payment will be made for Traffic Control-Lump Sum until the Work has actually started on the Project. The installation of traffic control signage does not qualify as the start of work. Advanced warning signs shall not be installed until the actual beginning of work activities. Any permanent mount height signs installed as the work is preparing to start shall be covered until all signs are installed unless all signs are installed within seven (≤ 7) calendar days after beginning installation.

All temporary traffic control devices shall be removed as soon as practical when these devices are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate, shall be removed or covered.

All construction warning signs shall be removed within seven (≤ 7) calendar days after time charges are stopped or pay items are complete. If traffic control devices are left in place for more than ten (> 10) calendar days after completion of the Work, the Department shall have the right to remove such devices, claim possession thereof, and deduct the cost of such removal from any monies due, or which may become due, the Contractor.

CORRECTIVE LIST WORK: Portable signs shall be utilized to accomplish the completion of all corrective list items, if the corrective list is the only work being performed. The portable signs shall be removed daily. All permanent mount height signs shall be removed prior to the beginning of the corrective list only work, except "Low/Soft Shoulder" signs and any signs that have the prior written approval of the Engineer to remain in place while the corrective list work is in progress.

Failure to promptly remove the construction warning signs within the seven (7) calendar days after the completion of the Work or failure to remove or cover signs when work is suspended for short periods of time shall be considered as non-performance under Subsection 150.7.01.

150.3.05 Shoulder/Lane Closures

A. Approval/Restrictions

All shoulder closures and lane closures of any type or duration shall have the prior approval of the Engineer.

1. Closure Length

The length of a shoulder closure and a lane closure shall not exceed two (2) miles in length excluding the length of the tapers unless the prior approval of the Engineer has been obtained. The Engineer may extend the length of the closure based upon field conditions; however, the length of a work zone should be held to the minimum length required to accomplish the Work. Shoulder closure and Lane Closures shall not be spaced closer than one mile. The advanced warning signs for the Project should not overlap with the advanced warning signs for lane shifts, lane closures, etc.

2. Duration

The first (7) calendar days in an Urban area and the first three (3) calendar days in a Rural area of any lane closure shall be signed and marked as per Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway" or Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway". However, lane closures that exist for a duration longer than three (> 3) calendar days may be signed and marked as per the details in Georgia Standard 9121 "Tapers, Signs, and Markings for Passing Lanes", provided the prior approval of the Engineer is obtained. The approved lane drop shall utilize a PCMS and only the signs and markings shown for the termination end of the lane drop in Georgia Standard 9121. All warning signs in the lane drop sequence shall be used. Drums may be substituted for the Type I Crystal Delineators at the same spacing.

B. Shoulder Closures

In accordance with MUTCD 6G.07, when paved shoulders, having a width of eight feet (≥ 8') or more are closed, at least one (1) advance warning sign shall be used. The sign(s) should read SHOULDER CLOSED (W21-5a). The signs are only posted on the side with the shoulder closure. Where the downstream end of the shoulder closure extends beyond the distance that can be perceived by road users, a supplementary plaque bearing the message NEXT XX FEET(W16-4P) or MILES (W7-3aP) should be placed below the SHOULDER CLOSED (W21-5a) sign. These signs shall be placed 500 feet prior to the shoulder closure. For multi-shoulder closures, the Shoulder Closed sign shall be repeated after two (2) miles at 500 feet prior to the next shoulder closure.

A shoulder closure will require a shoulder taper of (1/3) L (L=merging taper length). Traffic drums shall be used for the taper. Arrow boards are not required.

If positive barriers are used to close the shoulder, the taper and drums shall be in accordance with Standard 4960, Temporary Barrier (End Treatment Options). The approach end of the barrier taper should be 10:1 or flatter slope.

C. Lane Closure

1. Advance Warning Signs

The Advance Warning signs shall be in accordance with MUTCD and Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway" and Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway".

When the Temporary Traffic Control zone already has advanced warning (W20-1) signs installed the W20-1 signs required for lane closures under Standard 9106 and 9107 should be eliminated.

For Interstate, Limited Access and Multi-lane Divided Highways, an additional PCMS shall be placed one (1) mile in advance of a lane closure with a message denoting the appropriate lane closure one (1) mile ahead. No other message shall be displayed on this PCMS. The PCMS shall be placed on the outside shoulder in accordance with Detail 150-B [PCMS]. This is in addition to the other traffic control devices required by Standard 9106.

At the discretion of the Engineer, the Contractor may start placing advance warning signs a half-hour (1/2 hr.) prior to the lane closure.

2. Transition Area – Taper

Drums shall be used on all transition tapers. If traffic drums with retroreflectivity of less than type VI are used for a merge taper that exists into the night, all drums located in the taper shall have, for the length of the taper only, a six inch (6") fluorescent orange (ASTM Type VI, VII, VIII, IX or X) reflectorized top stripe on each drum. The top six inch (6") stripe may be temporarily attached to the drum while in use in a taper. The Engineer may allow the fluorescent orange reflectorized six inch (6") top stripe on each drum in a merging taper to remain in place during daylight hours provided there is a lane closure(s) with a continuous operation that begins during one nighttime period and ends during another nighttime period. All drums that have the six inch (6") top stripe permanently attached shall not be used for any other conditions.

In accordance with MUTCD (6C.08), the minimum length for a merging taper for a lane closure on the travel way shall be as shown in Table 150-1:

TABLE 150-1

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

If site conditions require a longer taper, then the taper shall be lengthened to fit particular individual situations.

The length of shifting tapers should be at least one-half (1/2) L.

Multiple Lane Closures:

a. A maximum of one (1) lane at a time shall be closed with each merging taper.

b. A minimum tangent length of two (≥ 2) L shall be installed between each individual lane closure taper. The tangent length is part of the transition area. Therefore, only traffic drums can be used in the tangent.

3. Activity Area

The activity area consists of a buffer and the work space. Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway" states "Buffer zones of 300' minimum, 500' desirable are required for tangent sections and shall be increased for horizontal or vertical curves due to sight distance considerations"

Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway" requires a fifty feet (50') buffer. The buffer shall be increased for horizontal or vertical curves due to sight distance considerations"

The channelization devices are spaced at a maximum of eighty feet (80').

4. Termination Area

Georgia Standard 9106 "Traffic Control Detail for Lane Closure on Multi-Lane Divided Highway" requires a 150 feet buffer and a minimum 200 feet downstream taper.

Georgia Standard 9107 "Traffic Control Detail for Lane Closure on Multi-Lane Undivided Highway" requires 150 feet downstream taper.

D. Removal of Lane Closures

To provide the greatest possible convenience to the public in accordance with Section 107, the Contractor shall remove all signs, lane closure markings, and devices immediately when lane closure work is completed or temporarily suspended for any length of time or as directed by the Engineer. All portable signs and portable sign mounting devices shall be removed from the roadway to an area which will not allow the sign to be visible and will not allow the sign or sign mounting device to be impacted by traffic. All devices shall be stored beyond the clear zone or behind positive protection.

E. Exit and Entrance Ramps

On multi-lane highways, where traffic has been shifted to the inside lanes, the exit and entrance ramps shall have drums placed on both sides of the ramp. This requirement will apply to any situation where traffic is shifted to contra flows or inside staging lanes to facilitate reconstruction work in the vicinity of exit and entrance ramps. The temporary ramp taper length should be greater than, or equal to, the existing taper length. Interim EXIT gore signs shall be placed at the ramp divergence. The "EXIT OPEN" sign shown in Figure TA-42 of the MUTCD shall be utilized. For exit ramps, drums spacing shall be decreased to ten feet (10') for 200 feet in advance of the temporary gore and be decreased to ten feet (10') for the first 100 feet of the temporary gore, and throughout the exit ramp. For on-ramps, drums should be used 200 feet prior to the ramp and end 100 feet past the merge taper. The drum spacing for the on ramp may be decreased but should not obstruct the view of the drivers i.e. for the ramp vehicles.

150.3.06 Traffic Pacing Method

A. Pacing of Traffic

With prior approval from the Engineer, traffic may be paced allowing the Contractor up to twenty (20) minutes maximum to work in or above all lanes of traffic for the following purposes:

1. Placing bridge members or other bridge work.
2. Placing overhead sign structures.
3. Other work items requiring interruption of traffic.

The Contractor shall provide a uniformed law enforcement officer with patrol vehicle and blue flashing light for each direction of pacing. The law enforcement officer, Engineer, and flaggers at ramps shall be provided with a radio which will provide continuous contact with the Contractor.

When ready to start the work activity, the law enforcement vehicle will act as a pilot vehicle slowing the traffic, thereby providing a gap in traffic allowing the Contractor to perform the Work. Any on-ramps between the pace and the work area shall be blocked during pacing of traffic, with a flagger properly dressed and equipped with a Stop/Slow paddle. Each ramp should be opened after the law enforcement vehicle has passed.

Pilot vehicles shall travel at a safe pace speed. The Contractor shall provide a vehicle to proceed in front of the law enforcement vehicle and behind the other traffic in order to inform the Contractor's work force when all vehicles have cleared the area.

Traffic should not be permitted to stop during pacing unless approved by the Engineer.

B. Methods of Signing for Traffic Pacing

At a point not less than 1,000 feet in advance of the beginning point of the pace, the Contractor shall place a PCMS sign with the message "TRAFFIC SLOWED AHEAD **EXPECT** SHORT DELAY".

150.3.07 Flagging Operations

A. Flaggers

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

B. Flagger Certification

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

National Safety Council
American Traffic Safety Services Association (ATSSA)

On-line classes are not accepted.

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

C. Flagger Appearance and Equipment

Flaggers shall wear Performance Class 2 or better for day time activities. Flaggers shall wear Performance Class 3 or better high-visibility clothing for night time activities. Flagger stations shall be illuminated at night according to MUTCD (6F.82). They shall use a Stop/Slow paddle meeting the requirements of the MUTCD (6E.03) for controlling traffic. The Stop/Slow paddles shall have a shaft length of seven feet (≥ 7') minimum. The Stop/Slow paddle shall be retroreflectorized for both day and night usage. In addition to the Stop/Slow paddle, a flagger may use a flag as an additional device to attract attention. This flag shall meet the minimum requirements of the MUTCD (6E.03). The flag shall, as a minimum, be twenty-four inches (≥ 24") square and red or red/orange in color.

D. Flagger Warning Signs

Signs for flagger traffic control shall be placed in advance of the flagging operation, in accordance with the MUTCD and Georgia Standard 9102 "Traffic Control Detail for Lane Closure on Two-Lane Highway". In addition, signs at regular intervals, warning of the presence of the flagger shall be placed beyond the point where traffic can reasonably be expected to stop under the most severe conditions for that day's work.

E. Pilot Vehicle Requirements

Pilot vehicles should be required during placement of bituminous surface treatment or asphaltic concrete on two-lane roadways unless otherwise specified. Pilot vehicles shall meet the requirements of the MUTCD (6C.13).

F. Automated Flagger Assistance Devices

The Contractor may request, in writing, the use of Automated Flagger Assistance Devices (AFAD). The equipment shall meet the requirements of MUTCD (6E.04). As a part of this request, the Contractor shall also submit an alternate temporary traffic TTC plan in the event of a failure of the AFAD. Any alternate plan that requires the use of flaggers shall include the use of certified flaggers. The Contractor shall obtain the approval of the Engineer before the use of any AFAD will be permitted.

G. Portable Temporary Traffic Control Signals

The Contractor may request, in writing, the substitution of portable temporary traffic control signals for flaggers on two-lane two-way roadways provided the temporary signals meets the requirements of the MUTCD, Section 647, and subsection 150.2.11. As a part of this request, the Contractor shall also submit an alternate TTC plan in the event of a failure of the signals. Any alternate plan that requires the use of flaggers shall include the use of certified flaggers. The Contractor shall obtain the approval of the Engineer before the use of any portable temporary traffic control signals will be permitted.

150.3.08 Traffic Signals

A. Responsibility/Cost

If the sequence of operations, staging, or the TTC plan requires the relocation or shifting of any components of an existing traffic signal system then any work on these traffic signals will be considered as part of Traffic Control – Lump Sum.

B. Law Enforcement Officer Requirement

In accordance with Georgia law § 40-6-20, law enforcement officers shall be used to regulate and maintain traffic control at functioning signalized intersections when lane closures or traffic shifts block or restrict movements causing interference with road user flows and will not allow the activated traffic signal to guide the traffic through the signal site.

150.3.09 Mobile Operations

A mobile operation is defined by a minimum speed of three (3) mph. When pavement markings (centerlines, lane lines, and edge lines) are applied in a continuous operation by moving vehicles and equipment, the following minimum equipment and warning devices shall be required. These devices and equipment are in addition to the minimum requirements of the MUTCD.

All vehicles shall be equipped with the official slow moving vehicle symbol sign. All vehicles shall have a minimum of two (2) flashing or rotating beacons visible in all directions. All protection vehicles shall have an arrow panel mounted on the rear. All vehicles requiring an arrow panel shall have, as a minimum, a Type B panel. All vehicle mounted signs shall be mounted with the bottom of the sign a minimum height of forty-eight inches (48") above the pavement. All sign legends shall be covered or removed from view when work is not in progress.

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

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

A protection vehicle shall follow the last work vehicle at all times and shall be equipped with a truck mounted attenuator that shall be certified for impacts not less than sixty-two (62) mph in accordance with MASH/NCHRP350 Test Level Three (3).

150.3.10 Pavement Markings

A. General

Full pattern pavement markings in conformance with Section 3A and 3B, except 3B.02, of the MUTCD are required on all courses before the roadway is opened to traffic, unless noted in this section. No passing zones shall be marked to conform to Subsection 150.3.10.D.1.b.. During construction and maintenance activities on all highways open to traffic, both existing markings and markings applied under this Section shall be fully maintained until Final Acceptance. If the pavement markings are, or become, unsatisfactory in the judgment of the Engineer due to wear, weathering, or construction activities, they shall be restored immediately.

Markings on the final surface course, which must be removed, shall be a removable type. The Contractor will be permitted to use paint, thermoplastic, or tape on pavement which is to be overlaid as part of the Project, unless

otherwise directed by the Engineer. Partial (skip) reflectorization (i.e. reflectorizing only a portion of a stripe) will not be allowed.

1. Resurfacing Projects

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

2. Widening and Reconstruction Projects

   If the lane configuration is altered from the preconstruction layout then pavement markings will be as required by the Plans or the Engineer.

3. New Location Construction Projects

   Pavement marking plans will be provided.

B. Installation and Removal of Pavement Markings

1. Installation

   All pavement markings, both interim and permanent, shall be applied to a clean surface. The Contractor shall furnish the layout and preline the roadway surface for the placement of pavement markings applied as part of the TTC plan. All interim marking tape and RPM's on the final surface shall be removed prior to the placement of the final markings.

   The Contractor shall sequence the Work in such a manner as to allow the installation of markings in the final lane configuration at the earliest possible stage of the Work.

2. Removal

   Markings no longer applicable shall be removed in accordance with Section 656.
   The elimination of conflicting pavement markings by overpainting with unapproved paint or any type of liquid asphalt is not acceptable.

3. Intermediate Surface

   Interim markings shall be removed by methods that will cause minimal damage to the pavement surface, while also ensuring that traveling public will not be confused or misdirected by any residual markings remaining on the intermediate surface. The use of approved black-out tape and black-out paint (manufactured for the sole purpose of covering existing pavement markings) may be permitted on some interim surfaces, provided the results are satisfactory to the Engineer.

4. Final Surface

   No interim paint or thermoplastic markings will be permitted on any final surface unless the interim markings are in alignment with the location of the permanent markings and the interim marking will not interfere or adversely affect placement of the permanent markings. The proposed method of removal for layout errors that require markings to be removed from the final surface shall have the prior approval of the Engineer. Any damage to the final pavement surface caused by the pavement marking removal process shall be repaired at the Contractor's expense by methods acceptable and approved by the Engineer. Section 400 shall apply when corrective measures are required. The use of black-out tape or black-out paint will not be permitted under any circumstance to correct layout errors on any final surface.

Traffic shifts that are done on the final surface shall be accomplished using interim traffic marking tape that can be removed without any blemishing of the final surface. Interim traffic marking tape shall be used on any of the following final surfaces; asphaltic concrete, Portland cement concrete, and bridge deck surfaces. The Contractor may propose alternate traffic markings and removal methods on the final surface. Submitted proposals shall include the type of material, method of removal and a cost comparison to the traffic marking tape method. Prior to any approval, the Contractor shall field demonstrate to the satisfaction of the Engineer that the proposed traffic markings can be removed without any blemishing of the final surface. If the proposal is determined to be acceptable, a supplemental agreement will be executed prior to the installation of the proposed alternate traffic markings. The supplemental agreement shall denote the type of traffic marking materials, method of removal and any cost and/or time savings to the Department. The Department will not consider or participate in any cost increase that may result from implementing the proposed alternate method.

5. Pay Factor Reduction for Asphaltic Concrete Final Surfaces

When the correction of an error in the layout of the final pavement markings requires the final surface to be grounded, blemished, scarred, or polished the pay factor shall be reduced to 0.95 for the entire surface area of the final topping that has a blemish, polished or a scarred surface. The reduced pay factor shall not be confined to only the width and length of the stripe or the dimensions of the blemished areas, the whole roadway surface shall have the reduced pay factor applied. The area of the reduced pay factor shall be determined by the total length and the total width of the roadway affected. If the affected area is not corrected, the reduction in pay shall be deducted from the final payment for the topping layer of asphaltic concrete. The Engineer shall make the final determination whether correction or a reduced pay factor is acceptable.

The eradication of pavement markings on intermediate and final concrete surfaces shall be accomplished by a method that does not grind, polish, or blemish the surface of the concrete. The method used for the removal of the interim markings shall not spall chip the joints in the concrete and shall not damage the sealant in the joints. Any joint or sealant repairs shall be included in the bid price for Traffic Control-Lump Sum. The proposed method of removal shall have the prior approval of the Engineer.

Failure to promptly remove conflicting or non-applicable pavement markings shall be considered as non-performance under Subsection 150.7.01.

6. Preparation and Planning for Traffic Shifts

When shifting of traffic necessitates removal of centerline, lane lines, or edge lines, all such lines shall be removed prior to, during, or immediately after any change to present the least interference with traffic. Interim traffic marking tape shall be used as a temporary substitute for the traffic markings being removed.

Before any change in traffic lane(s) alignment, marking removal equipment shall be present on the project for immediate use. If marking removal equipment failures occur, the equipment shall be repaired or replaced (including leasing equipment if necessary), so that the removal can be accomplished without delay.

Except for the final surface, markings on asphaltic concrete may be obliterated by an overlay course, when approved by the Engineer. When an asphaltic concrete overlay is placed for the sole purpose of eliminating conflicting markings and the in place asphaltic concrete section will allow, said overlay will be eligible for payment only if designated in the Plans. Overlays to obliterate lines will be paid for only once and further traffic shifts in the same area shall be accomplished with removable markings. Only the minimum asphaltic concrete thickness required to cover lines will be allowed. Excessive build-up will not be permitted. When an overlay for the sole purpose of eliminating conflicting markings is not allowed, the markings no longer applicable shall be removed in accordance with Section 656.

C. Raised Pavement Markers

Retroreflective raised pavement markers (RPMs) shall be placed as listed below for all asphaltic concrete pavements before the roadway is open to traffic, unless noted this section. On the final surface, RPMs shall be placed according to the timeframes specified in Subsection 150.3.10.D for full pattern pavement markings. When Portland Cement

Concrete is an intermediate or final surface and is open to traffic, one (1) calendar day is allowed for cleaning and drying before the installation of RPMs is required.

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

Retroreflective raised pavement markers (RPMs) shall be placed and/or maintained on intermediate pavements surfaces on all highways that the final ride surface is not completed within 45 calendar days which is open to traffic. This includes all resurfacing projects along with widening and reconstruction projects. The RPMs shall be placed as follows:

1. Supplementing Lane Lines:
    a. Eighty foot (80') center on skip lines with curvature less than three degrees. (Includes tangents)
    b. Forty foot (40') centers on solid lines and all lines with curvature between three degrees and six degrees.
    c. Twenty foot (20') centers on curves over six degrees.
    d. Twenty foot (20') centers on lane transitions or shifts.
2. Supplementing Ramp Gore Lines:
    a. Twenty foot (20') centers, two each, placed side by side.
3. Other Lines:
    a. As shown on the Plans or directed by the Engineer.

D. Exceptions for Interim Markings

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

1. Two-Lane, Two-Way Roadways
    a. Skip Lines

    If used, interim temporary tape or paint skip (broken) stripe may only be used for a maximum of three (3) calendar days. The stripes shall be at least two feet (> 2') long with a maximum gap of thirty-eight feet (≤ 38'). On curves greater than six degrees (>6°), a one-foot (1') stripe with a maximum gap of nineteen feet (≤ 19') shall be used. In lane shift areas, solid lines will be required.

    Interim raised pavement markers may be substituted for the interim skip (broken) stripes. If raised pavement markers are substituted for the two foot (2') interim skip stripe, three (3) markers spaced at equal intervals over a two feet (2') distance will be required. No separate payment will be made if the interim raised pavement markers are substituted for interim skip lines.

    Interim raised pavement markers shall be retro-reflective, shall be the same color as the pavement markers for which they are substituted, and shall be visible during daytime.

    The type of interim marker and method of attachment to the pavement shall be approved by the Office of Materials and Testing but in no case will the markers be attached by the use of nails. Flexible reflective markers, Type 14 or Type 15, may be used for a maximum of three (3) calendar days as an interim marker. Any flexible reflective markers in use shall be from the QPL-76.

The interim raised pavement markers shall be maintained until the full pattern pavement markings are applied. At the time full pattern markings are applied the interim raised markers shall be removed in a manner that will not interfere with application of the full pattern pavement markings.

b. No Passing Zones Two-Lane, Two-Way Roadways

Passing zones shall be re-established in the locations existing prior to resurfacing unless otherwise noted in the Contract. No changes to the location of passing zones shall be done without the written approval of the Engineer. For periods not to exceed three (3) calendar days where interim skip centerlines are in place, no-passing zones shall be identified by using post or portable mounted DO NOT PASS regulatory signs (R4-1) twenty-four inches by thirty inches (24" x 30") at the beginning and at intervals not to exceed one-half (≤½) mile within each no-passing zone. A post or portable mounted PASS WITH CARE regulatory sign (R4-2) twenty-four inches by thirty inches (24" x 30") shall be placed at the end of each no-passing zone. Post mounted signs shall be placed in accordance with the MUTCD. Portable signs shall be secured in such a manner to prevent misalignment and minimize the possibility of being blown over by weather conditions or traffic.

On new location projects and on projects where either horizontal or vertical alignments has been modified, the location of No-Passing Zones will be identified by the Engineer.

c. Edge lines

- Bituminous Surface Treatment Paving

  Edge lines will not be required on intermediate surfaces (including asphaltic concrete leveling for bituminous surface treatment paving) that are in use for a period of less than sixty (<60) calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Engineer. On the final surface, edge lines shall be placed within thirty (≤30) calendar days of the time that the final surface was placed.

- All Other Types of Pavement

  Edge lines will not be required on intermediate surfaces that are in use for a period of less than thirty (<30) calendar days except at bridge approaches, on lane transitions, lane shifts, and in such other areas as determined by the Engineer. On the final surface, edge lines shall be placed within fourteen (≤ 14) calendar days of the time that the surface was placed.

2. Multi-Lane Highways – With No Paved Shoulder(s) or Paved Shoulder(s) Four Feet or Less (≤ 4')

a. Undivided Highways (Includes Paved Center Turn Lane)

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

- Lane lines- Interim skip (broken) stripe as described in Subsection 150.3.10.D.1.a. may be used for periods not to exceed three (≤ 3) calendar days. Skip lines are not permitted in lane shift areas. Solid lines shall be used.

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

b. Divided Highways (Grass or Raised Median)

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

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

3. Limited Access Roadways and Roadways with Paved Shoulders Greater Than Four Feet (> 4')

   a. Same as Subsection 150.3.10.D.2 except as noted in (b) below.

   b. Edge lines-

      - Asphaltic Concrete Pavement- Edge lines shall be placed on intermediate and final surfaces prior to opening to traffic.

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

4. Ramps for Multi-Lane Divided Highways

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

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

5. Miscellaneous Pavement Markings

   a. Final Surface

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

   b. Intermediate Surface

      Intermediate surfaces that will be in use for more than forty-five (45) calendar days shall have the miscellaneous pavement markings installed to conform to the requirement of Section 652. Under Subsection 150.6, Special Conditions, or as directed by the Engineer these markings may be eliminated.

   c. Stop Line

      All stop signs and traffic signals shall have temporary twelve inch (12") stop lines placed in accordance with MUTCD (3B.16) on all surfaces prior to opening to traffic. Temporary tape **may** be used.

150.3.11 Differences in Elevations Between Travel Lanes and Shoulders

All time frames and requirements may be changed with the Engineer's approval.

A. Differences in Elevations

Difference in elevations due to construction between travel lanes and/or shoulders within the clear zone should be limited to the following:

1. Difference of two inches (≤ 2") or less between adjacent travel lanes should remain for a maximum period of fourteen (14) calendar days.

2. Difference of two inches (≤ 2") or less between adjacent travel lane and paved shoulder should remain for a maximum of thirty (30) calendar days. Traffic control devices shall be in accordance with Detail 150-G.

3. Difference of greater than two inches (> 2") is permitted for continuous operations. Traffic control devices shall be in accordance with Detail 150-E.

4. Difference of greater than two inches (> 2") between travel lanes and/or shoulders for non-continuous operations will not be allowed for more than a twenty-four (24) hour period. For the first twenty-four (24) hours, traffic control shall be in accordance with Detail 150-E. After twenty-four (24) hours the section should be healed according to Detail 150 – H. This condition can exist for a maximum sixty (60) calendar days.

   a. A single length of area that does not exceed 1000 feet total length may be left open as a startup area for periods not to exceed forty-eight (48) hours provided the Contractor can demonstrate the ability to complete the Work in a proficient manner. Prior approval of the Engineer shall be obtained before any startup area may be allowed.

   b. For cement stabilized base, work adjacent to the travel lane and/or shoulders shall be healed as per Detail 150-H within forty-eight (48) hours after the seven (7) calendar day curing period is complete for each section placed. During the placement and curing period, traffic control shall be in accordance Detail 150-E.

Failure to meet these requirements shall be considered as non-performance of Work under Subsection 150.7.01.

B. Healed Section

Healed section and traffic control devices should be placed in accordance with Detail 150-H. If crushed stone materials are used to provide a healed section no separate payment will be made for the material used to heal any section. The Contractor may submit a plan to utilize existing pay items for crushed stone provided the plan clearly demonstrates that the materials used to heal an area will be incorporated into the Work with minimal waste. Handling and hauling of any crushed stone used to heal shall be kept to a minimum. The Engineer shall determine if the crushed stone used to heal meets the Specifications for gradation and quality when the material is placed in the final location.

C. Emergency Situations

Inclement weather, traffic accidents, and other events beyond the control of the Contractor may prevent the Work from being completed as required above. The Contractor shall notify the Engineer in writing stating the conditions and reasons that have prevented the Contractor from complying with the time limitations. The Contractor shall also outline a plan detailing immediate steps to complete the Work. Failure to correct these conditions on the first calendar day that conditions will allow corrective work shall be considered as non-performance of Work under Subsection 150.7.01.

D. Plating

Plating for drainage structures, utility facilities, etc. is prohibited on the interstates. Plating on State Routes and secondary roads will require the prior approval of the project Engineer. Steel plates shall not be used on highways with a posted speed greater than forty-five (45) mph. The plate shall completely cover the pavement cut or excavation. The plate shall be adequately secured and shall provide a safe and reasonable transition to the adjoining roadway surface. An asphalt wedge can be used to provide a smooth transition over the plate(s). Temporary traffic control warning signs W8-24 shall be posted in advance warning motorist about plates in roadway in accordance with the MUTCD. Plating should not remain in place for more than four (4) calendar days.

E. Asphaltic Concrete Resurfacing Projects

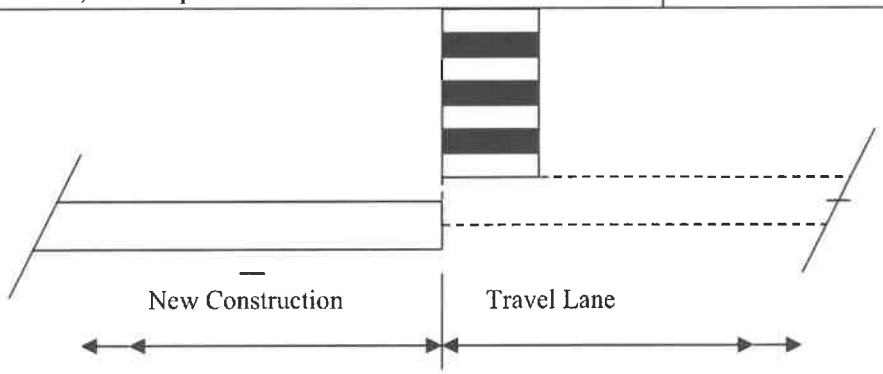
1. Shoulder Construction Included as a Part of the Contract

When the placement of asphaltic concrete materials creates a difference in elevation greater than two inches (> 2") between the earth shoulder (grassed or un-grassed) and the edge of travel lane or between the earth shoulder and a paved shoulder that is less than four feet (< 4') in width, the Contractor shall place and maintain drums in accordance with the requirements of Subsection 150.2.04.B.3. When the edge of the paved surface is tapered with a safety edge, drums may be spaced at two (2) times the speed limit in MPH. Drums shall remain in place and be maintained until the difference in elevation has been eliminated by the placement of the appropriate shoulder materials.

2. Shoulder Construction Not Included as a Part of the Contract

When the placement of asphaltic concrete materials creates a difference in elevation greater than two inches (> 2") between the earth shoulder (grassed or un-grassed) and the edge of travel lane or between the earth shoulder and a paved shoulder that is less than four feet (< 4') in width, the Contractor shall notify the Engineer, in writing, when the resurfacing work including all corrective list items has been completed.

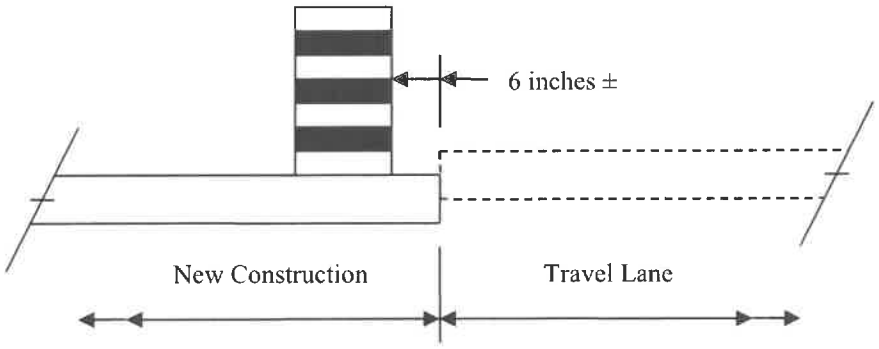
Drums spaced at twenty foot (20') intervals. **Note**: If the travel way width is reduced to less than ten feet (< 10') by the use of drums, vertical panels shall be used in lieu of drums.	Location of drums when Elevation Difference exceeds four inches (> 4")



ELEVATION DIFFERENCE GREATER THAN FOUR INCHES (> 4")

DETAIL 150-E

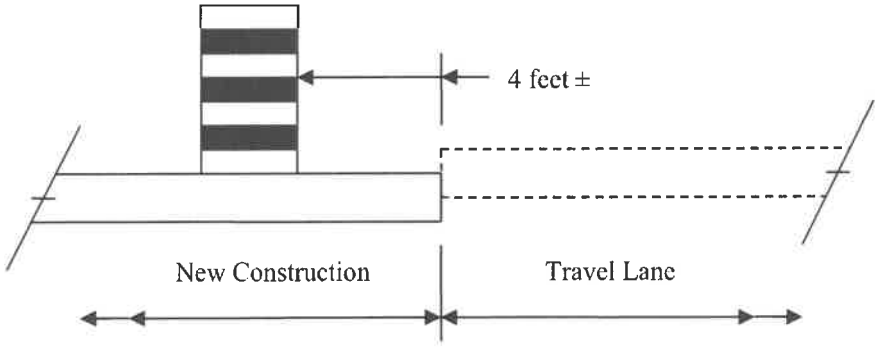
Drums spaced at forty foot (40') intervals.	Location of drums when Elevation Difference is greater than two inches (> 2") to four inches (4")



ELEVATION DIFFERENCE GREATER THAN TWO INCHES (> 2") TO FOUR INCHES (4")

DETAIL 150-F

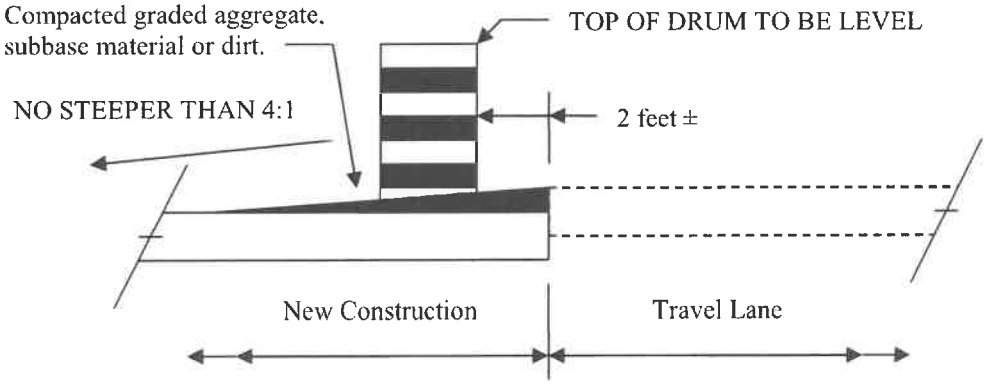
Drums spaced at eighty foot (80') intervals.	Location of drums when Elevation Difference is two inches (≤ 2") or less.



ELEVATION DIFFERENCE OF TWO INCHES (≤ 2") OR LESS

DETAIL 150-G

Location of drums immediately after completion of healed sections spaced at 40 foot (40') intervals	Healed Section



HEALED SECTION

DETAIL 150-H

150.3.12 Work Zone Law Enforcement

Work zone law enforcement consists of utilizing a uniformed law enforcement officer equipped with patrol vehicle and blue flashing lights to enforce traffic laws in construction work zones and the administration of this service. Payment for work zone law enforcement will be made only for the utilization in work zones during lane closures, traffic pacing, or other activities that occur within travel lanes. The Contractor will be responsible for negotiating a rate of reimbursement and making reimbursement to that law enforcement agency.

The Contractor will be responsible for coordinating and scheduling the utilization of the work zone law enforcement. The Engineer may require the use of work zone law enforcement at specific times and locations.

Work zone law enforcement will be required in all work zones during lane closures, traffic pacing, or other activities that occur within travel lanes on the interstate.

150.4 Measurement

150.4.01 Traffic Control Items

A. Traffic Control

When listed as a pay item in the Proposal, payment will be made at the lump sum price bid, which will include all traffic control not paid for separately, and will be paid as follows:

When the first Construction Report is submitted, a payment of twenty-five percent (25%) of the lump sum price will be made. For each progress payment thereafter, the total of the Project percent complete shown on the last pay statement plus twenty-five percent (25%) will be paid (less previous payments), not to exceed one hundred percent (100%).

When no payment item for Traffic Control-Lump Sum is shown in the Proposal, all of the requirements of Section 150 and the Temporary Traffic Control Plan shall be in full force and effect. The cost of complying with these requirements will not be paid for separately, but shall be included in the overall bid submittal.

B. Changeable Message Sign, Portable

Portable changeable message sign will be measured as specified in Section 632.

C. Flashing Beacon Assembly

Flashing beacon assemblies will be measured as specified in Section 647.

D. Pavement Markings

Pavement markings will be measured as specified in Section 150.

E. Portable Impact Attenuators

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

F. Signs

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

1. Interim ground mounted or interim overhead special guide signs will be measured for payment by the square foot. This payment shall be full compensation for furnishing the signs, including supports as required, erecting, illuminating overhead signs, maintaining, removing, re-erecting, and final removal from the Project. Payment will be made only one time regardless of the number of moves required.

2. Remove and reset existing special guide signs, ground mount or overhead, complete, in place, will be measured for payment per each. Payment will be made only one time regardless of the number of moves required.

3. Modify special guide signs, ground mount or overhead, will be measured for payment by the square foot. The area measured shall include only that portion of the sign modified. Payment shall include materials, removal from posts or supports when necessary, and remounting as required.

G. Temporary Audible Information Device

Temporary audible information devices are measured as the actual number furnished and installed in accordance with the manufacturer's recommendations, which shall include all necessary materials, equipment, labor, site preparation, maintenance and removal. Each temporary audible information device will be paid for only one time regardless of the number of times it's reused during the duration of the Work. These devices shall remain the property of the Contractor.

H. Temporary Barrier

Temporary barrier shall be measured as specified in Sections 620.

I. Temporary Curb Cut Wheelchair Ramps

Temporary curb cut wheelchair ramps are measured as the actual number formed and poured, complete and accepted, which shall include all necessary materials, equipment, labor, site preparation, maintenance and removal. No additional payment will be made for sawing existing sidewalk and removal and disposal of removed material for temporary wheelchair ramp construction. No additional payment will be made for constructing the detectable warning surface.

J. Temporary Guardrail Anchorage, Type 12

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

K. Temporary Walkways with Detectable Edging

Temporary walkways with detectable edging will be measured in linear feet (meters), complete in place and accepted, which shall include all necessary materials, equipment, labor, site preparation, temporary pipes, passing spaces, maintenance and removal. Excavation and backfill are not measured separately for payment. No payment will be made for temporary walkways where existing pavements or existing edging (that meets the requirements of MUTCD) are utilized for the temporary walkway. Payment for temporary detectable edging, including approved barriers and channelizing devices, installed on existing pavement shall be included in Traffic Control-Lump Sum.

L. Traffic Signal Installation- Temporary

Temporary traffic signal installation will be measured as specified in Section 647.

M. Work Zone Law Enforcement

When work zone law enforcement is shown as a pay item, work zone law enforcement will be measured for payment by the hour. The Contractor shall provide a daily work record containing the actual number of hours charged by the law enforcement officer. The daily work record shall be complied on a form provided by the Department, signed by the law enforcement officer, signed by the Contractor's Worksite Traffic Control Supervisor attesting that the law enforcement was utilized during the time recorded, and then submitted to the Engineer.

Work zone law enforcement will be measured for payment by the hour up to the maximum number of hours included in the Contract. The Engineer may at his discretion increase the maximum number of hours.

Payment shall be full compensation for reimbursing the law enforcement agency and for all cost incurred by the Contractor in coordinating, scheduling, and administering the item work zone law enforcement.

If no work zone law enforcement pay item is included in the Contract, then all work zone law enforcement cost shall be included in Traffic Control – Lump Sum.

150.5 Reserved

150.6 Special Conditions

Special Conditions, if used, will be included elsewhere in the Contract.

150.7 Payment

When shown in the Schedule of Items in the Proposal, the following items will be paid for separately. Payment will be made under:

Item No. 150	Traffic control -	Lump Sum
Item No. 150	Traffic control, solid traffic stripe __ inch, (color)	Per linear mile
Item No. 150	Traffic control, skip traffic stripe __ Inch, (color)	Per linear mile
Item No. 150	Traffic control, solid traffic stripe, thermoplastic 24 inch, color	Per linear mile
Item No. 150	Traffic control, raised pavement markers –all types	Per each
Item No. 150	Remove and reset, existing special guide signs, overhead, complete-in-place	Per each
Item No. 150	Temporary walkways with detectable edging	Per linear foot
Item No. 150	Temporary curb cut wheelchair ramps	Per each
Item No. 150	Temporary audible information device	Per each
Item No. 150	Work Zone Law Enforcement	Per hour

150.7.01 Enforcement and Adjustments

The safe passage of pedestrians and traffic through and around the temporary traffic control zone, while minimizing confusion and disruption to traffic flow, shall have priority over all other Contractor activities. Continued failure of the Contractor to comply with the requirements of Section 150 - Traffic Control will result in non-refundable deductions of monies from the Contract as shown in this Subsection for non-performance of Work.

Failure of the Contractor to comply with this Specification shall be reason for the Engineer suspending all other work on the Project except erosion control and traffic control, taking corrective action as specified in Section 105, and/or withholding payment of monies due to the Contractor for any work on the Project until traffic control deficiencies are corrected. These other actions shall be in addition to the deductions for non-performance of traffic control.

SCHEDULE OF DEDUCTIONS FOR EACH CALENDAR DAY OF DEFICIENCIES OF TRAFFIC CONTROL INSTALLATION AND/OR MAINTENANCE		
ORIGINAL TOTAL CONTRACT AMOUNT		
From More Than	To and Including	Daily Charge
$0	$100,000	$250
$100,000	$1,000,000	$650
$1,000,000	$5,000,000	$1,300
$5,000,000	$20,000,000	$2,000
$20,000,000	$40,000,000	$2,600
$40,000,000	$----------	$4,000

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 150.6 – Traffic Control (Special Conditions)

Retain Section 150 of the Project Special Provisions as written and add the following:

150.6 Special Conditions

A. Work Hours:

This project requires the following restricted work hours:
Lane closures will not be permitted between the hours of 6:00 am to 9:00 am; and 4:00 pm to 7:00 pm without prior approval by the engineer or unless otherwise approved as a part of the contractor's traffic control plan.

Failure by the contractor to reopen the lane closure by the times specified will result in damages assessed in accordance with Sub-Section 108.08.C of Section 108 included herein as a Special Provision of this contract.

B. Traffic Control Plan:

A Traffic Control Plan shall be submitted two (2) weeks prior to any work for review and approval by the Engineer.

C. Holiday Work:

No work shall be allowed during the following dates due to holidays:

December 31st thru January 2nd - New Year's Day Holiday

Saturday thru Monday - Martin Luther King, Jr. Day Holiday

Saturday thru Monday - Memorial Day Holiday

July 3rd thru July 5th – Independence Day Holiday

Saturday thru Monday – Labor Day Holiday

Saturday thru Monday - Columbus Day Holiday

November 10th – November 12th – Veterans Day Holiday

Thursday thru Sunday - Thanksgiving Holiday

December 23rd thru December 26th – Christmas Holiday
Christmas Parade – Exact Date TBD, Will Provide 60 Day Notice To Contractor Once Determined.

Lane closures shall also not be allowed during the weekends of the Georgia Tax Free Weekends.

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PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 163 – Miscellaneous Erosion Control Items

Retain Section 163 of the Georgia D.O.T. Standard Specifications as written and add the following:

163.4 – Measurement

R. Erosion Control

When the plans specify a Lump Sum basis, this work will be measured as an accepted Lump Sum quantity, complete in place.

163.5 – Payment

R. Temporary Erosion and Sediment Control

Payment for this item, completed and accepted, will be made at the lump sum price bid. All Best Management Practices and other measures that are necessary to control erosion and siltation throughout the Life of the Project shall be included in the lump sum priced bid for this item. The individual items of Silt Fence, Temporary Sediment Traps, Inlet Protection Devices, Stabilized Construction Entrances, Check Dams, Erosion control mulch (straw or hay, or erosion control compost), Temporary Grassing, Lime (when required), Fertilizer, and other temporary erosion control structures will not be measured separately for payment. The Lump Sum payment is for all work and materials required to maintain a stabilized work area utilizing the items listed above, including the placement of multiple applications of said items and maintaining those devices throughout the Life of the Project as directed by the Engineer.

Payment will be made under:

Item No. 163	Temporary Erosion and Sediment Control	Per lump sum

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 213 – Borrow Material (Local Sand or Sand-Gravel Backfill)

213.1 – General Description

This work includes furnishing, hauling, and placing locally available borrow materials, with or without commercial aggregate suitable for constructing or reconstructing the sidewalk foundation according to the Plans. Local materials, for the purpose of these Specifications, shall be of the kind and character of local sand and local sand-gravel or blends thereof. Alternative materials that are similarly suitable for the construction or reconstruction of sidewalk foundations, as approved by the Engineer, shall also be considered acceptable backfill materials for the purpose of these Specifications.

213.1.01 – Definitions

General Provisions 101 through 150.

213.1.02 – Related References

A. Standard Specifications

Section 109 - Measurement and Payment
Section 800 – Coarse Aggregate
Section 801 – Fine Aggregate
Section 810 – Roadway Materials
Section 812 – Backfill Materials
Section 815 – Graded Aggregate

B. Related Documents

General Provisions 101 through 150.

213.1.03 – Submittals

General Provisions 101 through 150.

213.2 – Materials

A. Local Sand

Local sand shall be pit-run sand suitable for the purpose intended. In general, all local sand shall consist of grains of hard, sound material, predominantly quartz or other hard,

durable rock, including friable, loosely bound deposits of sandstone conglomerate normally found in natural deposits in the project vicinity. The sand shall be free from a coating of injurious material, lumps of clay, loam, organic matter, or other foreign material.

If necessary, gradation and/or other requirements will be provided in the plans and/or proposal form. Otherwise, the material shall be visually approved by the Engineer.

B. Local Sand-Gravel

Local sand-gravel shall be pit-run sand-gravel, suitable for the purpose intended. In general, the sand-gravel shall be hard, sound durable rock, including friable, loosely bound sandstone conglomerate, with varying amounts of coarse aggregate and sand normally found in natural deposits in the project vicinity. The coarse aggregate and the sand shall be free from a coating of injurious material, lumps of clay, loam, organic matter, or other foreign material.

If necessary, gradation and/or other requirements will be provided in the plans and/or proposal form. Otherwise, the material shall be visually approved by the Engineer.

C. Commercial Aggregates

Commercial aggregate shall meet the appropriate requirements of Sections 800 and 801.

D. Alternative Materials

Materials meeting the appropriate requirements of Sections 812 and 815 shall be acceptable if suitable for the purpose intended, and as approved by the Engineer.

213.2.01 – Delivery, Storage, and Handling

General Provisions 101 through 150

213.3 – Construction Requirements

213.3.01 – Personnel

General Provisions 101 through 150.

213.3.02 – Equipment

General Provisions 101 through 150.

213.3.03 – Preparation

General Provisions 101 through 150.

213.3.04 – Fabrication

General Provisions 101 through 150.

213.3.05 – Construction

Follow these requirements when constructing a granular backfill embankment:

1. Place the embankment at the location(s) shown on the Plans.

2. Ensure the thickness of the lifts and the compaction are approved by the Engineer. Compaction approval by the Engineer may include compaction tests at the discretion of the Engineer.

213.3.06 – Quality Acceptance

General Provisions 101 through 150.

213.3.07 – Contractor Warranty and Maintenance

General Provisions 101 through 150.

213.4 – Measurement

When the material being utilized for Local Sand or Sand-Gravel Backfill is obtained from a local pit, the backfill material is measured by volume in the hauling vehicle as specified in Subsection 109.01.

When the material being utilized for Local Sand or Sand-Gravel Backfill is obtained from a commercial quarry, a certified weight ticket shall accompany the material. The weight of the material delivered and accepted is converted to an equivalent volume based on an average dry unit weight conversion of 1.5 tons per cubic yard loose volume.

213.4.01 – Limits

General Provisions 101 through 150.

213.5 – Payment

Borrow Material (Local Sand or Sand-Gravel Backfill) will be paid for at the Contract Price per cubic yard. This price is full compensation for furnishing material, hauling, placing, compacting, and providing labor, equipment, and superintendence necessary to complete The Work.

Payment will be made under:

Item No. 213	Borrow Matl (Local Sand or Sand-Gravel Backfill)	Per cubic yard

213.5.01 – Adjustments

General Provisions 101 through 150.

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 500 – Concrete Structures

Delete Sections 500.4 and 500.5 of the Georgia D.O.T. Standard Specifications as written and add the following:

500.4 – Measurement

This work is measured for payment either per cubic yard or per each, whichever is shown on the plans.

- **Class A Concrete**. Class A concrete used for constructing minor drainage structure items or other minor structural items will be measured and paid for by the cubic yard complete in place and accepted.
- **Class A Concrete, Including Reinforcing Steel (Light Pole Foundations).** Class A concrete used for constructing light pole foundations will be measured and paid for each completed light pole foundation in place and accepted.
- **Class B Concrete**. Class B concrete used for base and pavement widening will be measured and paid for by the cubic yard complete in place and accepted.

500.5 – Payment

This Work will be paid for at the Contract Price per cubic yard or per Each, complete in place and accepted. Payment is full compensation for all things, including incidentals, and direct and indirect costs, to complete the Work.

Payment will be made under:

Item No. 500	Class A Concrete with All White Sand	Per cubic yard
Item No. 500	Class A Concrete with All White Sand, Incl Reinf Steel (Light Pole Foundations)	Per each
Item No. 500	Class B Concrete Base or Pavement Widening	Per cubic yard

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 660 – Gravity Sanitary Sewer Mains and Accessories

660.1 – Scope

This section describes products to be incorporated into gravity sewers and accessories and requirements for installation and use of these items. The Contractor shall furnish all labor, equipment and materials necessary to fulfill the requirements of these specifications. All products and work shall be performed in accordance with the latest revisions of applicable American Society for Testing and Materials (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), Recommended Standards for Wastewater Facilities (Ten States Standards, 1997 Edition), or other recognized standards.

670.2 – Submittals

Complete shop drawings and manufacturer's data shall be submitted to the Owner.

670.3 – Products

This section of the specifications covers the requirements for gravity sewer mains, manholes and accessories. Gravity sewer mains shall be ductile iron pipe furnished in accordance with the requirements in this section.

A. Ductile Iron Pipe

Pipe shall be centrifugally cast and shall conform to ANSI Specification A 21.51 (AWWA C 110) as amended to date, with mechanical or push-on joints and laying lengths of at least 18 feet. Pipe sizes 4" through 12" shall be standard pressure Class 350, and pipe sizes greater than 12" shall be pressure Class 250 unless otherwise indicated herein or on the Drawings.

1. Fittings: Fittings shall be cast from gray or ductile iron and shall conform to ANSI Specifications A 21.10 (AWWA C 110) as amended to date. All fittings shall have standard mechanical or push-on joints. Fittings for size 4-inch through 12-inch shall be Class 250 for Gray Iron and Class 350 for Ductile Iron. Fittings for size 14-inch through 48 -inch shall be Class 150 for Gray Iron and Class 250 for Ductile Iron. Either Gray Iron or Ductile Iron fittings will be permissible unless otherwise specified or shown on the Drawings.
2. Lining and Coating: Pipe and fittings shall be cement-lined (standard thickness) inside and bituminous coated outside, in accordance with the applicable provisions of ANSI Specification A 21.4 (AWWA C 104) and, ANSI

A 21.51 (AWWA C 151), as amended to date. The inside cement lining shall be treated with a bituminous seal coat.

3. Weights and Marking: Weights of pipe and fittings shall conform strictly to the requirements of ANSI Specifications. The class designations for the various classes of pipe and fittings shall be cast onto fittings in raised numerals, and cast or stamped on the outside of each joint of pipe and each fitting after the exterior coating has hardened.
4. Certification: The manufacturer of iron pipe and fittings shall furnish the Owner with a certified report stating that inspection and specified tests have been made and that the results thereof comply with the applicable ANSI Specifications for each.
5. Quality and Inspection: Latitudes in workmanship and finish allowed by ASTM notwithstanding, all pipe shall have smooth exterior and interior surfaces; be first quality, be free from cracks, blisters, and other imperfections, and be true to theoretical shapes and forms throughout each length. Pipe shall be subject to inspection by the Owner at the pipe plant, trench, and other points of delivery for the purpose of culling and rejecting pipe, independent of laboratory tests, which does not conform to the requirements of this Section. Pipe which does not conform will be so marked by the Owner, and shall not be used in the work. On -the-job repairing of rejected pipe will not be permitted.
6. Experience of Manufacturer: The pipe manufacturer shall submit evidence, if requested by the Owner, of having consistently produced pipe and joints of the quality specified herein, and which have exhibited satisfactory performance results in service over a period of not fewer than two years. The pipe manufacturer and the pipe manufacturing process shall be subject to approval by the Owner.

B. Steel Pipe for Ditch or Creek Crossings

1. Pipe: Pipe shall conform to AWWA Specifications C-202 as amended to date for electrically welded or seamless steel pipe. The pipe shall have a minimum wall thickness of 0.375 inches and shall be furnished in forty-foot (40') joints. All welding shall be performed by certified welders.
2. Lining and Casing: Pipe and fittings shall be cement-lined (standard thickness) inside and bituminous coated outside, in accordance with the applicable provisions of ANSI Specification A 214 (AWWA C 104) and ANSI A 21.51 (AWWA C 151), as amended to date. The inside cement lining shall be treated with a bituminous seal coat.
3. Certification: The manufacturer of steel pipe and fittings shall furnish the Owner with certified reports stating that inspection and specified tests have been made and that the results thereof comply with the applicable ANSI specifications.

C. Precast Concrete Manholes

Precast concrete manholes shall consist of precast reinforced concrete riser sections, eccentric top section unless shown as concentric in the Drawings and a base section

conforming to Typical Details shown on Detail Drawings. Precast manhole sections shall be manufactured in accordance with ASTM C 478, as amended to date, and these specifications. Concrete shall have a minimum compressive strength of 4,000 psi when tested in accordance with ASTM C 39, as a mended to date. Steel reinforcement shall be as specified in ASTM C 478, as amended to date. Wall and bottom sections shall have a minimum thickness of five inches (5").

1. Base Sections: Base sections for precast concrete manholes shall have a bottom poured monolithically with the walls. Base sections shall be furnished with inside diameters of 4, 5, and 6 feet as required. Base sections shall be furnished with a minimum height of 24 inches for pipes having a diameter of 8, 10, or 12 inches and a minimum height of 36 inches for pipes having a diameter of 15 or 18 inches. Minimum height for 5 or 6 foot inside diameters shall be 48 inches regardless of pipe size. Base sections with 5 or 6 foot inside diameters shall be reduced to 4 foot inside diameter by means of an adapter ring or transition top. The openings in the base section for the accommodation of the pipe shall be cast to closely conform to job conditions and shall provide a minimum clearance of three inches (3") between the inside bottom of the base and outside bottom of the pipe barrel.
2. Riser Sections: The riser sections shall be furnished in a minimum of six-inch (6") increments and shall be four feet (4') in diameter with, (a) tongue and groove joint to be sealed with approved butyl rubber or bitumastic material, similar to "E-Z Stik" as manufactured by Concrete Supply Company or (b) O - ring gasket type joint conforming to ASTM C 443, as amended to date. The gasket joint shall be thoroughly cleaned of all loose materials and brushed with an approved Epoxy to give a smooth surface free of any honeycomb.
3. Alteration to Manholes: In the event that the manhole has to be altered after delivery to job site the Contractor may, with permission of the Owner, connect the pipe to the manhole with a collar of mortar and brick. The opening between the pipe and manhole shall have a minimum clearance of one inch (1") and shall be filled from the inside and outside of the manhole with a non-shrink grout.
4. Repaired and Patched Sections: Repaired and patched sections will not be acceptable unless each individual section so repaired or patched shall first have been inspected and approved by the Owner, for repair and patching at the manhole plant. Repairs to and patching of "O" -ring grooves and shoulders will not be permitted.
5. Absorption: Absorption shall not exceed 9 percent when determined in accordance with ASTM C 497, as amended to date.
6. Testing and Stamping: An inspection, by an independent testing laboratory approved by the Owner, of the manufacturer's plant and product will be required to assure conformity of the precast manholes to these Specifications, and the minimum requirements of ASTM C 478, as amended to date. Each section of precast concrete manhole shall be stamped with the laboratory's stamp. Each stamped section shall indicate the laboratory's configuration that it was accepted in accordance with applicable ASTM Specifications. A copy of

such report will be furnished the Owner with submittal of shop drawings for approval. Job site inspection shall be visual for shape, uniformity, and density.

D. Miscellaneous Iron and Steel

Miscellaneous iron and steel for straps, brackets and related items shall be as shown and called for on the Drawings. Bolts and nuts shall be of the best quality high strength steel, unless otherwise shown on Drawings. Bolts and nuts in general shall be United States standard dimension. All anchor bolts exposed to the weather shall be of stainless steel, Type 316, unless otherwise specified. Anchor bolts in general shall be placed in forms prior to pouring concrete. When concrete anchors must be used, they shall be Phillips "Red Head" or Rawl "Saber Tooth" self-drilling anchors, or equal. Welding under these Specifications may be done by the MIG, TIG or "Electrode" Method in accordance with AWS-ASTM E 6012, as amended to date, (Electrode Method only).

E. Iron Castings

Castings shall be of gray-iron conforming to ASTM A 48, as amended to date. Manhole and step castings shall be as shown on the Detail Drawings unless otherwise specified. Castings shall be tough, close-grained and smooth, free from blow holes, blisters, shrinkage stains, cracks, cold shots and like defects. No plugging of defective castings will be permitted. Castings shall be made accurately to dimensions shown on the Drawings or ordered and shall be planed or ground where necessary, whether marked or not, to secure perfectly flat bearing surfaces. Allowance shall be made in the patterns so that the specified thickness of metal will not be reduced. No casting will be accepted, the weight of which is less than the theoretical weight, based on required dimensions, by more than five percent (5%).

F. Painting

Straps, brackets and related items shall be primed in the shop with one (1) coat of Inertol Rust inhibitive Primer 621 FDA, 1.5 dry mil thickness. Coating in the field will be with one (1) coat of Inertol No. 49 Thick, 5.0 dry mil thickness. Manhole frames, covers and steps shall be given one coat of an asphaltic or bituminous paint which results in a smooth and tough well-bonded coating. No separate payment will be made for the above work. The cost of such work, and all cost incidental thereto, shall be included in the unit prices bid for the item to which the work pertains.

G. Polyethylene Encasement

Polyethylene encasement shall be 60 mil polyethylene sheet and shall be used to wrap the sewer pipe.

670.3 – Implementation

A. Unloading

Equipment and facilities for unloading, hauling, distributing and storing materials shall be furnished by the Contractor and shall at all times be available for use in unloading

materials. Delays in unloading railroad cars, unloading trucks, or hauling from freight terminal which incur demurrage, truck waiting charges or terminal charges shall be at the expense of the Contractor.

B. Handling

Pipe, fittings and other material shall be carefully handled so as to prevent breaking and/or damage. Pipe may be unloaded individually by hand but shall not be unloaded by rolling or dropping off of trucks or cars. Preferred unloading is in units using mechanical equipment, such as fork lifts, cherry pickers or front-end loaders with forks. If fork lift equipment is not available units may be unloaded with use of spreader bar on top and nylon strips or cables (cushioned with rubber hose sleeve) looped under the unit.

C. Distributing

Materials shall be distributed and placed so as to least interfere with traffic. No street or roadway may be closed without first obtaining permission from the proper authorities. The Contractor shall furnish and maintain proper warning signs and obstruction lights for protection of traffic along highways, streets, and roadways upon which material is disturbed. No distributed material shall be placed in drainage ditches.

D. Storage

All pipe, fittings and other materials which cannot be distributed along the route of the work shall be stored for subsequent use when needed. The Contractor shall make his own arrangements for the use of storage areas; except that, with permission, he may make reasonable use of the Owner's storage yards. All pipe must be stockpiled on level ground. Timbers must be placed under the pipe for a base and to prevent dirt and debris from washing into the pipe. No separate payment shall be made for the above work.

E. Location and Grade

Where new sewer lines are to be constructed, the line and grade of the sewer, and the position of manholes and other structures, will be given by the Owner or Owner. The grade line shown and specified means the invert of the pipe. The price for trenching shall include the trench for the depth below the grade line necessary to lay the sewer to this grade, but measurements for payment will be made only to the grade line. Subsidiary lines and grades shall be laid out by the Contractor from the controlling lines and benchmarks established by the Owner, or from measurements shown. All lines and grades shall be subject to checking by the Owner, but that checking shall in no way relieve the Contractor from responsibility for correctness. The Contractor shall provide such stakes, materials, labor and assistance as the Owner may require in laying-out work, establishing benchmarks, and checking and measuring the work.

F. All gravity sewer lines must meet minimum grade requirements. These requirements are listed in the following chart:

Pipe Diameter	Minimum Grade
8	0.50%
10	0.30%
12	0.22%
15	0.16%
18	0.12%
21	0.10%
24	0.08%
30	0.06%
36	0.05%

G. For any sewers exceeding an 18.8% slope, concrete anchor blocks are required in accordance with the following:

Slope (%)	Distance Between Anchors (LF)
18.8 to 35%	Not over 36 LF
35 to 50%	Not over 24 LF
> 50%	Not over 16 LF

The anchor blocks must extend a minimum of 19 inches below the main and 6 inches above the main. Crushed stone is also required as a bedding for the sewer pipe. See drawing on page 36 for details.

H. Order of Work

The Owner reserves the right to accept and use portions of the work when it is considered to be in the public's interest to do so; the Owner shall have the authority to establish the order in which the lines shall be worked.

I. Inspection

All work done and materials furnished shall be subject to inspection by the Owner or his authorized representative. Improper work shall be reconstructed and materials which do not conform to the requirements of this Section shall be removed from the work upon notice being received from the Owner of the rejection of those materials. The Owner shall have the right to mark rejected materials and/or the Contractor shall segregate said materials to distinguish them as such.

J. Organization of Work

The Contractor shall so organize the work that backfilling and cleanup shall closely follow pipe laying operations and manhole construction. In general, not more than one block of a street or roadway shall be closed for construction at any one time. Before proceeding with trenching operations in a succeeding block, the preceding section

shall be backfilled, cleanup completed and the street opened to traffic. For work outside the streets and roadways, backfilling and windrowing, in accordance with the provisions of "General Backfilling" paragraph of Section 312333 Trench Excavation and Backfill shall be performed in such a manner that not more than five hundred (500') feet of trench shall remain open at any one time. Failure on the part of the Contractor to comply with the above provisions in a reasonable manner, in the opinion of the Owner, shall be sufficient cause for the Owner to order a temporary shut-down of further trenching and pipe laying operations until the provisions have been met.

K. Bedding and Laying of Ductile Iron Pipe

All sewer pipe shall be laid upgrade, spigots shall point downgrade. The pipe and specials shall be laid in the trench so that, after the sewer is completed, the invert surface shall conform accurately to the grades and alignment fixed or given by the Owner. The interior of all pipes shall be carefully freed of all dirt and superfluous material of every description, as pipe laying proceeds. Defective joints discovered after laying shall be repaired and made tight. Defective pipe shall be removed and proper replacement made. Ductile iron pipe for gravity sewers and force mains shall be laid as specified using the following type of bedding required for the depth cover for the various sizes of pipe to be installed.

1. Flat Bottom Trench: New sewer pipe shall not be installed in a flat bottom trench.
2. Selected Materials: Pipe shall be installed using Type 3, Type 4, or Type 5 trench conditions. A Type 3 trench has a base with a minimum of 4 inches of loose soil with backfill lightly consolidated to top of pipe. A Type 4 trench has a base with a minimum 4 inches of sand, gravel, or crushed stone to a depth of 1/8 the pipe diameter and backfill must be compacted to top of pipe. A Type 5 trench has a base with a minimum of 4 inches of compacted granular material bedded to centerline of pipe with backfill of compacted granular or select material to top of pipe. Backfill shall be as specified in the 'Selected Backfilling' and 'General Backfilling' paragraphs of specification Section 312333.
3. Cover: Maximum depth of cover for Ductile iron pipe of the various classes and sizes to be installed are as follows:

Pipe Size (Inches)	Pressure Class	Nominal Thickness (In.)	Laying Condition		
			Type 3	Type 4	Type 5
			Maximum Depth of Cover – ft.		
4	350	0.25	69	85	100+
6	350	0.25	37	47	65
8	350	0.25	25	34	50
10	350	0.26	19	28	45
12	350	0.28	19	28	44
14	250	0.28	15	23	36
	300	0.30	17	26	42
	350	0.31	19	27	44
16	250	0.30	15	24	34
	300	0.32	17	26	39

	350	0.34	20	28	44
18	250	0.31	14	22	31
	300	0.34	17	26	36
	250	0.36	19	28	41
20	250	0.33	14	22	30
	300	0.36	17	26	35
	350	0.38	19	28	38
24	200	0.33	12	17	25
	250	0.37	15	20	29
	300	0.40	17	24	32
	350	0.43	19	28	37
30	150	0.34	9	14	22
	200	0.38	12	16	24
	250	0.42	15	19	27
	300	0.45	16	21	29
	350	0.49	19	25	33
36	150	0.38	9	14	21
	200	0.42	12	15	23
	250	0.47	14	18	25
	300	0.51	16	20	28
	350	0.56	19	24	32
42	150	0.41	9	13	20
	200	0.47	12	15	22
	250	0.52	14	17	25
	300	0.57	16	20	27
	350	0.63	19	23	32
48	150	0.46	9	13	20
	200	0.52	11	15	22
	250	0.58	13	17	24
	300	0.64	15	19	27
	350	0.70	18	22	30
54	150	0.51	9	13	20
	200	0.58	11	14	22
	250	0.65	13	16	24
	300	0.72	15	19	27
	350	0.79	18	22	30
60	150	0.54	9	13	20
	200	0.61	11	14	22
	250	0.68	13	16	24
	300	0.76	15	19	26
	350	0.83	18	22	30
64	150	0.56	9	13	20
	200	0.64	11	14	21
	250	0.72	13	16	24
	300	0.80	15	19	26
	350	0.87	17	21	29

L. Jointing of Ductile Iron Pipe with Mechanical or Pus h-on Joints

Proper and suitable tools and equipment shall be used for the safe and convenient handling and laying of ductile iron pipe. Care shall be taken to prevent damage to the exterior coating and interior cement lining. All pipe shall be carefully examined for cracks and other defects before laying. If any pipe or fitting is discovered to be

defective after having been laid, it shall be removed and replaced with sound material at the expense of the Contractor. Whenever pipe is required to be cut, the cutting shall be done by skilled workmen using an abrasive wheel cutter. Use of a cold chisel or oxyacetylene torch will not be permitted.

1. Mechanical Joints: Mechanical joints shall be made only by experienced mechanics. Sockets and spigots shall be washed with soapy water before slipping the gland and gasket over the spigot end of the pipe. The spigot shall be inserted into the socket full depth, then backed off ¼-inch to provide clearance for expansion. The gasket shall be brushed with soapy water and shall be pushed into position making sure that it is evenly seated in the socket. The gland shall then be moved into position for compressing the gasket. All bolts and nuts shall be made "finger-tight." For joints made in trenches, the bolts shall be tightened to a uniform permanent tightness, using a torque wrench for tightening. Bolts shall be tightened alternately 180 degrees apart. Measurement for payment of sewer lines will be made along the top of the pipe from center to center of manholes. ~~Cast Iron or Ductile Iron fittings will be paid for on the basis of the published weight of the fitting itself, exclusive of the follower rings and gaskets~~.
2. Push-On Joints: The groove and bell socket shall be thoroughly cleaned and lubricated before the gasket is inserted. Before inserting the gasket it shall be thoroughly lubricated and manufacturers instructions shall be followed for proper facing and seating of gasket. After the gasket is in place and just prior to joint assembly a generous coating of lubricant shall be applied to the exposed gasket surface. The lubricant used shall be a lubricant supplied by the pipe manufacturer. The plain end shall be inspected and any sharp edges which might damage the gasket shall be removed by means of a file or power grinder. Pipe that is cut in the field must be ground and beveled before assembly. Prior to inserting the plain end of the pipe into bell socket lubricant shall be applied to the beveled nose of the pipe. Small pipe may be pushed home with a long bar but large pipe may require additional power such as jack, lever or backhoe. A timber header shall be used between the bell and bar or other power to avoid damage to the pipe. During assembly of the pipe the joint must be kept straight while pushing. Pipe may be deflected if desired but only after the assembly is completed. Measurement for payment of sewer lines will be made along the top of the pipe from center to center of manholes. ~~Cast Iron or Ductile Iron fittings will be paid for on the basis of the published weight of the fitting itself, exclusive of the follower rings and gaskets~~.
3. Mechanical Joint or Push-on Joint Pipe on Piers: Mechanical or Push-on Joint Pipe may be used on piers in gravity sewer lines. Pipe shall be laid with a ¼ - inch clearance in each joint to provide for expansion. Jointing of pipe shall be as described above. On mechanical joint pipe the bolts shall be tightened alternately 180 degrees apart but be left "finger-tight" until the sewage is diverted into the sewers; then bolts shall be further tightened to a sufficient amount which will prevent leakage of the joint, but which will not prevent slippage which may occur because of temperature stresses. Measurement for

payment of Ductile Iron Pipe constructed on piers will be from end to end of Ductile Iron Pipe.

M. Precast Concrete Manholes

Precast concrete manholes shall be bedded on not less than six inches (6") of compacted crushed stone at Contractor's expense. The crushed stone shall extend not less than six inches (6") outside the walls of the manhole, and shall be compacted under entire length of pipe within manhole excavation. Manholes shall be 4, 5, and 6 feet in diameter as determined from the schedule of pipe sizes and line deflections, or as shown. The top of manholes outside of roads, streets, and highways shall extend a minimum of 12 inches above final grade unless otherwise noted.

1. Connection of Pipe to Manhole: Connections of pipe to manhole for 4-inch through 15-inch pipe shall be made with a flexible joint system. The joint system shall be a neoprene or synthetic rubber boot or sleeve, either cast or core drilled into the wall of manhole. The boot or sleeve shall be clamped and seated to the pipe with a stainless-steel band. The boot or sleeve system shall be "LOCK JOINT FLEXIBLE MANHOLE SLEEVE" as manufactured by Interpace Corporation, Parsippany, New Jersey or "KOR-N-SEAL" as manufactured by National Pollution Control Systems, Inc., Nashua, New Hampshire or equal. Connections of pipe to manhole for 18-inch pipe and above shall be made with a collar of mortar and brick. The opening between the pipe and the manhole shall have a minimum clearance of one inch (1") and shall be filled from the inside of the manhole with a non-shrink grout.
2. Adjustment: The top of the concentric top section shall have a minimum wall thickness of eight inches (8") to accommodate brick courses for height adjustment. A maximum of three (3) brick courses will be allowed for adjustment of manhole to required grade. The top of manholes outside of roads, streets, and highways shall be built to grade twelve inches (12") above ground surface unless otherwise shown on the Drawings. Manholes in roads, etc. shall be built to grade designated by the Owner. Vented manholes shall be constructed to elevations as shown on the Drawings.
3. Drop Connections: Drop connections will be required when the drop exceeds 2 feet or where called for on the drawings. Drop pipe shall not be smaller than 8 -inches. Generally, drop pipe shall be one size smaller than the sewer which they serve. Openings in walls of precast concrete manholes for drop connections shall not be made at joints. Drop connection fittings and riser pipe shall be encased in brick and mortar or formed Class "C" concrete. Drop connections for both b rick and precast concrete manholes shall conform with typical details as shown on the Drawings. Drop connections shall be carefully backfilled to prevent dangerous side pressures.
4. Manhole Inverts: Manhole inverts shall be carefully constructed with cement grout, Class "B" concrete, or cement mortar brickwork; special care shall be taken to lay the channel and adjacent pipes to grade. Cement mortar shall be made of one (1) part cement and two (2) parts clean sharp sand. Channels shall be properly formed, rounded, and troweled smooth. The connections of

the sewer with the wall and the channel of the manhole shall be tight and smooth.

5. Manhole Steps: Manhole steps shall conform to the details shown. Steps for brick manholes shall be installed along a vertical centerline, on approximately 15" centers. Steps shall be firmly and securely built into manhole walls as brickwork proceeds. Steps for precast concrete manholes shall be installed along a vertical centerline, on approximately 14"to 16" centers.
6. Future Sewer Connections: Where shown, a twelve inch (12") long pipe stub for future sewers, of such size as may be designated, shall be laid to proper grade and alignment and plugged with a factory plug with same type joint as used on the sewer pipe.
7. Manhole Frames and Covers: Manhole frames and covers shall be as detailed and shown on the Drawings and as called for in the Proposal and shall include setting to finished grade as required, and grouting in place.
8. Payment: Payment for precast concrete manholes will be made from actual field measurements to the nearest one-tenth foot as stated in the Proposal. Measurement for payment will be made from manhole invert to top of precast concrete cone. Payment for drop connections will be made at the unit prices stated in the Proposal, and shall include all necessary pipe, pipe fittings, brick or concrete encasement of drop pipe and extension of manhole base slab. Measurement for payment shall be from invert of TEE to invert of ELL. ~~Payment for manhole frames and covers will be made in accordance with the unit prices stated in the Proposal for the various types~~. No extra payment will be made for 6-inches of compacted crushed stone bedding under manhole, for manhole steps, for constructing manhole inverts or for furnishing and laying future sewer connections, the cost thereof to be included in the unit prices bid for manhole construction.

N. Connections to Existing Manholes

At locations where new sewers are shown to be connected to existing manholes, the Contractor may temporarily block and/or divert sewage flows to facilitate construction operations. The work shall consist of making the opening in the manhole wall, inserting the new pipe to the elevation shown, filling the space in the wall around the pipe with non-shrink mortar, and constructing and remodeling manhole inverts. High-early strength cement shall be used for mortar in order that proper channels may be formed in manhole bottoms with a minimum interruption of service to the existing sewer. The price bid for this work shall include all costs of labor, material, and equipment required to complete each connection and shall include the costs involved in blocking and/or diverting sewage flows, and shall include all costs of delays, temporary works, and maintaining existing sewers in service. No payment will be made for a connection to an existing pipe or manhole stub.

O. Connections to Existing Sewers

At locations where new sewers are shown to be connected to existing sewers at a new manhole, the Contractor shall first expose the existing sewer and install a

supporting timber beam with suitable straps around the pipe so as to bridge the excavation for the new manhole. The manhole shall then be constructed complete with invert and frame and cover. Under special conditions the Contractor may temporarily block and/or divert sewage flows to facilitate construction operations. Actual physical connection of the sewers will be made at a later date, as directed. The price bid for this work shall include all costs of labor, material, and equipment required to expose and support the existing sewer, block and/or divert sewage flows, make future physical connections, as well as all costs of delays, temporary works, and maintenance of existing sewers in service. Manholes, manhole frames and covers, and drop connections, if required, will be paid for separately in accordance with the unit prices bid for the various items.

P. House Service Branches

House service branch connections may be made with wyes, tees or pipe saddles made of the same material as the carrier pipe. In general, house service branches shall incline upward and should match as closely as possible the alignment of the existing services. The Contractor shall use whatever fittings are necessary and up to 10 linear feet of service pipe to properly align the service connection. Service pipe shall be ductile iron or HDPE pipe of the same size as the existing service, except the minimum size shall be 4". For new sewers, the service shall be 6" ductile iron pipe. The 6" ductile iron pipe will be run to the edge of the road right of way. Then a fernco will be used to connect a short 3-foot stub of 4" PVC with a plug. A 4x4 treated wood post shall be set in the ground at the edge of the service, painted green and extend at least 3 foot above grade. Where required, short radius bends shall be used to connect the service branch to the house service line. Pipe service branches, together with bends, shall be placed on a compacted bed of crushed stone in such a manner as to be self-supporting and to relieve the strain on branches and bends. ~~Payment for wyes, tees or saddles shall be at the price stated in the Proposal in addition to the prices bid for the completed sewer line~~. Payment for reconnecting existing services shall be made at the unit price as stated in the Proposal and shall include all work necessary to complete the connection, including, but not limited to, all fittings, pumping, bailing, crushed stone, and up to 10 linear feet of service pipe.

Q. Channel Excavation

At locations where storm water drainage is obstructed by sewer construction, the Contractor shall excavate new channels or widen and lower the grade of existing channels in accordance with Drawings and directions given. No separate payment will be made for the work of this section. The cost of such work, and all costs incidental thereto, shall be included in the unit price bid for sewers.

R. Concrete Encasement of Pipes

Where directed by the Owner, sewer pipe shall be completely encased with Class "B" concrete. The trench shall first be excavated not less than six inches (6") below the bell of the pipe and the pipe laid to line and grade on concrete blocking or equal.

Concrete shall then be placed to the full width of the trench, but in no case less than six inches (6") from the pipe bell on either side of the trench, and to a height of not less than six inches (6") above the top of the pipe bell. No backfill material shall be placed in the trench for a period of at least twenty-four (24) hours after the concrete encasement has been placed. Concrete encasement will be paid for at the unit price stated in the Proposal and shall include the costs of the additional depth of excavation, the furnishing of concrete blocking, and the laying of pipe to line and grade on the blocking.

S. Polyethylene Encasement

Polyethylene encasement shall be installed where required by the Owner due to corrosive soil conditions or potential stray currents in the soil (e.g., gas line easements) in accordance with ANSI/AWWA A21.5/C105.

T. Closing Pipe

When the work of pipe-laying is suspended for the night, and at other times, the end of the sewer shall be closed with a tight cover. The Contractor shall be responsible for keeping the sewer free from obstruction.

U. Inspection and Testing of Manholes

Vacuum Testing of precast concrete manholes shall be performed on all manholes on a given project. All testing shall be performed in accordance with the requirements of ASTM C 1244-93. All lift holes and any pipes entering the manhole shall be plugged prior to initiating the vacuum test. A vacuum will be drawn and the vacuum drop over a specified time period will be used to determine the acceptability of the manhole. Procedure: (1) The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations, (2) A vacuum of 10 in. of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time shall be measured for the vacuum to drop from 10 in. of mercury to 9 in. of mercury, (3) The manhole shall pass if the time for the vacuum reading to drop from 10 in. of mercury to 9 in. of mercury meets or exceeds the values indicated in Table 1, (4) If the manhole fails the initial test, necessary repairs shall be made by an approved method. The manhole shall then be retested until a satisfactory test is obtained.

Table 1 – Minimum Test Times for Various Manhole Diameters

Depth (ft)	Diameter, in.								
	30	33	36	42	48	54	60	66	72
	Time, s								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	57	65	72	81

22	31	33	39	46	55	61	72	79	89
24	33	36	42	51	58	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	96	108	121

V. Cleaning Up

Before the work is considered complete, all material not used, and rubbish of every character must be removed from the project. All streets, sidewalks, curbs, fences and other private or public facilities and structures disturbed must be in essentially good condition as existed before the work was done. The Contractor shall replace any subsequent settlement of backfill or pavement over trenches and the surfaces brought to grade.

W. Inspection and Testing

Sewer lines and appurtenances will be inspected by one of the following methods hydrostatic infiltration and exfiltration testing as per ASTM C 1091 – 90 or low-pressure air test as per ASTM C 829 – 90. The maximum acceptable leakage rate shall not exceed 25 gallons per day per inch diameter per mile of sewer. In addition, the sewer mains shall be inspected using closed circuit television methods approved by the Owner. All storm and underdrain lines shall be inspected for leakage, in the presence of the Engineer or his representative. All visible leaks shall be repaired regardless of whether infiltration, exfiltration or air test is within allowable limits. No sewer will be accepted until leakage tests demonstrate compliance with one of the leakage test methods. All sanitary sewer lines shall be tested for leakage, in the presence of the Engineer or his representative. Tests shall be conducted by one or a combination of the following two methods. Where natural ground water levels stand a minimum of two feet (2') above the top of the pipe, the amount of leakage may be determined from measurements made at the lower end of the sewer section under test. Where natural ground water levels do not stand two feet (2') above the top of the pipe, an exfiltration test shall be conducted on each section of sewer. Tests shall be as follows:

1. Infiltration Test: The infiltration test shall be performed up to an average maximum hydrostatic head of ten feet (10'). Sewers above the test section shall be closed before testing by the installation of suitable watertight bulkheads. The length of the test section shall be determined by the Engineer. The average of six readings at five- minute intervals will be used to determine the rate of infiltration for any one-test section. The rate of infiltration of ground water into any test section of sewer, including manholes, shall not exceed 25 gallons per day per inch diameter per mile.
2. Exfiltration Test: For the exfiltration test the ends of the pipe in the test section shall be closed with suitable watertight bulkheads. Inserted into each bulkhead at the top of the sewer pipe shall be a 2 -inch pipe nipple with an elbow. At the upper end of the test section a riser pipe shall be installed. The test section of pipe shall be filled through the pipe connection in the lower bulkhead, which

shall be fitted with a tight valve, until all air is exhausted and until water overflows the riser pipe at the upper end. Water may be introduced into the pipe twenty-four (24) hours prior to the test period to allow complete saturation. House service lines, if installed, shall also be fitted with suitable bulkheads having provisions for the release of air while the test section is being filled with water. During the test period, which shall extend over a period of thirty (30) minutes, water shall be introduced into the riser pipe from measured containers at such intervals as are necessary to maintain the water level at the top of the riser pipe. The total volume of water added during the thirty-(30) minute test period that should not exceed that shown for infiltration in (1) above.

3. Air Test: After the pipe has been installed and backfilled, the sewer may be tested between manholes by low pressure air test. The air test may be required by the Engineer instead of or in addition to the infiltration or exfiltration test. The pipe shall be filled with air slowly to a constant pressure of 4.0 psig. The pressure shall then be maintained between 3.5 and 4.0 psig for not less than two minutes. The sewer is acceptable if the loss of air from 3.5 psig to 2.5 psig is not less than the time shown in the following table.

Time per 100 Feet of Pipe		
Pipe Diameter (Inches)	Min.	Sec.
8	1	12
10	1	30
12	1	48
14	2	00
15	2	06
16	2	12
18	2	24
20	2	48
21	3	00
24	3	36
27	4	12
30	4	48
36	6	00
42	7	18
48	8	30
54	9	42

X. Acceptance of Work

Sewer lines and appurtenances will not be considered for acceptance until all provisions of the Specifications have been complied with, until all tests have been satisfactorily completed, and until inspection of the work has been made. Sewage flows shall not be diverted into new sewers until after such time as final inspection of the lines has been made by the Owner, and permission granted therefore.

Y. Cleaning and Internal Inspection

Before acceptance of any sewer or systems of sewers, lines shall be cleaned and inspected in accordance with these Specifications. Where any obstruction is met, the Contractor will be required to clean the sewers by means of rods, swabs, or other instruments. Lines and manholes shall be clean before final inspection. Final inspection shall be performed by the Contractor with the aid of closed circuit tele vision equipment. The television picture shall be videotaped or recorded on a DVD as an inspection record and written logs prepared which indicate the location of service lines, leaks and other obvious construction defects such as broken sewer pipes, separated joints, etc. Pipe lines shall be straight and show a uniform grade between manholes. The Contractor shall be required to correct any variations there from or other deficiencies which may be disclosed during the inspection. No extra payment will be made for cleaning, the cost thereof to be included in the prices bid for sewers. Internal inspection by closed circuit television will be paid for on a linear foot basis as stated in the proposal.

Z. Erosion Control

All sewers will be installed in accordance with the requirements under Section 312500 Erosion and Sedimentation Control. No separate payment will be made for this work except as provided for in the bid.

660.4 – Measurement

This work is measured for payment either per each, or per linear foot, whichever is shown on the plans.

- **Sewer Main - Ductile Iron Pipe.** All Sewer Main Ductile Iron piping line items shall be measured in linear feet and shall include costs for all piping and installation, locating wire, locating tape, trench excavation, trench protection, dewatering, bedding material, asphalt or concrete cutting, normal joints and gaskets, normal backfill, infiltration and exfiltration testing, mandrel pulling, and all other incidentals necessary to provide a complete finished installation of the Sewer Main or Sewer Lateral piping system in accordance with the plans and specifications.
- **Sewer Main - Steel Pipe for Ditch or Creek Crossings.** All Sewer Main Steel piping line items shall be measured in linear feet and shall include costs for all piping and installation, locating wire, locating tape, trench excavation, trench protection, dewatering, bedding material, asphalt or concrete cutting, normal joints and gaskets, normal backfill, infiltration and exfiltration testing, mandrel pulling, and all other incidentals necessary to provide a complete finished installation of the Sewer Main or Sewer Lateral piping system in accordance with the plans and specifications.
- **Sewer Lateral.** All Sewer Lateral piping line items shall be measured in liner feet and shall include costs for 6-inch Ductile Iron piping, concrete collar or precast concrete valve ring, PVC twist-off plug, mainline wye, 6" wye, cleanout, plug, saddles, excavation, dewatering, asphalt or concrete cutting, installation, normal backfill, property restoration, and all other incidentals necessary to provide a complete finished installation of the Sewer Lateral piping system in accordance with the plans and specifications.

- **Utility Conflict Adjustment – Sewer Main.** All Sewer Main Utility Conflict Adjustment line items shall be measured in linear feet and shall include costs for all piping and installation, locating wire, locating tape, trench excavation, trench protection, dewatering, bedding material, asphalt or concrete cutting, normal joints and gaskets, normal backfill, infiltration and exfiltration testing, mandrel pulling, temporary capping and pumping, and all other incidentals necessary to provide a complete finished installation for replacing, raising, lowering, or re-routing the conflicted Sewer Main in accordance with the plans and specifications that are necessary to resolve the conflict.
- **Utility Conflict Adjustment – Sewer Laterals.** All Sewer Lateral Utility Conflict Adjustment line items shall be measured in liner feet and shall include costs for any new or additional piping, concrete collar or precast concrete valve ring, PVC twist-off plug, mainline wye, 6" wye, cleanout, plug, saddles, excavation, dewatering, asphalt or concrete cutting, installation, normal backfill, property restoration, temporary capping and pumping, and all other incidentals necessary to provide a complete finished installation for replacing, raising, lowering, or re-routing the conflicted Sewer Lateral in accordance with the plans and specifications that are necessary to resolve the conflict.

660.5 – Payment

This Work will be paid for at the Contract Price per linear foot, each complete in place and accepted. Payment is full compensation for all things, including incidentals, and direct and indirect costs, to complete the Work.

Payment will be made under:

Item No. 660	Sewer Main, ___ in	Per linear foot
Item No. 660	Sewer Lateral, ___ in	Per linear foot
Item No. 660	Utility Conflict Adjustment – Sewer Main, ___ in	Per linear foot
Item No. 660	Utility Conflict Adjustment – Sewer Lateral, ___ in	Per linear foot

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 670 – Water Mains and Accessories

670.1 – Scope

This specification covers all aspects of requirements for new water mains, taps, and related accessories including submittals, products, and implementation. All new water infrastructure will be designed to meet required flows of the customer, the fire department responsible for the particular jurisdiction, and the Minimum Standards for Public Water Systems (May 2000) published by the Drinking Water Permitting and Engineering Program of the Georgia Environmental Protection Division. Design flows for new systems and taps will be determined by evaluating similar types of customers using actual metered data and contacting the appropriate fire department. Where data is not available, the Minimum Standards for Public Water Systems (May 2000) published by the Drinking Water Permitting and Engineering Program of the Georgia Environmental Protection Division will be used.

670.2 – H.D.P.E. Pipe Specifications for Transmission of Potable Water

670.2.01 – Scope

The Contractor will install water mains less than 8-inch in size using SDR 9 HDPE pipe for the transmission of potable water as shown on the Drawings and in accordance with these Specifications. Water mains larger than 8" shall be ductile iron pipe as presented in the applicable part of this Section and on the Drawings. HDPE pipe shall be installed in road rights-of-way or easements obtained by the Owner using trenching or horizontal boring in accordance with these specifications.

670.2.02 – Submittals

1. The Contractor will submit complete product data from named vendor on all products proposed for use in the project.
2. Results from recording of each fuse on HDPE pipe will be submitted to the Owner as part of the installation record.
3. Contractor will submit a proposed method for pigging or cleaning lines for approval by the Owner after installation.
4. Contractor shall provide proof of qualification for all labor involved in fusing of HDPE pipe. Proof of qualification shall be written confirmation of training by a manufacturer involved in the manufacture of HDPE pipe for more than two years.

Only individuals with such qualifications will be allowed to perform fusing operations.

5. Contractor shall submit proposed pressure testing methodology for review by the Owner prior to initiating any final pressure testing of pipe.

670.2.03 – Products

This section of the specifications covers the requirements for high density polyethylene pipe (HDPE) for transmission of potable water, fittings, accessories, and service lines. The minimum pipe size allowed is 2-inch for dead ends of less than 600 linear feet. The minimum pipe size for all other water mains is 6-inch.

A. HDPE Pipe

Polyethylene pipe shall conform to ANSI/AWWA Standard C 906-90 (or most recent edition) and NSF 61. The pipe shall be PE 3408 with an SDR of 9 as directed by the owner and be rated for a pressure of 200 psi., respectively. The carbon black content shall measure 2% to 3% by weight when tested according to ANSI/ASTM D 1603 or ASTM D 4211. The pipe shall be provided in ductile iron pipe sizes. The pipe shall be produced by Rinker, J-M PE Corporation Pipe, or equal. All polyethylene pipe shall be blue PRISMA coated or shall have co extruded blue striping for identification. The manufacturer shall have an ISO 9001 listing covering the HDPE manufacturing facility as well as the corporate office. The Owner at no additional cost may require quality audits. All pipe will be provided in standard straight lengths. No coiled pipe will be accepted for installation on the project.

1. Quality and Inspection: All pipe shall be smooth on both the interior and exterior surfaces; be free of noticeable imperfections such as cracks, blisters, or kinks in the pipe. The Owner, if he so chooses, shall be able to inspect the pipe at the pipe plant, trench, and other various storage sites. Based on these observations the Owner will have the right to reject any and all piping not conforming to these stated requirements, independent of laboratory tests. Field repair of any damaged piping shall not be permitted. The Owner reserves the right to require the removal of fused connections for destructive testing to verify the integrity of fused joints, etc.
2. Experience of Manufacturer: The pipe manufacturer shall provide evidence, if requested by the Owner, of having provided quality pipe and joints that have shown satisfactory results in service for a period of no less than two years. Evidence of completion of projects of similar size and timing for HDPE pipe will also be provided upon Owner request. All pipe within any given phase shall be from the same manufacturer.
3. Fittings: The fittings shall meet all of the requirements of the pipe to which they are to be fused. They shall be homogeneous throughout and essentially uniform in color, opacity, density and other properties. Fittings should also be free of such defects as cuts, cracks, or holes. Fabricated fittings will not be allowed where molded or machined fittings are available. All fittings will be manufactured in accordance with AWWA C906 with a minimum pressure class of 200 psi.
4. Markings: Markings shall be legible during usual handling of the pipe and be applied in a manner that will not damage the pipe. The following markings shall be provided as shown below:

a. Nominal size and OD base
b. Standard material code designation
c. Dimension ratio
d. Pressure class
e. AWWA designation for this standard (AWWA C 906-90)
f. Manufacturer's production code
g. Material test category of pipe
h. NSF 61 approved

B. Locating Wire & Detector Tape

The Contractor will supply all locating wire and detector tape. Locating wire shall be 8 gage, coated wire for the HDPE mainlines, and 12 gage, coated wire for the HDPE service lines. Detection tape shall be composed of a solid aluminum foil encased in a protective plastic jacket. Tapes shall be color coded in accordance with AWWA color codes with the following legends: Water Systems, Safety Precaution Blue, "Caution Water Line Buried Below". 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 surface and 3-inches when buried greater than 10-inches. Tape shall be equal to Lineguard Type II Detectable, Allen Systems Detectatape, or equal.

C. Electrofusion Couplings

Electrofusion couplings and saddles will not be used on this Project without written approval of Owner.

D. Flange Assemblies

Flange assemblies shall consist of a metal back-up flange or ring and a polyethylene flange adapter. The back-up flange shall be slipped over the pipe profile flange adapter and then be fused into the plain end pipe.

E. Service Lines

The service lines shall be polyethylene tubing material with the standard PE code designation of PE 3408. Polyethylene tubing and piping shall SDR 9 as directed by the owner and be rated for a pressure of 200 psi respectively. Service tubing shall comply with all requirements of AWWA C901-02 for Polyethylene Pressure Pipe and Tubing, ½ inch through 3-inch for water service. Tubing dimensions shall be compatible with copper tubing outside dimensions. All tube and pipe shall be smooth on both the interior and exterior surfaces; be free of noticeable imperfections such as cracks, blisters, or kinks in the pipe. The Owner, if he so chooses, shall be able to inspect the tube or pipe at the pipe plant, trench, and other various storage sites. Based on these observations the Owner will have the right to reject any and all piping not conforming to these stated requirements, independent of laboratory tests. Field repair of any damaged tubing or piping shall not be permitted.

670.2.04 – Implementation

A. Unloading

Equipment and facilities for unloading, hauling, distributing and storing materials shall be furnished by the Contractor and shall at all times be available for use in unloading materials. Delays in unloading railroad cars, unloading trucks, or hauling from freight terminal that incur demurrage, truck waiting charges or terminal charges shall be at the expense of the Contractor.

B. Handling

Pipe, fittings and other material shall be carefully handled so as to prevent breaking and/or damage. Pipe may be unloaded individually by hand but shall not be unloaded by rolling or dropping off of trucks or cars. Preferred unloading is in units using mechanical equipment, such as forklifts, cherry pickers or front-end loaders with forks. If forklift equipment is not available units may be unloaded with use of spreader bar on top and nylon straps looped under the unit.

C. Distributing

Materials shall be distributed and placed so as to least interfere with traffic. No street or roadway may be closed without first obtaining permission from the proper authorities. The Contractor shall furnish and maintain proper warning signs and obstruction lights for protection of traffic along highways, streets, and roadways upon which material is disturbed. No distributed material shall be placed in drainage ditches.

D. Storage

All pipe, fittings and other materials which cannot be distributed along the route of the work shall be stored for subsequent use when needed. The Contractor shall make his own arrangements for the use of storage areas; except that, with permission, he may make reasonable use of the Owner's storage yards.

E. Joining Methods for HDPE Pipe

The pipe and fittings shall be joined by butt or saddle fusion, mechanical joint adapters, or by flange connections in accordance with manufacturer's recommendations. All joints shall be fused, not including connections to existing utilities, unless otherwise shown on Drawings or requested by the Owner.

1. Fusion: The pipe shall be joined by heat fusion of the ends. Prior to fusion the pipe shall be clean and the ends shall be cut square. Fusion system operators shall be trained in the use of the equipment by the pipe supplier or manufacturer of the fusing machine and be experienced in the operation of the equipment. All fuses shall be recorded, the recording of the information must be provided to the Owner, and the recorded information must meet the standard requirements of the pipe manufacturer. All fusions failing to meet these requirements shall be removed and refused.
2. Flange: A flange assembly consists of a metal back-up flange or ring and a polyethylene flange adapter. The back-up flange is slipped over the pipe profile and the stub-end, or flange adapter, is then fused into the plain end pipe.
3. Connection to Ductile Iron Pipe or Valves and Fire Hydrants: Connections to ductile iron pipe, valves, and fire hydrants shall be by mechanical joints or flanges. All connections to ductile iron pipe, valves or fire hydrants must be restrained.

a. Restrained Mechanical Joints: Restrained mechanical joints shall be made using mechanical joint adapters and shall incorporate a factory installed stiffener manufactured by Rinker, J-M PE Corporation Pipe, or equal.
b. Flange: Flange connections shall be as described above in E (2).

F. Installation of Locating Wire and Detector Tape

The Contractor shall be required to install locator wire along the entire section of pipeline and along all service connections. The locator wire shall be installed simultaneously with the polyethylene piping. Detector tape shall be installed by the Contractor once backfill has been placed and compacted to at least 12 inches above the top of the pipe and not more than 18 inches above the top of the pipe. Wire shall be properly spliced at each end connection and each service connection. Care should be taken to adequately wrap and protect wire at all splice locations. No bare wire shall be accepted. There will be no additional pay item for this work; it should be included in the Unit Price for installing polyethylene pipelines and services.

G. Backfill and Bedding

Contractor will install pipe in accordance with ASTM D 2774 Standard Practice for Underground Installation of Thermoplastic Pipe, AWWA C906-90 (as amended), and the manufacturer's recommendations. Pipe shall not be installed in water or wet mucky soils, on rock or stony soil. When these conditions exist, Contractor shall remove the objectionable material to a depth of 6" below the pipes final grade and install crushed stone or other approved bedding materials.

H. Cold (Field) Bending

Contractor shall not bend the pipe to fit a trench more than that allowed by the pipe manufacturer. For 6" and 8" SDR 9 pipe, the bending radius will not be less than 20 times the outer diameter of the pipe. For SDR 11 pipe, the bending radius will not be less than 25 times the outer diameter of the pipe.

I. Installation by Pulling In

Contractor will submit to Owner maximum proposed pull in length for the pressure class and diameter pipe proposed to be pulled into an open trench. Pull in lengths will not exceed the maximum lengths recommended by the manufacturer for the class and diameter pipe. Final tie-ins should be made one day after pulling in to allow the pipe to recover from the stress of the pulling.

J. Installation by Horizontal Boring or Directional Drilling

This work shall be done in accordance with Section 02229. Contractor shall install pipe under creeks and County Roads using horizontal boring or directional drilling when directed by Owner. Casing pipe will be installed for all creek and road crossings. The pipeline shall then be installed directly into the casing without centering spacers. At casing exit or entry points, pipe should be wrapped with an elastomeric sheet material.

K. Protection of Pipe Openings

During installation, the Contractor will ensure that pipe ends that have not been fused will be protected against dirt, debris, animals, and other foreign materials. Plastic caps held in place with duct tape or other methods as approved by the Owner may be used.

L. Connecting Service Lines to Main Lines

Connection to the main lines shall be made by using self-tapping saddles with integral cutters fused to the main line. Electro-fusion saddles are not allowed without prior approval of Owner. A curb cock shall be installed on the self-tapping saddle with a compression fitting. The meter connection shall be installed with a compression joint (Compression fittings shall have stiffener inserts listed with NSF for potable water service as made by Romac, Philmac, or equal inserted in the tubing before making the connection). The joints must withstand 200 psi test pressure. The curb stop and meter fitting shall be Mueller or equal.

M. Installation of Fire Hydrants

Fire hydrants, in general, shall be installed and jointed as specified above for pipe and fittings. The installation of hydrants shall include the installation of extension sections, if required, and shall include the installation of crushed stone drain as shown on the Drawing Details and/or as specified herein. Class 1 or 2 soil materials will be installed under all fire hydrants to a depth of at least 6 inches as shown in the plans.

N. Blocking and Restraining

Contractor shall fully restrain the pipe through the use of fully restrained joints by means of butt fusion, M-J adapters, or flange adapters. Do not use thrust blocks with HDPE pipe installations.

O. Cleaning

Before acceptance of any line, the line must be clean. If the Contractor fails to close the pipe or debris is found to be in the line, the Contractor shall clean the line by pigging or other suitable means at the Contractor's expense. The Contractor shall be prepared to pig all lines installed within this project in order to remove the HDPE pipe shavings, etc. The successful bidder must propose a method of pigging the lines for approval by Dalton Utilities before proceeding with any pigging operations. This request must be submitted in writing and shall be approved in writing by the Owner prior to line purging.

P. Testing

Testing of HDPE pipe installations will include destructive testing as well as final pressure testing to ensure no leaks are present in the line.

1. At the direction of the Owner, Contractor will perform destructive strap testing on selected fuses to determine if the fuses meet with manufacturer's requirements. Pipe used in this testing will not be installed in the Project.
2. The testing of the HDPE pipe will be performed in accordance with AWWA C906- 90 (as amended) and the manufacturer's recommendations. Contractor will submit a test protocol to the Owner for approval prior to implementing any testing.

Q. Sterilization of Pipe Lines

The AWWA Standard for Disinfecting Water Mains ANSI/AWWA C 651-92 (as amended to date) and these Specifications shall be the standard used to disinfect all new water lines and any existing lines contaminated during construction. The Contractor shall furnish all equipment and labor of every nature to disinfect new lines and any line contaminated during construction.

1. Clean Lines: Care shall be taken during construction to keep line free from debris, ground water and dirt.
2. Cross Connections: Cross connections shall not be allowed during testing, flushing, chlorinating, or dechlorinating of the new lines.
3. Flushing: All new lines shall be flushed before disinfecting. The recommended velocity by ANSI/AWWA C 651-92 for flushing is 2 ½ feet per second.
4. Chlorination: All pipe and appurtenances, both existing and newly constructed which have been exposed to contamination by reason of the construction shall be sterilized after testing and flushing of the line has been completed. The line shall be filled, using the continuous feed method, with fresh water containing 50 parts per million of chlorine and allowed to stand for 24 hours. During the test, chlorine residuals shall be checked every 1200 feet on new lines, at the end of each new line, and at the end of all new service lines or connections.
5. De-chlorination: After the new lines have been chlorinated for 24 hours, the chlorinated water shall be flushed from the lines. The discharge of the chlorinated waste shall be chemically treated to remove the residual chlorine. (See appendix of ANSI/AWWA C 651-92 for chemicals and amounts to dissipate the chlorine.) The method for mixing and contact time shall be arranged by the Contractor.
6. Connections: After the pipe and appurtenances have been flushed, tested, chlorinated, and have passed the bacteriological test, they may be connected to the existing system.
7. Connections Equal to or Less than One Pipe Length (18 feet): The new pipe, fittings, and valves required for the connections shall be spray disinfected or swabbed with a minimum 1% solution of chlorine just prior to being installed, if the length of connection from the new main to the existing main is equal to or less than 18 feet.
8. Connections Greater Than One Pipe Length: The pipe required for the connection must be set up above ground, chlorinated and bacteriological samples taken as described above if the length of connection is greater than 18 feet. After the bacteriological tests have proven satisfactory, the new pipe can be used in connecting the new main to the existing system. After the samples have been taken, the ends of the new pipe must be closed with water-tight plugs or caps until the connections are made.

670.3 – Ductile Iron Pipe Specifications for Transmission of Potable Water

670.3.01 – Scope

The Contractor shall provide all products and perform all labor associated with the installation of Ductile iron pipe in accordance with the Drawings. Ductile iron pipe meeting the requirements of this part of Section 02665 shall be used for all 12" through 30" pipe installed on the Project.

670.3.02 – Submittals

Complete shop drawings and engineering data for all products shall be submitted to the Owner. In addition, the proposed route for laying of the 24" and 30" lines detailed in the Drawings shall be provided to the Owner for approval prior to beginning installation.

670.3.03 – Products

Complete shop drawings and engineering data for all products shall be submitted to the Owner. In addition, the proposed route for laying of the 24" and 30" lines detailed in the Drawings shall be provided to the Owner for approval prior to beginning installation.

A. Ductile Iron Pipe

Ductile iron pipe shall be a minimum Special Thickness Class 51, unless otherwise specified or shown on the Drawings. All pipe shall be 6 inch through 30 inches in diameter and shall be installed in lengths of 18 to 20 feet. Minimum acceptable working pressure will be 350 psi for 6" through 12" pipe and 250 psi for 24" and 30" pipe. Ductile iron pipe shall be manufactured in accordance with AWWA C 151.

1. Flanges: Flanged pipe shall have a minimum wall thickness equal to Special Class 53. All flanges shall be furnished by the pipe manufacturer.
2. Lining and Coating: Pipe and fittings shall be cement lined in accordance with AWWA C 104. Pipe and fittings shall be installed with a bituminous outside coating and interior seal coating.
3. Joints: Joints shall be push-on for pipe and standard mechanical for fittings, unless otherwise shown or specified. Push-on and mechanical joints shall conform to AWWA C 111.
4. Flanged Joints: Flanged joints shall meet the requirements of ANSI B16.1, Class 125.
5. Ductile Iron Pipe Fittings: Fittings shall be ductile iron and shall conform to AWWA C 110 or AWWA C 153 with a minimum rated working pressure of 250 psi.
6. Gaskets: Appropriate gaskets for mechanical and flange joints shall be installed. Gaskets for flange joints shall be made of 1/8-inch thick, cloth reinforced rubber; gaskets may be ring type or full-face type.
7. Nuts and Bolts:
    a. All bolts and nuts shall be threaded in accordance with ANSI B1.1, Coarse Thread Series, Class 2A external and 2B internal fit. All nuts and bolts shall be manufactured in the U.S.A.
    b. Nuts and bolts for mechanical joints shall be Tee Head bolts and nuts of high strength low-alloy steel in accordance with ASTM A 242 to the dimensions shown in AWWA C111/ANSI A21.11.
    c. 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 C 115 for Class 125 flanges shown in ANSI/ASME B16.1.
8. Glands: Mechanical joint glands shall be ductile iron.
9. Polyethylene Film: Ductile iron pipe shall be encased with polyethylene film where shown on the Drawings or requested by the Owner. Polyethylene film shall have a minimum thickness of 8 mils, be tubular and meet the requirements of AWWA C105.

10. Thrust Collars: Thrust collars shall be welded-on ductile iron body type designed to withstand thrust due to 250 psi internal pressure on a dead end.
11. Welded-On Outlets: Welded-on-outlets shall be fabricated from centrifugally cast ductile iron pipe, manufactured and tested in accordance with ANSI/AWWA C151/A21.51. The outlet shall be furnished with a mechanical joint, restrained joint, flanged or plain end as required for the work. The outlets shall be rated for a minimum working pressure of 250 psi. All welding, fabrication and outlet hole drilling shall be performed by the manufacturer.
12. Inspection: Final acceptance will be on the basis of the Owner's inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards. Pipe damaged during unloading, transportation or storage shall not be installed.
13. Mechanical joint restraint devices: Mechanical joint restraint devices nominal pipe sizes 3 inch through 48 inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10. The devices shall have a working pressure rating of 350 psi for 3-16 inch and 250 psi for 18-48 inch. Ratings are for water pressure and must include a minimum safety factor of 2 to 1 in all sizes. Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536. Ductile iron gripping wedges shall be heat treated within a range of 370 to 470 BHN. Three (3) test bars shall be incrementally poured per production shift as per Underwriter's Laboratory (U.L.) specifications and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8. Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society, on a per ladle basis. All components shall be manufactured and assembled in the United States. Restraint devices shall be Listed by Underwriters Laboratories (3" through 24" inch size) and Approved by Factory Mutual (3" through 12" inch size). Mechanical joint restraint shall be Megalug Series 1100 produced by EBAA Iron Inc. or approved equal.

B. Copper Pipe Service Lines

The service lines off of ductile iron pipe water mains shall be copper tubing material conforming to ASTM B 88, Type K. Fittings shall be brass with compression connection inlets and outlets, ANSI B16.26. Adapters shall be brass ANSI B16.18, where required. Unions shall be cast bronze and all joints shall be compression type.

C. 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 AWWA color codes with the following legends: Water Systems, Safety Precaution Blue, "Caution Water Line Buried Below". 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 surface and 3-inches when buried greater than 10-inches. Tape shall be equal to Lineguard Type II Detectable, Allen Systems Detectatape, or equal.

D. Curb Stops and Meter Fittings

The curb stop and meter fitting shall be Mueller or equal.

670.3.04 – Implementation

A. Unloading

Equipment and facilities for unloading, hauling, distributing and storing materials shall be furnished by the Contractor and shall at all times be available for use in unloading materials. Delays in unloading railroad cars, unloading trucks, or hauling from freight terminal that incur demurrage, truck waiting charges or terminal charges shall be at the expense of the Contractor.

B. Handling

Pipe, fittings and other material shall be carefully handled so as to prevent breaking and/or damage. Pipe may be unloaded individually by hand but shall not be unloaded by rolling or dropping off of trucks or cars. Preferred unloading is in units using mechanical equipment, such as fork lifts, cherry pickers or front-end loaders with forks. If fork lift equipment is not available units may be unloaded with use of spreader bar on top and nylon strips or cables (cushioned with rubber hose sleeve) looped under the unit.

C. Distributing

Materials shall be distributed and placed so as to least interfere with traffic. No street or roadway may be closed without first obtaining permission from the proper authorities. The Contractor shall furnish and maintain proper warning signs and obstruction lights for protection of traffic along highways, streets, and roadways upon which material is disturbed. No distributed material shall be placed in drainage ditches.

D. Storage

All pipe, fittings and other materials which cannot be distributed along the route of the work shall be stored for subsequent use when needed. The Contractor shall make his own arrangements for the use of storage areas; except that, with permission, he may make reasonable use of the Owner's storage yards.

E. Installation of Pipe

Contractor shall install ductile iron pipe in accordance with manufacturer's instructions and AWWA C600-99 as amended.

1. Pipe, fittings, valves and hydrants shall be lowered into the trench in a careful manner using slings and ropes as necessary to avoid damage to the water main or the protective coatings of the water main. Pipe shall in no cases be dropped into the trench.
2. All lumps, blisters, and excess coatings shall be removed from the socket and the plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry to ensure the removal of all dirt, sand, grit and other foreign materials prior to laying the pipe. No pipe containing dirt, debris or other foreign materials shall be laid.
3. As each pipe length is laid, the Contractor shall assemble the joint and bring the pipe to proper grade and alignment. Pipe shall be secured in place with the proper backfill.

4. Contractor shall not deflect any joint more than the maximum deflection recommended by the manufacturer. Contractor shall maintain a transit on site to check that deflections allowances are not exceeded.
5. Joints shall be push-on, mechanical or flange and shall be assembled in accordance with manufacturer's instructions.
6. Cutting of pipe: Cut ductile iron pipe using an abrasive wheel saw. Remove all burrs and smooth end before jointing. 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, and accessories in the correct locations.
7. Quality and Inspection: All pipe shall be smooth on both the interior and exterior surfaces; be free of noticeable imperfections such as cracks, blisters, or kinks in the pipe. The Owner, if he so chooses, shall be able to inspect the pipe at the trench and other various storage sites. Based on these observations the Owner will have the right to reject any and all piping not conforming to these stated requirements, independent of laboratory tests. Field repair of any damaged piping shall not be permitted.

F. Bedding of Ductile Iron Pipe

All pipe shall be laid on foundations prepared in accordance with the following specifications. Pipe shall be laid as specified using the following classes of bedding required for the various type soils and conditions encountered. Bedding for all pipe shall be in accordance with ASTM D 2321, as amended to date, the manufacturer's recommendations and these Specifications.

1. Bedding Material: Class I, and II, type materials can be used in all conditions for bedding. Type III materials can be used for bedding and haunching in dry ditches. Class IV and V materials will not be permitted for bedding and haunching under any condition.
2. Depth of Bedding: Trench shall be undercut to allow for a minimum of six inches (6") of bedding material. After joint assembly, Bedding material shall be placed under and up to the spring line of the pipe for the entire length of pipe and compacted. Compaction to the spring line of the pipe shall be of the same material used in the bedding. Selected backfill shall then be carried to a point twelve inches (12") above the top of pipe, using hand tools for tamping. Puddling will not be allowed as a method of compaction. The remaining backfill shall be as specified in "Selected Backfill" and "General Backfill" paragraphs of these specifications. Pipe shall have at least thirty-six inches (36") of cover before wheel loading and at least forty-eight inches (48") of cover before using heavy duty tamping equipment such as a hydro-hammer.
3. Definition of Bedding Material: Class I, II, III, IV, and V materials are defined as follows:
   a. Class I Angular ¼ to ¾ inches graded stone test revision of ASTM C 33 - Gradation # 67 (ASTM #67) or # 57 (ASTM #57) are acceptable.
   b. Class II Coarse sands and gravel with maximum particle size of ¾ inches including variously graded sands and gravel containing small Percentages of fines, generally granular and non-cohesive, either wet or dry.
   c. Class III Fine sand and clayey (clay filled) gravel, including fine sands, sand-clay mixtures and gravel-clay mixtures.

d. Class IV Silt, silty clays and clays, including inorganic clays and silts of medium to high plasticity and liquid limits.
e. Class V This class includes organic soils as well as soils containing frozen earth, debris, rocks larger than 1-1/2 inches in diameter, and other foreign materials.

4. Trench Width: The maximum clear trench width at the top of the pipe shall not exceed a width equal to the nominal pipe diameter plus eighteen inches (18"). If this width is exceeded or the pipe is installed in a compacted embankment, pipe embedment shall be compacted to the trench walls.
5. Trench Depths: Maximum depth of backfill over ductile iron pipe shall be in accordance with manufacturer's recommendations and in any case shall not exceed 30 feet when Class I bedding and compaction to 95% of maximum dry density is achieved.

G. Connection of New Water Mains to Existing Water Mains

The Contractor will be required to make connections to existing pipe lines as shown on the drawings. Before laying pipe, locate the points of connection and allow the Owner to confirm the nature of the connection. Contractor shall make connections to existing water mains only when system operations permit. Operation of existing valves shall be only under direct supervision of the Owner. Tapping saddles and tapping sleeves shall be installed as follows:

1. Holes in new pipe shall be machine cut, either in the field or at the factory. No torch cutting of holes shall be allowed.
2. Prior to attaching saddles or sleeves, the existing pipe shall be thoroughly cleaned, utilizing a brush and rag to the satisfaction of the Owner.
3. Before performing field machine cut, the watertightness of the saddle or 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 of 200 psi. No leakage shall be permitted for a period of 10 minutes.

H. Connection of Services to Main Lines

Connection to the main lines shall be made by tapping into the main through a corporation stop. A corporation cock must be provided in the water main for each new service line. The joints shall withstand 200 psi test pressure. Bedding of service lines shall be equal to that used for ductile iron pipe.

I. Installation of Fire Hydrants

Fire hydrants, in general, shall be installed and jointed as specified above for pipe and fittings. The installation of hydrants shall include the installation of extension sections, if required, and shall include the installation of crushed stone drain as shown on the Details in the Drawings. Fire hydrants shall be installed in accordance with AWWA C503-88 (as amended).

J. Blocking and Restraining

Provide restraint at all points where hydraulic thrust may develop.

1. Retainer glands shall be used on fire hydrants, fittings and valves in addition to concrete blocking. Retainer glands shall be installed in accordance with the manufacturer's instructions, especially with respect to the torque of set screws. The Contractor shall provide a torque wrench to verify the torque on all set screws which do not have inherent torque indicators.
2. Provide concrete blocking for all bends, tees, valves and other points where thrust may develop. All piping shall be properly blocked and restrained prior to pressure testing and placing the new line into service. All concrete blocking shall be allowed to achieve initial set prior to any loading of the pipeline. Blocking shall be as shown on the Drawings. Where rodding is required to restrain piping, all thread rods shall be coated as directed by the Owner prior to encasing with concrete and backfilling.

K. Cleaning

Before acceptance of any water line, the line must be clean. If the Contractor fails to close the pipe or debris is found to be in the line, the Contractor shall clean the line by pigging or other suitable means at the Contractor's expense. The Contractor must propose a method of pigging the lines for approval by Owner before proceeding with any pigging operations. This request must be submitted in writing and shall be approved in writing by the Owner prior to line purging. No separate payment shall be made for the above work.

L. Testing Pressure Lines

Testing of ductile iron pressure pipe shall be in accordance with AWWA. The pipe line shall be filled with water, air completely exhausted and a leakage test made. The Contractor shall furnish a test pump, and means for accurate measurement of water introduced into a line during testing, and shall furnish and install corporation stops in the line as required for blowing lines free from air and at the test pump location.

1. Test pressures for the water line shall be 200 lbs. per square inch pressure or as otherwise noted. The test pressure shall not be allowed to fall more than five (5) pounds per square inch below test pressure during the test. The water introduced into the line to maintain this pressure shall represent the leakage. Allowable leakage in gallons per hour per 1000 feet of pipeline shall not exceed 0.1062 D (D is the nominal pipe diameter in inches). Minimum test period shall be twenty-four (24) hours. If in the opinion of the Owner additional testing is required, such additional testing shall be performed at no additional cost to the Owner.
2. The Contractor shall furnish, install, and remove all temporary bulkheads, flanges, or plugs, to permit the required pressure tests, and shall furnish all equipment and labor to properly carry out such tests and to replace defective material.
3. Any cracked or broken pipe shall be removed and replaced with sound pieces. Joints which leak shall be carefully remade. Remade joints and replaced material shall be re-tested under the same conditions of operation. If joints or materials are then found to be defective, they shall be remade and replaced until the line passes the required test.

L. Sterilization of Pipe Lines

The AWWA Standard for Disinfecting Water Mains ANSI/AWWA C 651-92 (as amended to date) and these Specifications shall be the standard used to disinfect all new water lines and any existing lines contaminated during construction. The Contractor shall furnish

all equipment and labor of every nature to disinfect new lines and any line contaminated during construction.

1. Clean Lines: Care shall be taken during construction to keep line free from debris, ground water and dirt.
2. Cross Connections: Cross connections shall not be allowed during testing, flushing, chlorinating, or dechlorinating of the new lines.
3. Flushing: All new lines shall be flushed before disinfecting. The recommended velocity by ANSI/AWWA C 651-92 for flushing is 2 ½ feet per second.
4. Chlorination: All pipe and appurtenances, both existing and newly constructed which have been exposed to contamination by reason of the construction shall be sterilized after testing and flushing of the line has been completed. The line shall be filled, using the continuous feed method, with fresh water containing 50 parts per million of chlorine and allowed to stand for 24 hours. During the test, chlorine residuals shall be checked every 1200 feet on new lines, at the end of each new line, and at the end of all new service lines or connections.
5. De-chlorination: After the new lines have been chlorinated for 24 hours, the chlorinated water shall be flushed from the lines. The discharge of the chlorinated waste shall be chemically treated to remove the residual chlorine. (See appendix of ANSI/AWWA C 651-92 for chemicals and amounts to dissipate the chlorine.) The method for mixing and contact time shall be arranged by the Contractor.
6. Bacteriological Tests: After final flushing and before connection of new mains to existing mains, two consecutive sets of acceptable samples, taken at least 24 hours apart, shall be collected from the new main. At least one set of samples shall be collected from each 1200 feet of the new line, plus one set at the end of the line and one set of samples at the end of each branch line. All samples shall be tested for bacteriological quality in accordance with Standard Methods for the Examination of Water and Wastewater (Latest edition), and shall show the absence of coliform organisms. If the bacteriological tests do not pass, the procedure shall be repeated until they are successful. All samples shall be obtained and tested by the Owner.
7. Connections: After the pipe and appurtenances have been flushed, tested, chlorinated, and have passed the bacteriological test, they may be connected to the existing system.
8. Connections Equal to or Less than One Pipe Length (18 feet): The new pipe, fittings, and valves required for the connections shall be spray disinfected or swabbed with a minimum 1% solution of chlorine just prior to being installed, if the length of connection from the new main to the existing main is equal to or less than 18 feet.
9. Connections Greater Than One Pipe Length: The pipe required for the connection must be set up above ground, chlorinated and bacteriological samples taken as described above if the length of connection is greater than 18 feet. After the bacteriological tests have proven satisfactory, the new pipe can be used in connecting the new main to the existing system. After the samples have been taken, the ends of the new pipe must be closed with water-tight plugs or caps until the connections are made.

670.4 – Water Valves and Accessories

670.4.01 – Scope

The Contractor shall provide and install all valves as shown on the Drawings or specified herein. Valves shall be of same manufacturer throughout where possible. Manufacturer's name and pressure rating of the valve shall be clearly marked on the valve body. Valves shall comply with ANSI/NSF 61 as related to the Safe Drinking Water Additives Program.

670.4.02 – Submittals

1. Submit complete shop drawings of all valves and appurtenances to the Owner for approval. Clearly indicate make, model, location, type, size and pressure ratings. Include operating and maintenance data for all valves.
2. The valve manufacturer shall include as a part of the submittal package, a written affidavit of compliance with ANSI/NSF 61 and also include specific reference to the authorized certifying agency along with the approval identification detail.

670.4.03 – Products and Implementation

A. Resilient Seated Gate Valves

The Contractor shall install resilient seated gate valves as indicated on the Drawings, or specified by the Owner. Resilient seated gate valves size 4-inch through 24-inch shall conform, in general, with AWWA C 509 as amended to date, shall be equipped with O-ring packing and shall be as follows:

1. General Construction: Resilient seated gate valves shall be of the highest quality and finish, and shall open and close freely and easily. With the valve open, an unobstructed waterway shall be afforded, the diameter which shall not be less than the full nominal diameter of the valve. If guides or guide lugs are used, the design shall be such that corrosion in the guide area does not affect sealing. Resilient seats may be applied to the body or gate and shall seat against a corrosion-resistant surface. The surface may be either metallic or non-metallic. Resilient seats shall be bonded or mechanically attached to either the gate or valve body. The mating surface of the resilient seat shall be machined to a smooth, even finish. All stems shall be forged bronze stems.
2. Working Pressure: Water working pressure for valves shall be 250 psi.
3. Operation: All valves shall open left. Valves shall be operated by nut. Operating nuts shall conform to the present standard of the Owner, and shall have an arrow cast on them, indicating the direction for opening the valve.
4. Marking: Each valve shall be plainly marked with the manufacturer's name or particular mark, the year of manufacture, the size of the valve, and designation indicating working pressure, all cast on the bonnet or body.
5. Spacing: In-line valve spacing will not exceed 2,400 linear feet for water mains being used for distribution that are less than or equal to 24-inch in size. For transmission mains, valve spacing will be determined in the design of the project.
6. Vertical Installation: Valves shall be for vertical installation only, with operating nut and N.R.S.
7. Testing: All gate valves shall be tested in accordance with AWWA standards.
8. Jointing: All gate valves shall be furnished with mechanical joints, and necessary bolts, glands, and gaskets except valves in hydrant runs and these shall be flange and mechanical joint.

9. Manufacture: Valves shall be furnished as manufactured by Mueller, Clow, or equal.

B. Butterfly Valves

The Contractor shall install the butterfly valves complete with valve operators and accessories as shown on the Drawings or specified on water transmission mains larger than 24-inch in size. Valves and accessories shall be in accordance with the applicable ASTM and/or ANSI/AWWA Specifications, as amended to date, and shall be manufactured by Henry Pratt or equal.

1. General: The butterfly valves shall be rubber seated and shall fully comply with AWWA Specifications C 504. The seat shall be natural rubber or synthetic rubber compound which shall be mechanically retained or bonded to the valve body or mechanically retained or bonded to the valve body or mechanically retained on the valve disc. All butterfly valves and operators shall be designed for 250 psi operating pressure. Valves shall be bubble tight at rated pressures and shall be satisfactory for applications involving valve operation after long periods of inactivity. Valve discs shall rotate 90° from full-open position to the tight shut position. A certification attesting to operation and leak test shall be furnished with the valves upon shipment. Wafer type valves are not acceptable.
2. Valve Body: The valve body shall be of cast iron conforming to ASTM A 126, Class B, with flanged ends and drilling in accordance with ANSI B 17.1, Class 125 or with manufacturer's standard mechanical joints conforming to ANSI 21.11, with necessary nuts, bolts, glands, and gaskets. Drilled and tapped holes are permitted where required at the body bearing trunnions. The body shall be designed to withstand the internal forces acting directly and the forces resulting from the thrust of the operating mechanism. Trunnion bosses shall be located at diametrically opposite points in the valve body which shall be accurately bored to accept permanently self-lubricated shaft bearing bushings. The trunnion box at the outer trunnion shall include a factory set two-way bronze thrust bearing and a cast iron thrust bearing cover.
3. Valve Shafts: Valve shafts may consist of a one-piece unit or may be the "stubshaft" type. Valve shafts shall be turned, ground, and polished. Valve shafts shall be constructed of 18-8 Type 304 Stainless Steel (AWWA A 296). Shaft diameters shall meet requirements established by AWWA C 504, or service required. Valve shafts shall be securely attached to the valve disc by means of taper pins. Taper pins shall be mechanically secured.
4. Valve Disc: Valve discs 20-inches and smaller shall be constructed of alloy cast iron ASTM A 436, Type 1 (Ni-Resist), ductile iron ASTM A 536, Class 65-45-12 or cast-iron ASTM A 41. Valve discs 24-inches and larger shall be constructed of ductile iron ASTM A 536, Class 65-45-12 or cast-iron ASTM A 48 with 18-8, Type 304 stainless steel seating edges. The valve discs shall be designed to withstand bending and bearing loads resulting from the pressure load and operating forces. The faces to the discs shall be smooth and free of external projections. All retaining or pinning hardware in contact with liquids shall be monel or 316 stainless-steel.
5. Valve Seats: Valve seats shall be natural rubber or Buna "N" rubber. Rubber seats in the valve body shall be retained by 18-8 stainless steel mechanical means, or bonded, without retaining hardware in the flow stream. Rubber seats attached to the disc shall be retained with an 18-8 stainless steel clamp ring and stainless-

steel bolting. Retaining ring cap screws shall pass through the rubber seat and be self-locking. Mating seat surfaces for resilient seats shall be 18-8 stainless steel. Seats should be a full 3600 without interruption. Valve seats shall be designed to permit removal and replacement in the field for valves 30-inches in diameter and larger.

6. Valve Bearings: The valve shall be fitted with sleeve type bearings. Bearings shall be corrosion resistant and self-lubricating. Bearing load shall not exceed 1/5 of the compressive strength of the bearing or shaft material. Bearing material must have coefficient of friction no greater than 0.10 which must be maintained regardless of wear.
7. Testing: Hydrostatic and leakage tests shall be conducted in strict accordance with AWWA C 504, Section 5, except that the leakage test will be performed after the operator has been mounted on the valve.
8. Affidavit of Compliance: The manufacturer shall provide an "Affidavit of Compliance" that the valve furnished complies with the applicable provisions of AWWA C 504.
9. Painting: All surfaces of the valve shall be clean, dry and free from grease before painting. The interior and exterior valve surfaces except for disc, seating and finished portions shall receive two coats of asphalt varnish in accordance with Federal Specification TT-V-51C.
10. Manufacture: Valves shall be furnished as manufactured by Henry Pratt, or equal.
11. Spacing: In-line valve spacing for transmission water mains will be determined for as part of the design for each new transmission main.
12. Valve Operators: Valve operators shall conform to AWWA Specification C 504, as amended to date, and shall be equipped with mechanical stop-limiting devices to prevent over travel of the disc in the open and closed positions.
    a. Manual operators, valve sizes 16" and larger, shall be of the totally enclosed oil bath lubricating gear reducing type. Primary gearing shall consist of a self-locking worm gear constructed of high tensile bronze and a worm constructed of hardened alloy steel with the thread ground and polished. Valve sizes smaller than 16" may have the slotted lever or link-lever design.
    b. The operators shall be designed to hold the valve in any intermediate position between fully opened and fully closed without creeping or fluttering.
    c. Extension stems: Valves shall have extension stems, chain wheels, or floor stands or extension bonnets with handwheels as shown. Extension stems shall extend from the valves to the connections with the operators.
    d. Hand wheels for operators shall be mounted in a vertical plane with horizontal shafts and equipped with locking devices and position indicators.
    e. Operators: Operators for buried valves shall have extension stems, 2-inch square operating nuts and valve boxes.

C. Valve Boxes

Valve boxes shall be two-piece, with covers. The covers shall have the word "WATER" inscribed on the top. The bottom part of the valve box may be 6-inch cast iron pipe. The top part shall be of the sliding type sized to fit over the 6-inch pipe and be 36 inches in length. Valve boxes and covers shall be constructed of cast iron. The 6-inch pipe shall extend not less than 18 inches into the sliding top.

1. Extension stems shall be furnished for all valves so as to bring the 2-inch square AWWA operating nut of such valve within six inches of the top of the valve box. Operating nuts shall have an arrow cast on the top indicating the direction for opening the valve. Provide ground level position indicator. The Contractor shall also provide concrete valve box markers which shall extend a minimum of 12 inches above finished grade.
2. Tools: One socket wrench of proper length for valve operation shall be provided by the Contractor.

D. Tapping Sleeve and Tapping Valve

Tapping sleeves for all taps on Ductile Iron or Cast-Iron Mains shall meet AWWA C223-02 and be split sleeve, mechanical joint type with flanged valve connections furnished by Mueller or equal. Tapping sleeves for taps on existing HDPE Mains shall be as manufactured by JCM Model Number 452 or equal. Tapping gate valves with tapping sleeves shall be furnished in accordance with the specifications for gate valves. Hub connection of valve furnished with tapping sleeve shall be mechanical joint. Tapping Machine: The Contractor shall furnish the valve tapping machine and all other equipment required for installation of the tapping sleeve and valve. Tapping sleeves and valves shall be installed under the supervision of skilled mechanics.

E. Hydrants

The Contractor shall install fire hydrants as indicated on the Drawings, and as specified herein. Hydrants will be installed at minimum distances required by the fire department with jurisdiction over the particular area where the new water infrastructure is being installed. Where possible, hydrants will be used for flushing on 6-inch lines for all dead ends. All fire hydrants shall meet the requirements of AWWA C 502, and the standards of the Owner. Fire hydrants furnished shall be Mueller "Centurion Improved", or approved equal. Any variances from the Mueller "Centurion Improved" shall be approved in writing by the Owner prior to bidding. All fire hydrants shall be installed with Tamper Proof kits.

1. Cover: Hydrants shall be four feet depth of cover over the leader pipe.
2. Extension Stems: However, if the hydrant is located so as to require additional cover the Contractor shall install the required extension sections.
3. Valve Opening: Valve opening shall be not less than four and one-half inches (4- 1/2"). Hydrants shall open left.
4. Hose and Pumper Connection: Hose nozzles shall be two (2) in number and two and one-half inches (2-1/2") in size. One (1) Pumper connection shall be provided.
5. Threads: Threads for hose nozzles shall be "National Standard".
6. Operating Nut: Operating nut shall be square, flat surfaces and be approximately one inch (1") across.
7. Shoe Connection: Shoe connection shall be six inches (6"), furnished with mechanical joint for connection to spigot of mechanical joint hydrant lead.
8. General Construction: Hydrants shall be compressive type, self-coiling, nonfreezing, and provided with a safety flange and coupling.
9. The operating unit shall be totally sealed away from the hydrant barrel and all working parts shall be continuously and automatically lubricated form a large

oil reservoir and packing gland. Drain mechanism shall be simple, positive, and automatic in operation.

10. The safety flange on barrel and safety coupling on valve stem shall operate to prevent damage to barrel and stem in case of a traffic accident. The force of the impact shall break the flange and spread the coupling. The construction of the flange and coupling shall be such as to permit rapid and inexpensive replacement. They shall be located above the ground line. Hydrant shall be so constructed as to permit facing nozzles in any direction at any time without digging up the hydrant or cutting off the water. This shall be accomplished by removing safety flange bolts and revolving the head.
11. All working parts of the hydrant, including the seat ring shall be removable through the top without digging. Seat rings shall be so shaped and arranged as to be readily removable. Seat rings shall be bronze and shall screw into a bronze bushing in the shoe. An O-ring seal between the shoe and seat ring shall provide a watertight non-wearing, permanent seat between shoe and seat ring. This seal shall always come out with main valve removal. Hose connections shall be either threaded and locked in place or breech-locked into the hydrant.

F. Pressure Reducing & Sustaining Valve

The Contractor shall install where shown on the plans or as directed by the Owner. These valves will be installed where high-pressure systems connect to the lower pressure systems, in particular where the additional pressure would cause line pressure to exceed the rated working pressure of the pipeline material.

1. The valves shall be installed in 4'-0" or 5'-0" diameter reinforced concrete manholes as directed by the Owner. The Unit Price bid for this work should include the manhole housing structure, etc.
2. The pressure reducing and sustaining valve shall maintain any desired downstream delivery pressure for which Reducing Pilot Valve is adjusted provided the upstream head does not drop below a determined head. In event upstream head drops to a minimum pressure for which Sustaining Pilot Valve is adjusted, it will cause the main valve to close to sustain the minimum pressure in the higher-pressure system, and not serve the lower pressure system, until the head in the higher-pressure system comes back to or more than normal.
3. The main valve shall operate on the differential piston principle such that the area on the underside of the piston is no less than the pipe area, and the area on the upper surface of the piston is of a greater area than the underside of the piston.
4. The valve piston shall be guided on its outside diameter by long stroke stationary Vee ports which shall be downstream of the seating surface to minimize the consequences of throttling. Throttling shall be done by the valve Vee ports and not the valve seating surfaces.
5. The valve shall be capable of operating in any position and shall incorporate only one flanged cover at the valve top from which all internal parts shall be accessible. There shall be no stems, stem guides, or spokes within the waterway. There shall be no springs to assist the valve operation.
6. The valve body shall be of cast iron ASTM A-126 with flanges conforming to the latest ANSI Standards. The valve shall be extra heavy construction throughout. The valve interior trim shall be bronze B-62 as well as the main valve operation.

7. The valve seals shall be easily renewable while no diaphragm shall be permitted within the main valve body.
8. All controls and piping shall be of non-corrosive construction.
9. A visual valve position indicator shall be provided for observing the valve piston position at any time.
10. The valve shall be completely piped ready for installation. The valve shall be as manufactured by GA Industries, Cla-Val or equal and shall be provided in the diameters as shown on the plans or as requested by the Owner.

G. Air Release & Vacuum Break Valve

Air release and vacuum break valves shall be installed where shown on the Drawings and as specified herein. Air release and vacuum break combination valves shall meet the requirements of AWWA C512-99 as amended.

1. The air release and vacuum break valve shall be of the compact single chamber design with solid cylindrical H.D.P.E. control floats housed in a tubular stainless-steel body with epoxy powder coated cast iron or steel ends secured by means of stainless-steel tie rods.
2. The unit price for air release and vacuum break combination valves shall include concrete vaults as shown in the Drawings and specified herein.
3. The valve shall have an integral 'Anti – Shock' Orifice mechanism which shall operate automatically to limit transient pressure rise or shock induced by closure to twice the working pressure. The intake orifice area shall be equal to the nominal size of the valve i.e., a 6" valve shall have a 6" intake orifice.
4. Large orifice sealing shall be effected by the flat face of the control float seating against a nitrile rubber 'O' ring housed in a dovetail groove circumferentially surrounding the orifice.
5. Discharge of pressurized air shall be controlled by the seating and unseating of a small orifice nozzle on a natural rubber seal affixed into the control float. The nozzle shall have a flat seating land surrounding the orifice so that the damage to the rubber seal is prevented.
6. The valve construction shall be proportioned with regard to material strength characteristics, so that deformation, leaking or damage of any kind does not occur by submission to twice the designed working pressure.
7. The valve design shall incorporate an over pressure safety feature that will fail without an explosive effect, such as is normally the case when highly compressed air is released suddenly. The feature shall consist of easily replaceable components such as gaskets, seals or the like.
8. Connection to the valve inlet shall be facilitated by a screwed NPT male end (1" & 2" only) or a flanged end conforming to ANSI B16.1 Class 125 and Class 250 or ANSI B16.5 Class 300 Standards.
9. Flanged ends shall be supplied with the requisite number of stainless steel or mild steel screwed studs inserted for alignment to the specified standard.
10. The valve shall be as manufactured by Vent-O-Mat, or equal.
11. Valve size shall be 2" for all 6", 8" and 12" water mains and 6" for all 24" and 30" water mains to be installed in this project.

H. Blow Offs

Blow offs for flushing dead ends will be minimum 4-inch on mains 6-inch and larger and set inside meter box at grade. Blow offs to be used only when hydrants infeasible.

670.5 – Measurement

This work is measured for payment either per each, or per linear foot, whichever is shown on the plans.

- **H.D.P.E. Pipe.** All H.D.P.E. piping line items shall be measured in linear feet and shall include costs for piping and installation, locating wire, locating tape, normal joints and gaskets, restrained joints, trench excavation, trench protection, dewatering, bedding material, concrete blocking, asphalt cutting, normal backfill, pressure and leakage testing, pipe sterilization, bacteriological testing, bends and fittings, flushing, and all other incidentals necessary to provide a complete finished installation of the H.D.P.E. Piping system in accordance with the plans and specifications.
- **Ductile Iron Pipe.** All Ductile Iron piping line items shall be measured in linear feet and shall include costs for piping and installation, locating wire, locating tape, normal joints and gaskets, restrained joints, trench excavation, trench protection, dewatering, bedding material, concrete blocking, asphalt cutting, normal backfill, pressure and leakage testing, pipe sterilization, bacteriological testing, bends and fittings, flushing, and all other incidentals necessary to provide a complete finished installation of the Ductile Iron Piping system in accordance with the plans and specifications.
- **Water Valves, Meters, Vaults and Other Accessories.** All Water Valves, Water Meters, Water Vaults and other Accessories shall be measured individually (each) and shall include costs for all materials, valve boxes, meter boxes, manholes, concrete blocking, excavation, dewatering, asphalt or concrete cutting, all associated fittings, installation, normal backfill, testing, and all other incidentals necessary to provide a complete finished installation of the Water Valve and Accessory item in accordance with the plans and specifications.
- **Fire Hydrant Assemblies.** All Fire Hydrant Assemblies shall be measured individually (each) and shall include costs for hydrants, fire hydrant riser, restrained ductile iron lead pipe, polywrap, valve, valve box, tapping sleeves or other fittings associated with connecting to the water main, connection to the water main, excavation, dewatering, asphalt or concrete cutting, bedding material, concrete blocking, normal backfill, installation, testing, and all other incidentals necessary to provide a complete finished installation of the Fire Hydrant Assembly in accordance with the plans and specifications.
- **Utility Conflict Adjustment - Water Main or Water Service Line.** All Water Main and Water Service Line Utility Conflict Adjustment items shall be measured in linear feet and shall include costs for all piping materials, installation, locating wire, locating tape, normal joints and gaskets, restrained joints, trench excavation, trench protection, dewatering, bedding material, concrete blocking, asphalt or concrete cutting, normal backfill, pressure and leakage testing, pipe sterilization, bacteriological testing, bends and fittings, flushing, and all other incidentals necessary to provide a complete finished installation for replacing, raising, lowering, or re-routing the conflicted Water Main or Water Service Line in accordance with the plans and specifications that are necessary to resolve the conflict.
- **Relocate Existing Water Valves, Meter, Vaults and Other Accessories.** All existing Water Valves, Water Vaults, Water Meters and other Accessories to be relocated shall be measured individually (each) and shall include costs for salvaging and re-installing the

existing materials along with costs for any new or additional piping materials, fittings, concrete blocking, excavation, dewatering, asphalt or concrete cutting, installation, normal backfill, testing, tapping connections or other fittings associated with connecting or re-connecting to the water main, and all other incidentals necessary to provide a complete finished installation of the Water Accessory item to the new relocated location. This Work shall also include all costs for removing, capping, plugging, or abandoning the original tie-in connection to the existing water main in accordance with the plans and specifications.

- **Relocate Existing Fire Hydrant Assemblies.** All existing Fire Hydrant Assemblies to be relocated shall be measured individually (each) and shall include costs for salvaging and re-installing the existing materials along with costs for any new or additional materials including fire hydrant risers, restrained ductile iron lead pipe, polywrap, valve, valve box, tapping sleeves or other fittings associated with connecting to the water main, connection to the water main, excavation, dewatering, asphalt or concrete cutting, bedding material, concrete blocking, normal backfill, installation, testing, and all other incidentals necessary to provide a complete finished installation of the Fire Hydrant Assembly to the new relocated location. This Work shall also include all costs for removing, capping, plugging, or abandoning the original tie-in connection to the existing water main in accordance with the plans and specifications.

670.6 – Payment

This Work will be paid for at the Contract Price per Each, or per linear foot, each complete in place and accepted. Payment is full compensation for all things, including incidentals, and direct and indirect costs, to complete the Work.

Payment will be made under:

Item No. 670	Water Main, ___ in	Per linear foot
Item No. 670	Water Service Line, ___ in	Per linear foot
Item No. 670	Utility Conflict Adjustment – Water Main, ___ in	Per linear foot
Item No. 670	Utility Conflict Adjustment – Water Service Line, ___ in	Per linear foot
Item No. 670	Fire Hydrant Assembly, Incl Tapping Sleeve & Valve	Per each
Item No. 670	Tapping Sleeve & Valve Assembly, ___ in X ___ in	Per each
Item No. 670	Gate Valve, ___ in	Per each
Item No. 670	Water Meter, ___ in	Per each
Item No. 670	Relocate Exist Fire Hydrant Assembly, Incl Valve	Per each
Item No. 670	Relocate Exist Water Valve, Incl Box	Per each
Item No. 670	Relocate Exist Water Meter, Incl Box	Per each
Item No. 670	Relocate Exist Water Meter, Incl Bypass and Vault	Per each

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 700 - Grassing

Delete Section 700.5.F of the Georgia D.O.T. Standard Specifications as written and add the following:

700.5 – Payment

F. Sod

1. Sod will be paid by the square yard in accordance with the following schedule of payments. Payment is full compensation for ground preparation, including addition of topsoil, furnishing and installing live sod, and for Plant Establishment.
2. 70 percent of the Contract Price per square yard will be paid at the satisfactory completion of the installation.
3. 30 percent of the Contract Price per square yard will be paid upon satisfactory review of sod that is healthy, weed free and viable at the Final Acceptance of the Project. Any sod that is determined to be unhealthy, not weed free or not viable prior to the Final Acceptance of the Project shall be replaced with new healthy live sod as directed by the Engineer with no additional compensation.

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 703 – Tree Wells, Tree Walls, and Root Protection

Retain Section 703 of the Georgia D.O.T. Standard Specifications as written and add the following:

703.4 – Measurement

E. Tree Wells

When the plans specify a Per Each basis for tree well construction, this work will be measured as an accepted quantity, complete in place for each tree well location.

703.5 – Payment

A. Tree Wells

Tree Wells, completed and accepted, will be paid for at the Contract Unit Price. Payment is full compensation for the work and materials including the required excavation at each tree well location, the full amount of required structural soils associated with each tree well location, the root barrier panels, the washed #57 stone, the tree well frame and grate cover, the planting soil mix, the mulching material, the non-woven filter fabric and all other incidentals necessary to complete the tree well item.

The tree will not be included as a part of the Tree Well item. The tree will be measured separately from the Tree Well item. All other items necessary to install a complete Tree Well system shall be included.

Payment will be made under:

Item No. 703	Tree Well	Per each

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 890 – Seed and Sod

Retain Section 890 of the Georgia D.O.T. Standard Specifications as written and add the following:

890.2.02 – Sod

D. Materials Warranty:

4. Sod installation shall include a 1-year warranty beginning from the date of Final Acceptance of the Project. Any sod that is determined to be unhealthy or not viable prior to the end of the 1-year warranty period shall be replaced with new healthy live sod with no additional compensation.

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 893 – Miscellaneous Planting Materials

Retain Section 893 of the Georgia D.O.T. Standard Specifications as written and add the following:

893.2.03 – Vines, Shrubs, Trees, and Miscellaneous Plants

D. Materials Warranty:

1. All ground cover materials, shrubs, trees and other miscellaneous plant materials shall include a 2-year warranty beginning from the date of Final Acceptance of the Project. Any plant materials that are determined to be unhealthy or not viable prior to the end of the 2-year warranty period shall be replaced with new healthy plant materials with no additional compensation.

CITY OF DALTON

PENTZ AND CUYLER STREET CORRIDOR IMPROVEMENTS PROJECT

SPECIAL PROVISION

Section 900 – Brick Pavers

900.1 – General Description

The work specified in this section consists of furnishing and installing standard brick pavers. This work shall include all labor equipment and the Contractor's warranty used to install standard brick pavers.

The work shall also include final inspection and approval of installation by the Engineer.

900.1.01 – Definitions

General Provisions 101 through 150.

900.1.02 – Related References

A. Standard Specifications

Section 441 – Miscellaneous Concrete
Section 800 – Coarse Aggregate
Section 801 – Fine Aggregate

900.1.03 – Submittals

General Provisions 101 through 150.

A. Product Data

Submit Manufacturer's technical data for each manufactured product including certification that each product complies with specified requirements.

B. Samples

1. Submit set of full-size samples (minimum 5 representative pavers/set) of each paver type, thickness, color or material required.
2. Submit samples indicating the full range of exposed color and texture to be expected in completed Work.
3. Submit cured samples of each type of grout and mortar (if applicable), showing range of color.

4. Submit the set of samples prior to mock-up panels construction.

900.2 – Materials

A. Paver Requirements

All paving brick furnished shall be new and meet the requirements in the following:

- Manufacturers: Pavestone
- Product Name: 4x8 Holland 60MM
- Color/Type: Submit Samples to the Owner for final selection of style and color
- Pattern: See Hardscape Plan Sheets for patterns
- Size: Sidewalk Brick Pavers – 2.36" H x 3.94" W x 7.87" L (Nominal: 4" x 8")
- Water: Provide water that is clean, potable, and free of materials detrimental to strength or bond.

B. Contractor and Material Warranty

- Provide Manufacturer's warranties and guarantees for all paving bricks to be free of defects, if applicable.
- Contractor shall certify to Engineer in writing that the installation is in accordance with the requirements.

900.3 – Construction Requirements

A. Quality Assurance

1. Provide an experienced installer who has successfully installed brick pavers similar in material, and design, with at least 3 years of experience.
2. Do not change source or brands for masonry units, setting materials, or mortar during progress of work.
3. Codes and Standards:
    - Applicable Section of Georgia Department of Transportation (GDOT) Standard Specifications Construction of Transportation Systems, 2021 Editions.
    - ASTM C902 – Standard Specification for Pedestrian and Light Traffic Paving Brick.
    - ASTM C1272 – Standard Specification for Heavy Vehicular Paving Brick.
    - ASTM C67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile (For Freeze/Thaw Requirements)
    - Brick Institute of America (BIA) applicable standards.
4. Job Mock-up:
    - Prior to installation of paving, provide a minimum 5' x 5' sample panel at site of each pattern and material called for as brick paving.
    - Provide jointing, as specified.
    - Obtain Engineer's acceptance of visual qualities of mock-up panels before start of finished paving.

- Replace unsatisfactory mock-up work, as directed, until acceptable to Engineer.
- Retain sample panels during construction as a standard for judging completed paving work.
- Do not alter, move, or destroy mock-up panels until work is completed. Unless otherwise directed, acceptable mock-up panel may be incorporated into the finished work.

B. Preparations

Extent of brick paving is shown on drawing and includes:

1. Clay Brick Pavers
   - Brick paving shall be manufactured of material of the same color as brick pavers throughout the project.
   - Ensure surface is clean and remove dirt, dust, debris, and loose particles.
   - Do not use brick pavers with chips, cracks, voids, discolorations, bows, misshapes, and other defects that might be visible or cause staining.
   - Cut brick pavers with a table mounted, motor-driven, diamond blade wet masonry saw equipment to provide clean, sharp, un-chipped edges. Use full units where possible. Hammer cutting is not acceptable.
   - Lay brick pavers only over well compacted subgrade or concrete base of the acceptable dimensions and elevations.
   - Test compaction and depth before commencing brick paving, and provide specified job mock-ups. Do not proceed without acceptance of mock-ups for visual quality.
   - Set brick pavers in the approved pattern and match joint width of adjoining brick pavers. Lay pavers away from the existing laying face or edge restraint in such a manner as to ensure that the pattern remains square.
2. Mortar Bed for Clay Brick Pavers

   A mortar bed of the required depth shall be placed on the concrete base, not sooner than 10 days after the base slab has been poured. The mortar bed shall be brought to exact elevations, and the brick shall be laid in fresh mortar.
3. Mortar

   All mortar shall be mixed by hand or preferably in a mechanical mixer and in qualities sufficient for the proper progress of the work. No re-tempered or mortar that has started its initial set shall be used.

C. Observing Weather Limitations

- No masonry shall be laid when the temperature is below 32° F on a rising thermometer or below 40° F on a falling thermometer, unless adequate precaution against freezing is provided. No frozen materials shall be used in the construction of masonry. All unfinished work shall be covered with waterproof paper or canvas.
- In warm weather, all brick shall be thoroughly wetted as necessary to reduce the rate of absorption of water at the time of laying, if applicable.

D. Delivery, Storage, and Handling

- Deliver brick pavers to the site in steel banded, plastic banded, or plastic wrapped cubes or on pallets capable of transfer by fork lift or clamp lift. Unload pavers at job site in such a manner that no damage occurs to the product.
- The Contractor shall protect pavers and aggregate during storage and construction against wetting by rain, snow, or groundwater and contamination from other types of materials.
- All masonry materials shall be shipped and stored in such a manner as to prevent damage or intrusion of foreign matter.
- Cement, mortar mix, and other packaged materials shall be stored in tight sheds with elevated floors.
- Brick pavers will be stored in the open or stacked near the mortar boards, and sheltered with a cover that permits circulation of air and shall be protected against excessive wetting when freezing may occur, except with the permission from the Engineer.

E. Construction

1. Brick Paving Installation
    - Installer shall review installation procedure and coordination with other work, with the Contractor and other subcontractors, whose work will be affected.
    - Coordinate with other work to make provisions for the installation of required adjacent work to avoid cutting and patching.
    - All masonry shall be laid to a line, all work plumb and true and all contact joints, both horizontal and vertical, shall be completely filled with mortar as the work progresses. Masonry work shall be supervised at all times by the responsible foreman.
    - Joints in all brick shall be 3/8 inch mortared joint. Joints shall be flushed with the brick.
    - All holes and cracks in exposed joints shall be filled with additional fresh mortar and jointed. If mortar has hardened, the defect shall be chiseled out and refilled with fresh mortar and retooled.
    - The bricks shall be carefully laid with the best face up, in the pattern indicated, and shall be laid straight and at right angles to the edging line, except at intersections, where they shall be laid at such angles as are shown on the plans or as directed by the Engineer. Joints shall be close and at right angles to the tops and sides. No half bricks or bats shall be used except at the ends of courses where needed and no bats shall be less than 3 inches in length. All joints shall be broken with a lap of not less than 3 inches.
    - No portion of a brick less than 3 inches in length shall be used for batting such closures, and the amount of space to be batted in shall not exceed a whole brick. In no case shall brick be cut longitudinally to make a closure on a curve.

- All brick shall be clean when placed in the pavement. Bricks which in the opinion of the Engineer are not satisfactorily clean shall be washed before being placed.
- In no case shall the grout bed in front of the pavement be disturbed during the laying of the bricks. Bricks shall be laid firmly in the grout bed allowing no mortar to enter the spaces between bricks so that all bricks lie with side faces flush.
- In laying brick pavement, the Contractor shall keep the bricks culled, and shall make the necessary changes and replacement so that the work shall be ready for rolling while the grout bed is still wet.
- After all objectionable bricks have been removed from the pavement and all replacements have been made, and while the setting mortar is still soft, the pavement shall be swept clean and thoroughly rolled with a self-propelled roller. This rolling shall start along the low edges and progress toward the other side until the surface is even. After final rolling the pavement shall be tested with a 10-foot straightedge laid parallel with the curb, and any depression exceeding 1/8 inch shall be corrected and brought to the proper grade. All bricks disturbed in making replacements or correcting depressions shall be settles into place by ramming or by rerolling. Portions of the pavement inaccessible to roller shall be tamped to grade by the use of hand tamper applied upon a 2-inch board.

2. Cleaning and Final Protection
   - Clean all stains or mortar off pavers and replace cracked or chipped pavers prior to final inspection.
   - After the bricks have laid, any soft, broken, or misshapen bricks shall be removed by the Contractor. Any brick slightly spalled or kiln-marked shall be turned over and, should the opposite face be acceptable, it may be replaced in the pavement; otherwise, it must be removed and discarded.
   - Provide final protection and maintain conditions in an acceptable manner, which ensures brick paving without damage, deteriorations during constructions and until time of completion.
   - Brick surfaces shall be thoroughly cleaned using agents and methods approved by the brick manufacturer. All grout spatter, stains, and other objectionable blemishes shall be removed as a condition of final acceptance.

900.3.02 – Additional Warranty

In addition to one-year material and workmanship guarantee, provide two-year warranty against settlement of all masonry work of this Section:

- During the period of the warranty, maintain brick paving even, at correct elevations and flush with adjacent pavement surface.
- Make repairs within two weeks of notice from Owner or Engineer for pavers that are 1/8" or more below or above adjacent pavers or surface.
- Should the Contractor fail to make repairs within two weeks of notice. Owner may undertake repairs at Contractor's expense.

900.4 – Measurement

The work is measured in square foot and paid for by the actual number of square foot measured. The square foot pay item will include the labor, material, mortar bed, mortar, equipment, and repair warranty. The concrete base layer shall be measured separately as concrete sidewalk.

900.5 – Payment

This work will be paid for at the Contract Unit Price per square foot. Such payment will be full compensation for furnishing all labor and materials necessary to complete the Work including materials, mortar base, mortar bed, mortar, equipment, handling, placing, repair warranty, and any incidentals. The concrete base layer shall be paid separately as concrete sidewalk.

Payment will be made under:

Item No. 900	Brick Pavers	Per Square Foot
Item No. 900	Brick Pavers (Reset)	Per Square Foot

EXHIBIT A

PLANS PREPARED BY GOODWYN MILLS CAWOOD

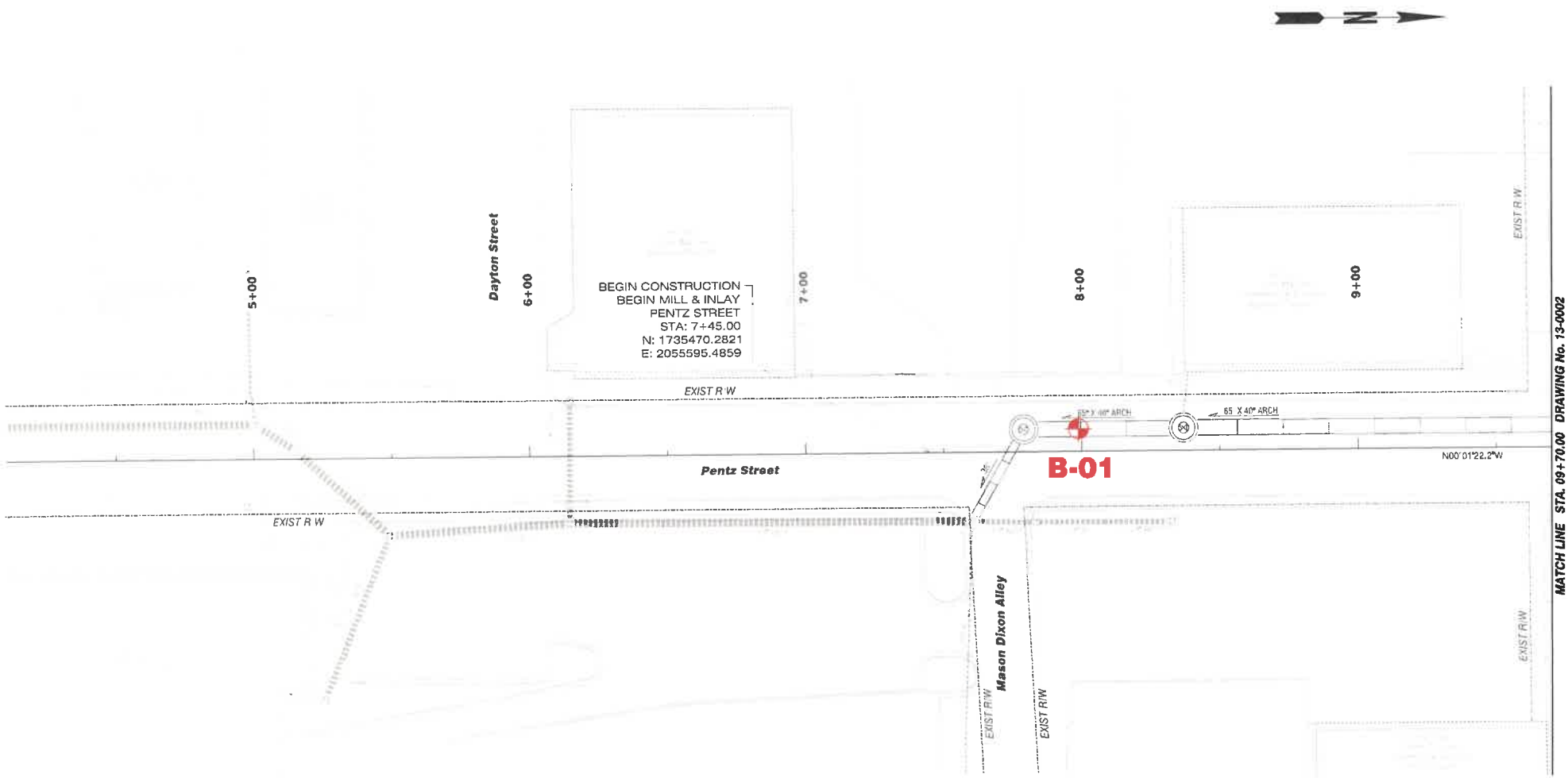
THE PLANS FOR THIS PROJECT CAN BE VIEWED
ELECTRONICALLY VIA THE CITY OF DALTON'S WEBPAGE

https://www.daltonga.gov/rfps

EXHIBIT B

SOIL BORINGS AND PAVEMENT CORES

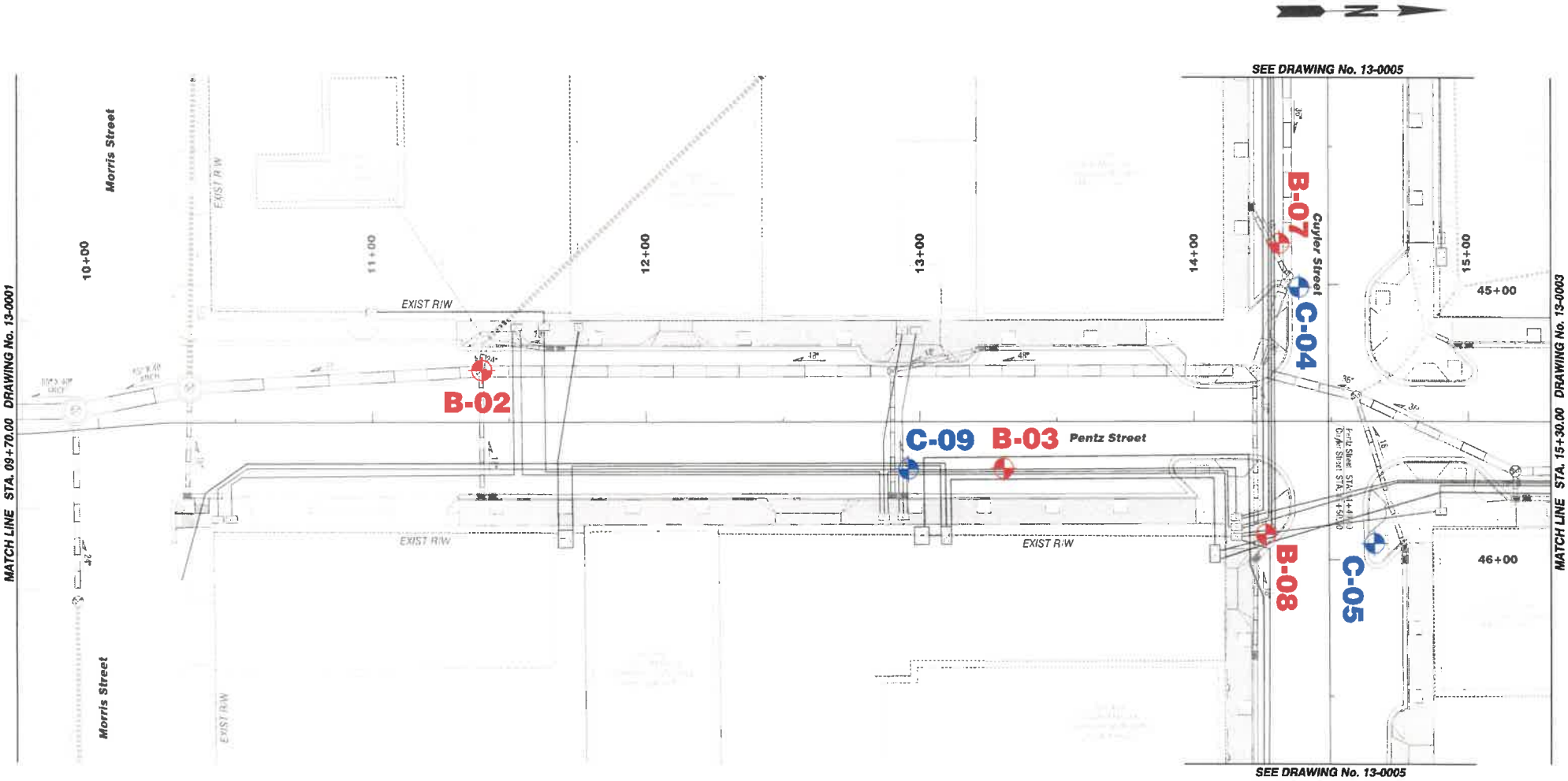
GMC



Pavement Core Location

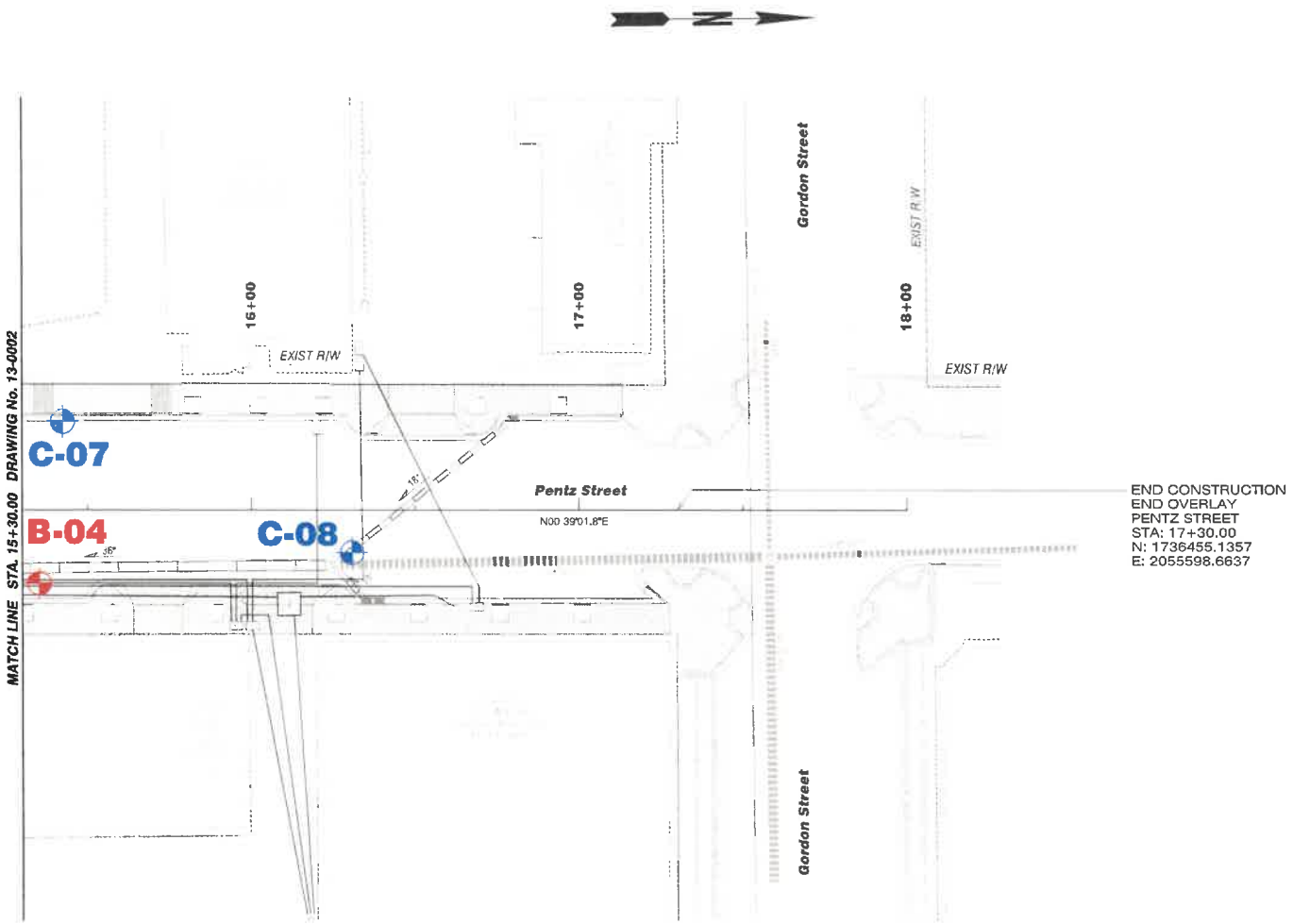
Soil Boring Location

GMC



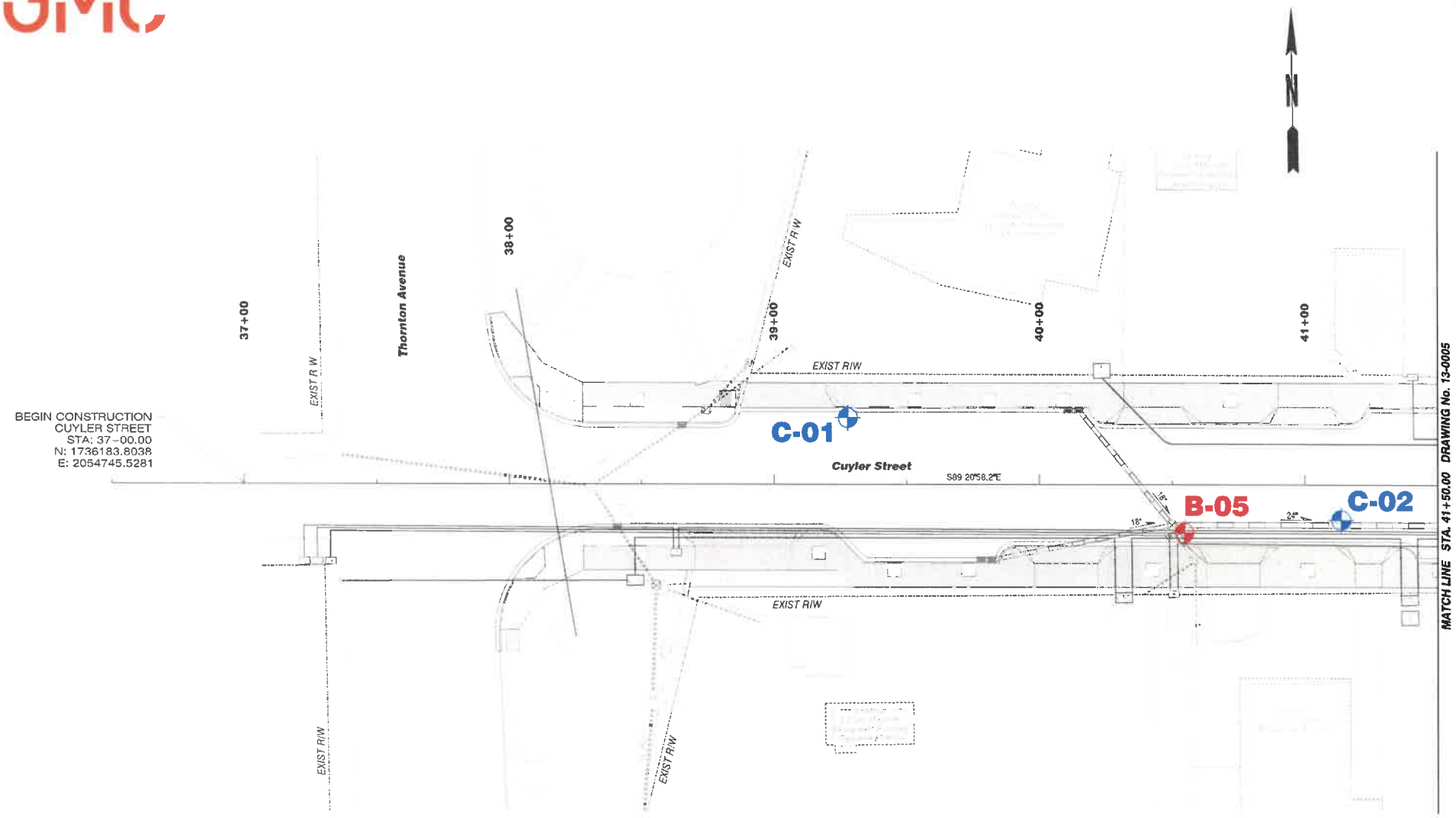
Pavement Core
Soil Boring

GMC



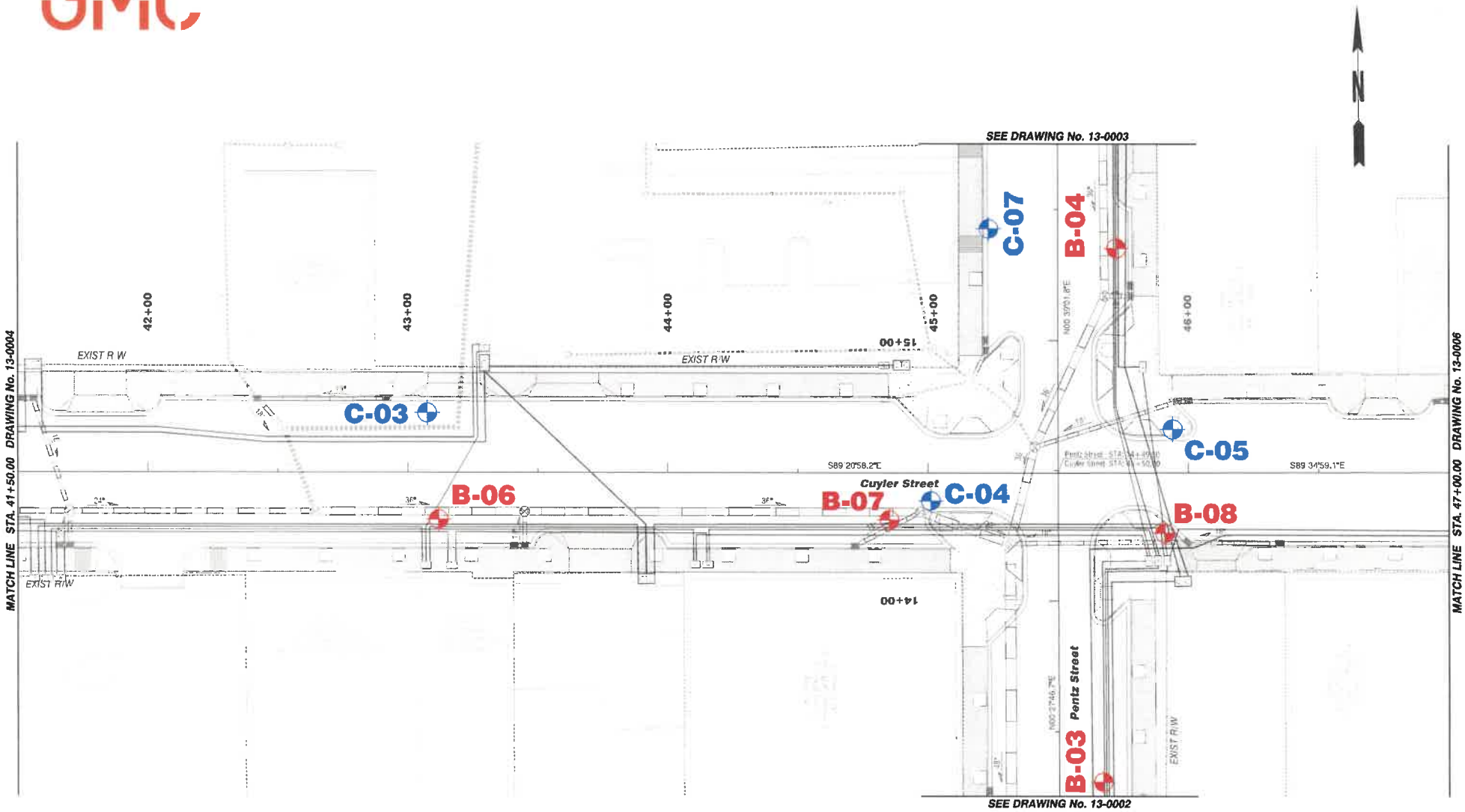
Pavement Core
Soil Boring

GMC



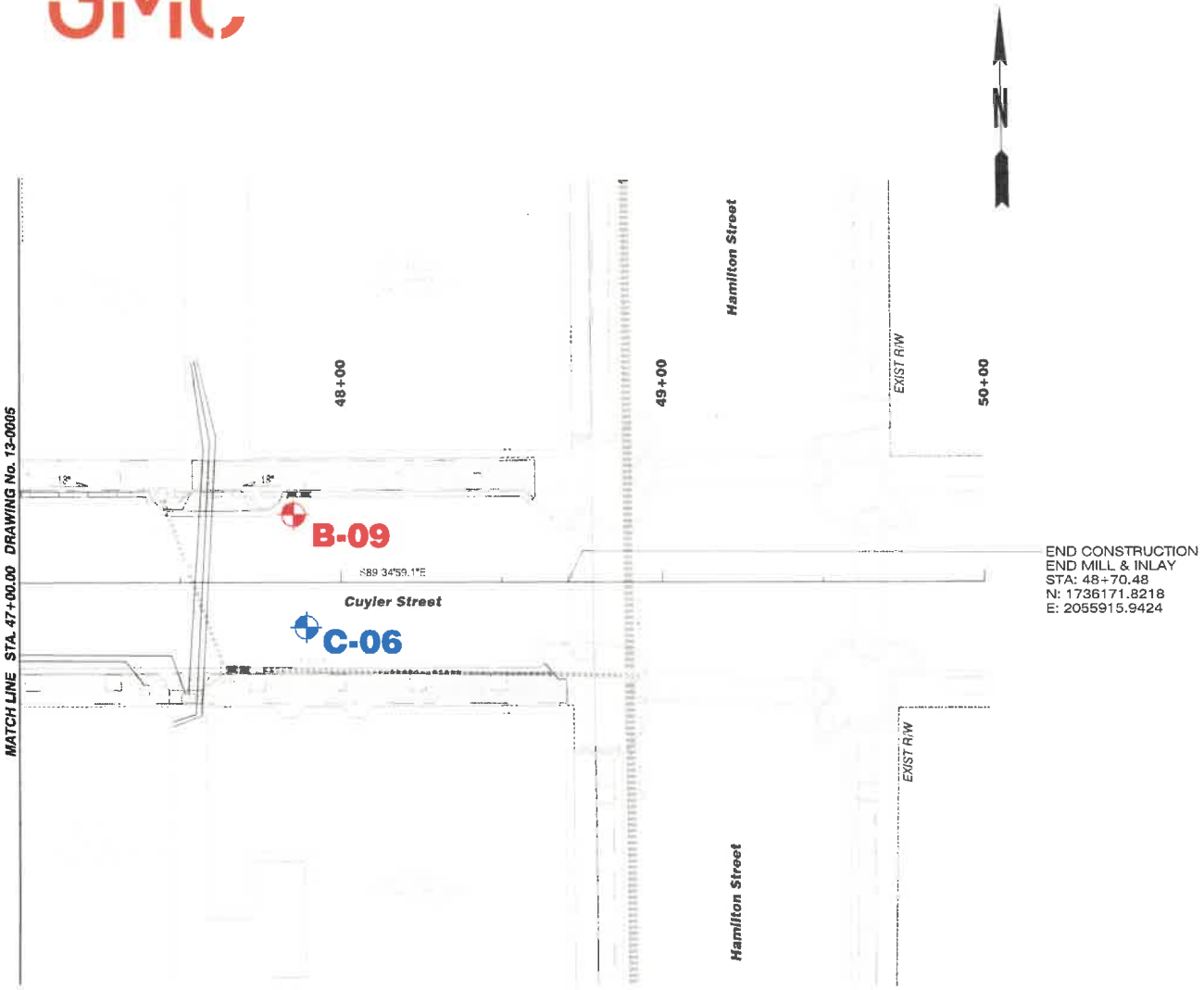
Pavement Core
Soil Boring

GMC



Pavement Core
Soil Boring

GMC



Pavement Core
Soil Boring

BORING NUMBER B-01

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 743.90 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 8"										
			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
740	5												
			PARTIALLY WEATHERED ROCK (PWR) tan-brown, stiff -- No Sample										
735			Auger refusal was encountered at 9.0 feet.										
	10												
730													
	15												
725													
	20												

GMC

BORING NUMBER B-02

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 751.15 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 9"										
750			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
	5												
745													
			Auger refusal was encountered at 7.0 feet.										
	10												
740													
	15												
735													
	20												

BORING NUMBER B-03

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 757.00 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 9.25"										
755			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
	5												
750													
	10		Boring terminated at 10.0 feet.										
745													
	15												
740													
	20												

BORING NUMBER B-04

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 761.75 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 8.5"										
760			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
	5												
755													
			Auger refusal was encountered at 9.0 feet.										
	10												
750													
	15												
745													
	20												

BORING NUMBER B-05

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 765.35 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
765	0		Asphalt, 7.5"										
			Aggregate Base, 10"										
			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
			PARTIALLY WEATHERED ROCK (PWR) tan-brown, stiff -- No Sample										
760	5												
			Auger refusal was encountered at 6.0 feet.										
755	10												
750	15												
	20												

GMC

BORING NUMBER B-06

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 760.65 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
760	0		Asphalt, 8.5"										
			Aggregate Base, 10"										
			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
755	5												
	10		Boring terminated at 10.0 feet.										
750													
745	15												
	20												

BORING NUMBER B-07

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 759.90 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 10"										
			Aggregate Base, 10.5"										
			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
			Auger refusal was encountered at 4.0 feet.										
755	5												
750	10												
745	15												
740	20												

BORING NUMBER B-08

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 759.75 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 7"										
			Concrete, 5"										
			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
755	5												
750	10		Boring terminated at 10.0 feet.										
745	15												
740	20												

BORING NUMBER B-09

GMC

CLIENT City of Dalton, Georgia
PROJECT NAME Streetscape Improvements on Pentz Street & Cuyler Street
PROJECT NUMBER TATL220003
PROJECT LOCATION Dalton, Georgia
DATE STARTED 04/05/23 **COMPLETED** 04/06/23
GROUND ELEVATION 761.80 ft **HOLE SIZE** 5 inch
DRILLING CONTRACTOR Nicholson Exploration Services, LLC
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY J. Fennell **CHECKED BY** J. Fennell
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
	0		Asphalt, 6.5"										
			Concrete, 5.5"										
760			SILTY CLAYEY SAND (SC-SM) tan-brown, firm -- No Sample										
	5												
755													
	10		Boring terminated at 10.0 feet.										
750													
	15												
745													
	20												

GMC

Pavement Core Summary					
Core No.	**Total Thickness (in)**	**Topping Layer Thickness (in)**	**Binder Layer Thickness (in)**	**Concrete Thickness (in)**	**Base Thickness (in)**
C-01	**3.50**	2.00	1.50	0.0	6.50
C-02	**7.50**	2.25	5.25	0.0	10.00
C-03	**5.25**	2.00	3.25	0.0	7.25
C-04	**10.00**	1.75	8.25	0.0	10.50
C-05	**11.25**	1.75	5.00	4.5	0.00
C-06	**9.50**	1.25	8.25	0.0	0.00
C-07	**9.00**	2.50	6.50	0.0	0.00
C-08	**8.00**	2.00	6.00	0.0	0.00
C-09	**9.25**	2.00	7.25	0.0	0.00

EXHIBIT C

American Rescue Plan Act Improving Neighborhood Outcomes in Disproportionately Impacted Communities Grant Program

Terms and Conditions Can be Found on the City's Website Link Provided Below:

https://www.daltonga.gov/rfps