Project Manual

for

City of Dacula

McMillan Road Stormwater Improvements Project

Work to be Performed

for

City of Dacula

G e o r g i a

June 24th, 2022

Prepared By:

BOWMAN

4174 Silver Peak Parkway
Suwanee, Georgia 30024

McMillan Road Stormwater Improvements Project
for
City of Dacula, Georgia

ADVERTISEMENT FOR BIDS

Sealed bids for the "McMillan Road Stormwater Improvements Project" will be received by the City of Dacula at Dacula City Hall – 442 Harbins Road, Dacula, Ga. 30019, until **3:00 PM** local time on **Thursday, August 18, 2022.** Any bid received after said time and date will not be accepted by the City.

The Contract Documents, consisting of Advertisement for Bids, Information for Bidders, Bid Proposal Form, Form of Agreement, Drawings, Specifications, Bid forms, Bid Bond, Performance Bond, Payment Bond, Bidders Qualifications Forms, and other Contract Documents may be examined at: **Bowman Consulting Group, LLC (Bowman)**, 4174 Silver Peak Parkway, Suwanee, Georgia 30024. Contact: Kevin D. Whigham, P.E. (770) 932-6550; email: kwhigham@bowman.com.

All Bidders must be registered with Bowman to assure that Bidders receive all addenda and/or clarifications to the Bid Documents in a timely manner, it is highly recommended that all bidders obtain at least one complete set of Bid Documents directly from Bowman. Entities that do not obtain Bid Documents from this source will not receive addenda and/or clarifications. Bidders relying on plan rooms or other services to obtain Bid Documents, rather than obtaining them directly from the source are doing so at their own risk. Copies of the Documents and specifications will be provided in Electronic Format and can be obtained by contacting Bowman to be placed on the Bidder's List. Electronic Copies will be made available on Bowman FTP website or sent by email at no charge. If hard copies are required, there is a non-refundable cost for each set of plans and specifications of $150.00 (cash or check).

A. BASE BID –

The Work to be completed for this Project consists of furnishing all labor, materials, earthwork, construction operations, details, supervision and coordination of all trades, utility suppliers, governmental inspections and approvals to complete the construction, installation, and coordination for the City of Dacula "McMillan Road Stormwater Improvements Project" as follows:

The City is having issues with the existing storm pipe and structures holding stormwater and ponding out into McMillan Road near proposed JB 1-H. In order to alleviate this issue, the Scope of Work will include demolishing the existing storm sewer system from proposed JB 1-I downstream to the creek through the City's adjacent property. An entire new Storm Sewer Outfall System will be installed in its place. The existing pipes have been TV inspected with varying results. The storm line upstream of JB 1-H is holding stormwater up to the existing grate inlet at the northwest corner of Winder Hwy. and McMillan Road. The Contractor shall excavate and replace the existing pipe crossing underneath McMillan Road and replace with new RCP culvert and junction box adjacent to building or where buried junction box is located. Contractor will then investigate and cleanout the existing

36" RCP Box Culvert which appears to cross underneath the corner of the existing building. The existing grate inlet at northeast corner of Winder Hwy. and McMillan Road will need to be reconstructed and top made accessible with steps for access and clean out of downstream pipe. Contractor will also cleanout existing 24" RCP storm sewer line extending north from proposed JB 1-H underneath Winder Hwy. and Railroad to upstream headwall adjacent to Hebron Church Road.

The Demolition scope also includes removing all asphalt pavement along McMillan Road from right-of-way of Winder Hwy. south to limits of removal as illustrated on the Drawings. The remainder of McMillan Road from the removal limits to the 4-Way Stop at Church Street will be milled and repaved. A deep patch milling detail is included if any pavement areas need additional repair. The City's adjacent lot which is currently fenced can be used as a laydown area for construction. At end of construction, Contractor shall remove all existing pavement within the fenced limits and fine grade area to drain to new storm sewer weir inlets and stream buffer. Fence will need to be disassembled and stored until construction is complete and then reinstalled by the Contractor.

A new storm sewer outfall line and structures will be installed along McMillan Road and extend west down along the outside of the stream buffer until it can be discharged into the stream buffer as illustrated on the Drawings. A new junction box (JB) will be installed on the east side of McMillan Road adjacent to the existing building where the existing 36" RCP Box Culvert ties into the 30" RCP culvert running underneath McMillan Road. This new JB will be installed where the Contractor uncovers the buried existing junction box or as illustrated on the Drawings to provide access to cleaning out the existing 36" RCP Box Culvert.

A new 36" RCP culvert will be installed underneath McMillan Road from JB 1-I to JB 1-H; then a 48" HDPE storm line and structures will be installed behind the existing utilities running along the west side of McMillan Road. McMillan Road will be regraded from Winder Hwy. right-of-way limits south to a new low which is created farther away from Winder Hwy. Curb & Gutter will be installed along the west side of newly regraded McMillan Road. A new Double Wing Catch Basin (DWCB 1-F.1) will be installed to drain stormwater from this low point with a 24" HDPE pipe installed to drain stormwater to outfall storm sewer at JB 1-F.

The remaining 48" HDPE storm outfall sewer will extend south to the stream buffer and turn west at JB 1-E and then continuing draining till it discharges into stream buffer at Headwall (HW 1-A). Contractor shall minimize disturbance within stream buffer and limit grading and disturbance operations to pipe, headwall, riprap installation only.

In addition, McMillan Road at limits of regrading near existing low point at stream crossing shall be milled and repaved as illustrated on the Drawings up to the 4-Way Stop at Church Street. Contractor shall document all existing striping and replace in-kind including but not limited to "Railroad Ahead" striping, stop bars, double centerline striping, and parking lot lines. Install eight (8) new concrete curb stop blocks at parking spaces to prevent

damage to building. Existing DWCB's and storm pipe at low point near stream crossing shall be cleaned out and paved inverts installed to drain. Existing HDPE pipe and French Drain draining into existing DWCB on west side of McMillan Road near Station 3+10 needs to be cleaned out and/or replaced to drain low point area behind DWCB and existing house.

McMillan Road shall be repaved with Heavy Duty Pavement Section. Parking area adjacent to McMillan Road and Building shall be repaved with Standard Duty Pavement Section. Milled areas shall be milled 2.5" unless a deep patch section is needed (to be approved by Owner prior to additional milling and paving) and then repaved with tack coat, 1" of 'D' Mix Asphalt Binder Course, and 1-1/2" Type 1 - 'F' Mix (9.5 mm) Asphalt Surface Course. All new pavement repair shall have smooth transition with adjacent existing asphalt.

Erosion, Sedimentation, and Pollution Control Measures are part of the Contractor's Scope of Work. BMP's shall be installed on all existing and new storm inlets as well as Double Row Type 'C' Silt Fence along Stream Buffer. See Drawings for all BMP's to be installed.

All disturbed areas will be permanently grassed with Erosion Control Matting and permanent Bermuda Seed. Any disturbance adjacent to or within a homeowner's front yard shall be permanently stabilized with Bermuda Sod. Removal of all vegetation and trees within limits of work shall be included in Contractor's overall Bid unless otherwise illustrated on the drawings. Traffic access to streets and private driveways shall remain open at all times unless approved by the Owner. If road closure is granted, then Contractor shall provide Traffic Control Plan and all detour signage required in his overall Bid.

All earthwork quantities for grading, pipe bedding, and backfill whether haul-in and/or haul-off are the responsibility of the Contractor to include in their Lump Sum Bid in order to complete the Scope of Work at no additional cost to the Owner. All quantities and measurements are approximate. Contractor shall visit the Site and determine his own quantities for bidding this project.

Contractor shall include in their Base Bid all costs for adjusting and relocating any water and gas services lines, meters, or valves impacted by new storm line installation in order to complete the scope of work as described by the Contract Documents and Drawings. Contractor shall coordinate with utility companies and relocate utilities as required to install new improvements. Contractor must be qualified with Gwinnett County in order to perform water line installation, relocation and repairs.

One lane of traffic and access to residential/commercial driveways must be maintained at all times unless road closure is granted by the City as stated above. Traffic Safety devices such as signage, barricades, etc., and the protection of the public-at-large, and the Contractor's personnel is part of this contract and is the Contractor's sole responsibility. The Contractor will have *Ninety (90) consecutive calendar days* from the "Notice to Proceed" to finish and complete the project.

All materials and appurtenances required to complete this Scope of Work is the responsibility of the Contractor and shall be provided in his overall Bid. The Contractor must be an approved Contractor with the City of Dacula and/or Gwinnett County. A complete list of materials should be included in the Contractor's overall Bid.

Bidder will prepare Asphalt prices for bid based on the current GDOT Asphalt Cement Price Index listed at the time of bid opening. The successful Contractor's pay request will list the current GDOT Asphalt Cement Price Index at the time of purchase. The difference in price between the GDOT Asphalt Cement Price Index at bid and at purchase will either be a change order to the Contractor or a Credit to the Owner. The GDOT Asphalt Cement Price Index is in accordance with Special Provision 109 (dated 2008), Section 400.5.01 Adjustments, the asphalt price index for the month of the Letting posted on the Georgia Department of Transportation Website.

Additional items within Scope of Work

A. A site visit must be made by Contractor and subcontractors to determine the exact nature and scope of the work to be done. Contractor is responsible for hauling off all demolition materials (existing pipe, concrete, asphalt, etc.) to a State approved disposal facility at no additional cost to the Owner. Contractor shall tie in and feather new asphalt into existing asphalt so that there is a smooth transition.

B. If any unforeseen sub-grade conditions arise the Contractor shall immediately notify the Owner and/or Owner's representative before proceeding with any work to determine the course of action. The Contractor shall have a Geotechnical Engineer (who will be selected by the Contractor and approved and paid for by the Owner) qualify and quantify the areas and determine the method of sub-grade repair in coordination with the Owner and/or Owner's Representative on a case-by-case basis.

C. The limits of work for this project are limited to that area within the right-of-way of City of Dacula and City owned property in order to perform the paving and storm sewer drainage pipe and structure installation as described by scope of work in the Contract Documents.

D. Contractor is responsible to locate horizontally and vertically all existing utilities within limits of disturbance and protect throughout duration of project. Utilities which are present include water, gas, electrical, CATV, AT&T, etc., but may not be limited to these within the limits of disturbance. All existing utilities shall be located and protected from damage by the Contractor.

E. Contractor shall have a Site Superintendent on-site at all times while work is in progress to monitor, direct, and control construction activities. Superintendent

in-charge shall be available to City, Engineer, and adjacent property owners to answer or direct questions concerning the project.

Owner reserves the right to waive any informalities and any technicalities, and to reject any or all bids. There will be a Pre-Bid Conference at Dacula City Hall, 442 Harbins Road, Dacula, GA 30019 at **3:00 PM** local time on **Tuesday, August 2, 2022**. All bidders are strongly encouraged to attend this conference. Owner reserves the right to waive any informalities and any technicalities, and to reject any or all bids. All questions concerning this project shall be submitted in writing by email to Bowman (Owner's Representative – Kevin D. Whigham, P.E.) 4174 Silver Peak Parkway, Suwanee, Georgia 30024, phone number 770-932-6550; email kwhigham@bowman.com no later than **Thursday, August 11, 2022 by 5:00 PM.**

By: Honorable Trey King, Mayor
City of Dacula, Georgia

SECTION 00 100

INSTRUCTIONS TO BIDDERS

Each Bidder by making his bid represents that he has read and understands the bidding documents and has visited the site and familiarized himself with the local conditions under which the work is to be performed.

All bids must be prepared on the forms provided by the Owner's Representative and submitted in accordance with the Instructions to Bidders. A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids set forth in the advertisement or invitation to bid, or prior to any extension thereof issued to the bidders.

Work under the contract consists of furnishing all labor and materials required to complete the project entitled:

"McMillan Road Stormwater Improvements Project".

In accordance with Contract Documents prepared by: The Bowman Consulting Group, LTD. (Bowman), 4174 Silver Peak Parkway, Suwanee, Georgia 30024. Phone: (770) 932-6550, Dated: June 24th, 2022.

The following provisions shall be applicable to all Bidders:

A. During grading and excavation phases, if required, should the following conditions be encountered: mass rock, trench rock, trench earth excavation, earth excavation, earth fill and unsuitable soils, Contractor shall immediately notify the Owner's Representative who may observe and will determine the appropriate action necessary for the work to proceed. If, in the opinion of the Owner's Representative, work in addition to the original contract requirements is required, that portion pertaining to any of the foregoing conditions will be performed on a time and material basis and the contract shall be equitably adjusted by change order in accordance with the guidelines set forth in Section 00 801 of these Contract Documents. Successful Contractor shall submit unit prices as required herein that are used to formulate his bid. Unit and/or lump sum prices shall include cost of material, sales tax, delivery, labor, labor burden, supervision, taxes, insurance and all other costs including profit and overhead. Owner's Representative and Owner reserve the right to accept or reject these prices or request the work to be performed on a time and material basis with complete daily breakdowns and logs submitted by General Contractor.

   Contractor may draw his own conclusions and no responsibility is assumed by the Owner's Representative or Owner for subsurface conditions or quality of same. No claims for extra compensation or for additional contract time will be allowed due to subsurface conditions.

B. Time is of the essence. Construction of the "McMillan Road Stormwater Improvements Project" must be substantially complete within Ninety (90) consecutive days from date of Notice to Proceed.

C. A bid bond in the amount of 5% of the base bid shall accompany the bid. The Attorney-in-Fact who signs the bid bond must file with the bid bond a certified copy of his Power of Attorney to sign such bond.

D. Neither Contractor, nor his material suppliers, nor his Subcontractors shall install or otherwise incorporate any materials containing asbestos, PCB or other hazardous materials within the boundaries of the Project. No soil found on Site or transported to the site from remote locations which is contaminated with material containing asbestos, PCB, radon, gasoline, fuel oil, diesel fuel or other similar fossil fuels shall be used for fill, backfill or landscape topsoil.

E. Each bidder represents that his bid is based upon the work described in the Bid Documents, Drawings, and Specifications.

F. When references are made in the specifications to trade names, or to the names of manufacturers, such references are made solely to designate and identify the quality of the equipment or material to be furnished and are not intended to restrict competitive bidding. In case the Contractor wishes to use material and equipment other than those specified, PRIOR WRITTEN REVIEW by Owner's Representative must be obtained.

G. If it is desired to use equipment or materials of different manufacturer or trade names from those specified, application for review of such equipment or materials must reach the hands of the Owner's Representative at least ten (10) days prior to the date set for the opening of bids. Application for review must be accompanied by supporting data clearly proving equality of the proposed substitute to that specified. To be acceptable, a substitute must be equal, or exceed, all requirements of the base specifications, including space limitations. A comparative data schedule shall accompany the submittal. Any changes in the work which might be required to accommodate the proposed substitute shall be clearly shown and described. Should the proposed substitute be accepted, any such changes required in other work due to the use of the substitute shall be coordinated and accomplished by Contractor as part of the Contract at no additional cost to Owner.

H. No substitutes allowed.

I. No consideration can be given to requests for review received later than ten (10) days prior to the day set for the opening of bids.

J. METHOD OF AWARD

1. A lump sum, fixed price bid proposal is requested with specific Schedule of Values to be provided by the Contractor by which they based their bid upon as part of the Contract

Documents and as outlined in the Bid Proposal Form, Section 00 300. Award will be made to the lowest responsive, responsible, qualified bidder.

2. The lump sum bid for the construction of the work as outlined in the Contract Documents and set forth in detail in the proposal, includes the furnishing of all equipment, materials, labor, insurance, overhead and profit for the completion of the work as per the Contract Documents.

K. RIGHT TO REJECT BIDS

Owner reserves the right to reject any or all bids and to waive informalities. It is distinctly understood, and all bids are made subject to this Agreement, that Owner reserves the right to decide which bid he deems lowest and best. In arriving at this decision, due consideration will be given to the reputation of the bidder, his financial responsibility, work of this type successfully completed, and the character of materials and equipment offered. No bids received after the time set for opening proposals will be considered. Any unauthorized conditions, limitations or provisions attached to the proposal, or the omission of a bid on any item in the proposal for the section bid upon, will render it informal and may cause its rejection. No bids will be allowed to be withdrawn after time set for receiving bids.

L. CONTRACT DOCUMENTS

1. The Contract Documents are intended to agree and be mutually explanatory, and they shall be accepted and used as a whole and not separately. Should any items be omitted from the Project Scope of Work and/or the Drawings, or vice versa, it shall be executed the same as if shown and combined in both. Should any item be omitted, or should any item be described in the Scope and/or Drawings, but not duplicated on other, it shall be executed the same as if shown and combined in both. Should contradiction be found, notify Owner's Representative prior to receipt of bids so that contradictions can be clarified by addendum (a).

2. Large scale details will be furnished by the Owner's Representative for all work which in the opinion of Owner's Representative requires same.

3. Details shall be accurately followed, deviation therefrom being cause for rejection of work.

4. Explanatory note shall be preferred to conflicting drawn out indications. Large scale details shall be preferred to scale measurements. In all cases the details shall be checked with existing conditions. Should any variation be found, it shall be immediately referred to Owner's Representative for clarification and adjustment.

5. Owner's Representative will be, in the first instance, the interpreter of the requirements of the Contract Documents and judge the performance thereunder by Contractor.

Owner's Representative will within a reasonable time, render such interpretations as he may deem necessary for the proper execution or progress of the work.

6. Contractor shall field verify items as outlined in the Project Scope of Work and/or the Drawings.

7. A site visit must be made by Contractor and subcontractors to determine the exact nature and scope of the work to be done.

8. Any quantities called out in the Scope of Work, Bid Documents, Drawings, Specifications, and/or Details are approximate. Contractor shall calculate and verify his own quantities used to formulate his bid. Contractor shall verify and determine his own quantities for all materials, lengths of roadway, and other items required to complete the repaving and drainage improvement work for the project as described in the Scope of Work, Bid Documents, Drawings, and/or Specifications.

9. Contractor is responsible for hauling off all demolition materials (soil, base, existing asphalt, etc.) to a State approved disposal facility at no additional cost to the Owner.

10. Contractor shall use the Georgia DOT asphalt index when forming his bid for any asphalt repair and adjust prices during construction. Use the latest version of the Georgia DOT index for calculations. Bidder will prepare Asphalt prices for bid based on the current GDOT Asphalt Cement Price Index listed at the time of bid opening. The successful Contractor's pay request will list the current GDOT Asphalt Cement Price Index at the time of purchase. The difference in price between the GDOT Asphalt Cement Price Index at bid and at purchase will either be a change order to the Contractor or a Credit to the Owner. The GDOT Asphalt Cement Price Index is in accordance with Special Provision 109 (dated 2009, or latest version), Section 400.5.01 Adjustments, the asphalt price index for the month of the Letting posted on the Georgia Department of Transportation Website.

11. Contractor shall coordinate with Owner to locate a suitable staging area near the project. If necessary, the Contractor is responsible for the coordination and payment of fees or leasing agreements needed for the storage and/or staging of equipment on private property.

12. The Contractor is responsible for any and all utility locates needed before commencing work on the project. The Contractor shall contact the affected utility, not the City, should utility damage occur. Emergency contact numbers will be provided to the successful bidder.

13. Contractor is not responsible for acquiring any permits.

14. No other testing requirements are required by the Contractor unless an unforeseen circumstance arises with subgrade issue on a case-by-case basis. If this occurs the

repaired area shall be proof rolled for subgrade and base material in the presence of the Owner or Owners' Representative prior to placing base and binder material over graded aggregate base material. If any areas fail, then the Contractor will be required to provide a Geotechnical Engineer to qualify and quantify bad materials. Geotechnical Engineer shall be selected by the Contractor, approved by the owner, and paid through an approved change order by the Owner.

15. Access to residential and commercial driveways, as well as maintaining one lane (12' wide minimum for school bus access) open for traffic at all times is the Contractor's responsibility. The Contractor's means, methods and scheduling for completion of the contract work is his responsibility.

16. Limits of work for this project occur in residential areas so work is restricted to between the hours of 8 a.m. to 6 p.m. Monday through Saturday. No work on Sunday.

17. Contractor is responsible for all erosion control required to complete the scope of work such as Rip Rap, Erosion Control Matting, temporary and permanent grassing (Sod), and other measures as outlined in the Scope of Work, Bid Documents, and/or Performance Specification.

18. No partial sets of the Contract Documents will be issued by Owner or Owner's Representative.

End of Section

SECTION 00 300

BID PROPOSAL FORM

TO: CITY OF DACULA
P.O. Box 400
Dacula, Georgia 30019

Date:_____

Gentlemen:

Having carefully examined the Contract Documents entitled "McMillan Road Stormwater Improvements Project", dated June 24th, 2022 and Addendum (a) No. (s) _____, and having examined the Site and conditions affecting the work, including availability of materials and labor, the undersigned hereby proposes to furnish all materials, labor, tools, equipment, machinery, transportation, supervision, administration and services necessary and incidental to construct and substantially complete the drainage and paving improvements called for in the Contract Documents for said project, and in accordance with said documents, shall be substantially complete by the time set forth therein.

A. BASE BID –

The Work to be completed for this Project consists of furnishing all labor, materials, earthwork, construction operations, details, supervision and coordination of all trades, utility suppliers, governmental inspections and approvals to complete the construction, installation, and coordination for the City of Dacula "McMillan Road Stormwater Improvements Project" as follows:

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D. Contractor is responsible to locate horizontally and vertically all existing utilities within limits of disturbance and protect throughout duration of project. Utilities which are present include water, gas, electrical, CATV, AT&T, etc., but may not be limited to these within the limits of disturbance. All existing utilities shall be located and protected from damage by the Contractor.

E. Contractor shall have a Site Superintendent on-site at all times while work is in progress to monitor, direct, and control construction activities. Superintendent in-charge shall be available to City, Engineer, and adjacent property owners to answer or direct questions concerning the project.

Owner reserves the right to waive any informalities and any technicalities, and to reject any or all bids. There will be a Pre-Bid Conference at Dacula City Hall, 442 Harbins Road, Dacula, GA 30019 at **3:00 PM** local time on **Tuesday, August 2, 2022**. All bidders are strongly encouraged to attend this conference. Owner reserves the right to waive any informalities and any technicalities, and to reject any or all bids. All questions concerning this project shall be submitted in writing by fax or email to The Bowman Consulting Group, LLC (Bowman). (Owner's Representative – Kevin D. Whigham, P.E.) 4174 Silver Peak Parkway, Suwanee, Georgia 30024, phone number 770-932-6550 or email kwhigham@bowman.com no later than **Thursday, August 11, 2022 by 5:00 PM.**

If any unforeseen sub-grade conditions arise the Contractor shall immediately notify the Owner and/or Owner's representative before proceeding with any work to determine the course of action. The Contractor shall have a Geotechnical Engineer who will be selected by the Contractor and approved by the Owner qualify and quantify the areas and determine the method of sub-grade repair in coordination with the Owner and/or Owner's Representative on a case-by-case basis.

A. *BASE BID* – "McMillan Road Stormwater Improvements Project" – *LUMP SUM AMOUNT*

**Bidder agrees to perform all of the Improvements described in the specifications and represented by the project drawings for the SUM OF :

_____($_____)

(Amounts shall be shown in both * words and figures).

* In case of discrepancy, the amounts shown in words will govern.

**Please note that successful Bidder will be required to submit a Unit Price Breakdown of items used in determining the Lump Sum Bid Proposal Price for this work.

** The **Base Bid** amount shall consist of Work Items more particularly described in Section 01 000, Project Scope & Performance Specification. The Contractor shall be responsible for all labor, equipment, materials, operations, details, insurance, supervision, coordination, administration, overhead and profit, plus all necessary incidental costs associated with the complete function of the Work Scope in context of the project.

"Notice to Proceed" will be issued after the Pre-Construction meeting as soon as all required paperwork such as Contracts, Bonds, Insurance, etc. are in order. Contractor shall mobilize within ten (10) days of Notice to Proceed issued by the City of Dacula and to commit adequate forces on site to substantially complete all Work including punch list items and clean-up for the Base Bid within *Ninety (90) consecutive calendar days*. The City of Dacula will charge the Contractor Five-Hundred Dollars and no cents ($500.00) per day for liquidated damages for every day past the completion of the Contract.

The undersigned agrees that this proposal may not be revoked or withdrawn after the time set for the opening of bids but shall remain open for acceptance for a period of 60 days following such time. The undersigned, upon receipt of written notice of the acceptance of this bid, agrees to execute within ten (10) days a Contract for the work for the above stated compensation, and to furnish and deliver to Owner at the same time as the Contract, the required Performance Bonds, and a Labor and Materials Payment Bond, for General Contractor in amount to equal 100% of the Contract Sum. These bonds shall be written on forms provided by a company acceptable to the Owner and licensed to do business in the State of Georgia at the time the bonds are written, and that are listed on "Department of the Treasury Circular 570."

If this proposal is accepted within 60 days after the date set for the opening of bids and the undersigned fails to execute the Contract within ten (10) days after written notice of such acceptance or if he fails to furnish the Performance Bonds and the Labor and Material Payment Bond, the obligation of the Bid Bond will remain in full force and effect and the money payable thereon shall be paid into the funds of the Owner as liquidated damages for such failure; otherwise, said Bid Bond shall be returned to the undersigned upon completion of such obligations.

The undersigned has checked carefully all the foregoing figures and understands that the Owner will not be responsible for any errors or omissions on the part of the undersigned in making this bid. The undersigned also acknowledges receipt of the following Addenda, listed by number and date as issued appearing on each:

Addendum No.	Date

IN COMPLIANCE WITH THE ATTACHED SPECIFICATIONS, THE UNDERSIGNED OFFERS AND AGREES, IF THIS BID IS ACCEPTED BY THE CITY OF DACULA, GA WITHIN SIXTY (60) DAYS OF THE DATE OF BID OPENING, TO FURNISH ANY OR ALL OF THE ITEMS UPON WHICH PRICES ARE QUOTED, AT THE PRICE SET OPPOSITE EACH ITEM, DELIVERED TO THE DESIGNATED POINT(S) WITHIN THE TIME SPECIFIED IN THE BID SCHEDULE. THE SUCCESSFUL CONTRACTOR SHALL PROVIDE A SCHEDULE OF VALUES WITH UNIT PRICES FOR A BREAKDOWN OF THEIR LUMP SUM BID.

COMPANY:_____

COMPLETE PHYSICAL ADDRESS:_____

REPRESENTATIVE'S SIGNATURE:_____

DATE:_____

TELEPHONE NO.:_____ FAX NO.:_____

EMAIL:_____

PRINT AUTHORIZED REPRESENTATIVE'S NAME:_____

IF REMITTANCE ADDRESS IS DIFFERENT, INDICATE HERE:

_____

SECTION 00 500

CONTRACT

THIS AGREEMENT, made this_____, day of _____, 2022, by and between the City of Dacula, Georgia, herein called "Owner", acting herein through its Mayor, Hon. Trey King, and _____ , County of_____, and State of Georgia, herein 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 with the OWNER to commence and complete the construction of the "McMillan Road Stormwater Improvements" Project described as follows:

A. BASE BID –

The Work to be completed for this Project consists of furnishing all labor, materials, earthwork, construction operations, details, supervision and coordination of all trades, utility suppliers, governmental inspections and approvals to complete the construction, installation, and coordination for the City of Dacula "McMillan Road Stormwater Improvements Project" as follows:

The City is having issues with the existing storm pipe and structures holding stormwater and ponding out into McMillan Road near proposed JB 1-H. In order to alleviate this issue, the Scope of Work will include demolishing the existing storm sewer system from proposed JB 1-I downstream to the creek through the City's adjacent property. An entire new Storm Sewer Outfall System will be installed in its place. The existing pipes have been TV inspected with varying results. The storm line upstream of JB 1-H is holding stormwater up to the existing grate inlet at the northwest corner of Winder Hwy. and McMillan Road. The Contractor shall excavate and replace the existing pipe crossing underneath McMillan Road and replace with new RCP culvert and junction box adjacent to building or where buried junction box is located. Contractor will then investigate and cleanout the existing 36" RCP Box Culvert which appears to cross underneath the corner of the existing building. The existing grate inlet at northeast corner of Winder Hwy. and McMillan Road will need to be reconstructed and top made accessible with steps for access and clean out of downstream pipe. Contractor will also cleanout existing 24" RCP storm sewer line extending north from proposed JB 1-H underneath Winder Hwy. and Railroad to upstream headwall adjacent to Hebron Church Road.

The Demolition scope also includes removing all asphalt pavement along McMillan Road from right-of-way of Winder Hwy. south to limits of removal as illustrated on the Drawings. The remainder of McMillan Road from the removal limits to the 4-Way Stop at Church Street will be milled and repaved. A deep patch milling detail is included if any pavement areas need additional repair. The City's adjacent lot which is currently fenced can be used as a laydown area for construction. At end of construction, Contractor shall remove all existing pavement within the fenced limits and fine grade area to drain to new storm sewer weir inlets and stream buffer. Fence

will need to be disassembled and stored until construction is complete and then reinstalled by the Contractor.

A new storm sewer outfall line and structures will be installed along McMillan Road and extend west down along the outside of the stream buffer until it can be discharged into the stream buffer as illustrated on the Drawings. A new junction box (JB) will be installed on the east side of McMillan Road adjacent to the existing building where the existing 36" RCP Box Culvert ties into the 30" RCP culvert running underneath McMillan Road. This new JB will be installed where the Contractor uncovers the buried existing junction box or as illustrated on the Drawings to provide access to cleaning out the existing 36" RCP Box Culvert.

A new 36" RCP culvert will be installed underneath McMillan Road from JB 1-I to JB 1-H; then a 48" HDPE storm line and structures will be installed behind the existing utilities running along the west side of McMillan Road. McMillan Road will be regraded from Winder Hwy. right-of-way limits south to a new low which is created farther away from Winder Hwy. Curb & Gutter will be installed along the west side of newly regraded McMillan Road. A new Double Wing Catch Basin (DWCB 1-F.1) will be installed to drain stormwater from this low point with a 24" HDPE pipe installed to drain stormwater to outfall storm sewer at JB 1-F.

The remaining 48" HDPE storm outfall sewer will extend south to the stream buffer and turn west at JB 1-E and then continuing draining till it discharges into stream buffer at Headwall (HW 1-A). Contractor shall minimize disturbance within stream buffer and limit grading and disturbance operations to pipe, headwall, riprap installation only.

In addition, McMillan Road at limits of regrading near existing low point at stream crossing shall be milled and repaved as illustrated on the Drawings up to the 4-Way Stop at Church Street. Contractor shall document all existing striping and replace in-kind including but not limited to "Railroad Ahead" striping, stop bars, double centerline striping, and parking lot lines. Install eight (8) new concrete curb stop blocks at parking spaces to prevent damage to building. Existing DWCB's and storm pipe at low point near stream crossing shall be cleaned out and paved inverts installed to drain. Existing HDPE pipe and French Drain draining into existing DWCB on west side of McMillan Road near Station 3+10 needs to be cleaned out and/or replaced to drain low point area behind DWCB and existing house.

McMillan Road shall be repaved with Heavy Duty Pavement Section. Parking area adjacent to McMillan Road and Building shall be repaved with Standard Duty Pavement Section. Milled areas shall be milled 2.5" unless a deep patch section is needed (to be approved by Owner prior to additional milling and paving) and then repaved with tack coat, 1" of 'D' Mix Asphalt Binder Course, and 1-1/2" Type 1 - 'F' Mix (9.5 mm) Asphalt Surface Course. All new pavement repair shall have smooth transition with adjacent existing asphalt.

Erosion, Sedimentation, and Pollution Control Measures are part of the Contractor's Scope of Work. BMP's shall be installed on all existing and new storm inlets as well as Double Row Type 'C' Silt Fence along Stream Buffer. See Drawings for all BMP's to be installed.

All disturbed areas will be permanently grassed with Erosion Control Matting and permanent Bermuda Seed. Any disturbance adjacent to or within a homeowner's front yard shall be permanently stabilized with Bermuda Sod. Removal of all vegetation and trees within limits of work shall be included in Contractor's overall Bid unless otherwise illustrated on the drawings. Traffic access to streets and private driveways shall remain open at all times unless approved by the Owner. If road closure is granted, then Contractor shall provide Traffic Control Plan and all detour signage required in his overall Bid.

All earthwork quantities for grading, pipe bedding, and backfill whether haul-in and/or haul-off are the responsibility of the Contractor to include in their Lump Sum Bid in order to complete the Scope of Work at no additional cost to the Owner. All quantities and measurements are approximate. Contractor shall visit the Site and determine his own quantities for bidding this project.

Contractor shall include in their Base Bid all costs for adjusting and relocating any water and gas services lines, meters, or valves impacted by new storm line installation in order to complete the scope of work as described by the Contract Documents and Drawings. Contractor shall coordinate with utility companies and relocate utilities as required to install new improvements. Contractor must be qualified with Gwinnett County in order to perform water line installation, relocation and repairs.

One lane of traffic and access to residential/commercial driveways must be maintained at all times unless road closure is granted by the City as stated above. Traffic Safety devices such as signage, barricades, etc., and the protection of the public-at-large, and the Contractor's personnel is part of this contract and is the Contractor's sole responsibility. The Contractor will have *Ninety (90) consecutive calendar days* from the "Notice to Proceed" to finish and complete the project.

All materials and appurtenances required to complete this Scope of Work is the responsibility of the Contractor and shall be provided in his overall Bid. The Contractor must be an approved Contractor with the City of Dacula and/or Gwinnett County. A complete list of materials should be included in the Contractor's overall Bid.

Bidder will prepare Asphalt prices for bid based on the current GDOT Asphalt Cement Price Index listed at the time of bid opening. The successful Contractor's pay request will list the current GDOT Asphalt Cement Price Index at the time of purchase. The difference in price between the GDOT Asphalt Cement Price Index at bid and at purchase will either be a change order to the Contractor or a Credit to the Owner. The GDOT Asphalt Cement Price Index is in accordance with Special Provision 109 (dated 2008), Section 400.5.01 Adjustments, the asphalt price index for the month of the Letting posted on the Georgia Department of Transportation Website.

Additional items within Scope of Work

A. A site visit must be made by Contractor and subcontractors to determine the exact nature and scope of the work to be done. Contractor is responsible for

hauling off all demolition materials (existing pipe, concrete, asphalt, etc.) to a State approved disposal facility at no additional cost to the Owner. Contractor shall tie in and feather new asphalt into existing asphalt so that there is a smooth transition.

B. If any unforeseen sub-grade conditions arise the Contractor shall immediately notify the Owner and/or Owner's representative before proceeding with any work to determine the course of action. The Contractor shall have a Geotechnical Engineer (who will be selected by the Contractor and approved and paid for by the Owner) qualify and quantify the areas and determine the method of sub-grade repair in coordination with the Owner and/or Owner's Representative on a case-by-case basis.

C. The limits of work for this project are limited to that area within the right-of-way of City of Dacula and City owned property in order to perform the paving and storm sewer drainage pipe and structure installation as described by scope of work in the Contract Documents.

D. Contractor is responsible to locate horizontally and vertically all existing utilities within limits of disturbance and protect throughout duration of project. Utilities which are present include water, gas, electrical, CATV, AT&T, etc., but may not be limited to these within the limits of disturbance. All existing utilities shall be located and protected from damage by the Contractor.

E. Contractor shall have a Site Superintendent on-site at all times while work is in progress to monitor, direct, and control construction activities. Superintendent in-charge shall be available to City, Engineer, and adjacent property owners to answer or direct questions concerning the project.

Owner reserves the right to waive any informalities and any technicalities, and to reject any or all bids. There will be a Pre-Bid Conference at Dacula City Hall, 442 Harbins Road, Dacula, GA 30019 at **3:00 PM** local time on **Tuesday, August 2, 2022**. All bidders are strongly encouraged to attend this conference. Owner reserves the right to waive any informalities and any technicalities, and to reject any or all bids. All questions concerning this project shall be submitted in writing by fax or email to MDA, a Bowman Company, (Bowman). (Owner's Representative – Kevin D. Whigham, P.E.) 4174 Silver Peak Parkway, Suwanee, Georgia 30024, phone number 770-932-6550 or email kwhigham@bowman.com no later than **Thursday, August 11, 2022 by 5:00 PM.**

All quantities and measurements are approximate. Contractor shall visit the Site and determine his own quantities for bidding this project. The limits of work for paving improvements will be repaved to existing widths except as illustrated on the Drawings. Contractor is responsible for verifying all lengths of roadway and quantities required to complete the asphalt repaving work for this project.

Contractor is responsible for hauling off all demolition materials (asphalt, concrete, construction debris) to a State approved disposal facility at no additional cost to the Owner.

Contractor is responsible for all earthwork quantities to complete the scope of work for the project. All costs associated with haul off or haul in of earthwork materials shall be included in the Contractor's overall Bid at no additional cost to the Owner.

If any unforeseen sub-grade conditions arise the Contractor shall immediately notify the Owner and/or Owner's Representative before proceeding with any work to determine the course of action. The Contractor shall have a Geotechnical Engineer who will be selected by the Contractor, approved and paid for by the Owner qualify and quantify the areas and determine the method of sub-grade repair in coordination with the Owner and/or Owner's Representative on a case-by-case basis.

CONTRACTOR shall perform the above scope of work, hereinafter called the "Project", for a lump sum, fixed price of_____ Dollars. ($_____); and all extra work in connection therewith, under the terms as stated in the Contract Bid Documents; and at his (its or their) own proper cost and expense to furnish all the 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 Bid Proposal.

CONTRACTOR shall provide OWNER with Certificate of Insurance and Performance and Payment Bonds as required by these Contract Documents.

This is a lump sum, fixed price Contract. Notwithstanding any other provision of this Contract, the amount to be paid to Contractor by the City shall not exceed _____ Dollars ($_____) without the prior written approval of the Mayor and Council of the City of Dacula. Any change order which increases the Contract price by more than $5,000.00 must be approved in advance by a formal vote of the Mayor and City Council of the City of Dacula at a duly called meeting.

A. *BASE BID* – "McMillan Road Stormwater Improvements Project" – *LUMP SUM AMOUNT*

**Bidder agrees to perform all of the Improvements described in the specifications and represented by the project drawings for the SUM OF :

_____($_____)

(Amounts shall be shown in both * words and figures).

* In case of discrepancy, the amounts shown in words will govern.

**Please note that successful Bidder will be required to submit a Unit Price Breakdown of items used in determining the Lump Sum Bid Proposal Price for this work.

** The **Base Bid** amount shall consist of Work Items more particularly described in Section 01 000, Project Scope & Performance Specification. The Contractor shall be responsible for all labor, equipment, materials, operations, details, insurance, supervision, coordination, administration, overhead and profit, plus all necessary incidental costs associated with the complete function of the Work Scope in context of the project.

The OWNER is subject to the requirements of the Georgia Security and Immigration Compliance Act. Accordingly, the requirements of O.C.G.A. '13-10-91 and Georgia Department of Labor Rule 300-10-1-.02 are conditions of this Contract. Compliance with these requirements shall be attested by the execution of the Contractor Affidavit attached hereto, which shall become a part of the awarded contract. In the event the Contractor employs or contracts with any subcontractor(s) in connection with the awarded contract, the Contractor shall secure from such subcontractor(s) attestation of the subcontractor's execution of the Subcontractor Affidavit attached hereto, which shall also become a part of the awarded contract and also a part of the contractor/subcontractor agreement. Contractor shall maintain records of such attestation for inspection by The City of Dacula at any time. Contractor shall be required to provide copies to the City of Dacula upon request. Failure to comply with these rules will result in the rejection of the bid proposal and/or termination of any awarded contract where it is subsequently determined that there has been a violation of any provision of the Act or implementing rules and regulations.

Any dispute arising under this Contract shall be heard in the Superior Court of Gwinnett County, Georgia, and the parties consent to jurisdiction and venue in that Court. The parties waive any defense that may have to lack of jurisdiction or improper venue and agree to have all disputes resolved in the Superior Court of Gwinnett County.

CONTRACTOR hereby agrees to commence work under this Contract on or before a date to be specified in a written "Notice to Proceed" of OWNER and to a fully complete the Project within *Ninety (90) consecutive calendar days* thereafter.

The Owner agrees to pay the Contractor in current funds for the performance of the Contract, subject to additions and deductions, on completion of the project and final inspection of the Owner.

Termination for Cause: The City may terminate this Contract for cause upon ten (10) days prior written notice to the Consultant of the Consultant's default in the performance of any term of this Contract. Such termination shall be without prejudice to any of the City's rights or remedies provided by law.

Termination for Convenience: The City may terminate this Contract for its convenience upon 30 days written notice to the Consultant. In the event of the City's termination of this Contract for convenience, the Consultant will be paid for those services actually performed. Partially completed performance of the Contract will be compensated based upon a signed statement of completion to be submitted by the Consultant, which shall itemize each element of performance.

IN WITNESS WHEREOF, the parties to these presents have executed this Contract in two (2) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

(Seal)

ATTEST: CITY OF DACULA

_____ By:_____

(Mayor)

ATTEST: _____

(Seal)

(Contractor)

_____ By:_____

(Witness)

SECTION 00 600

BONDS AND CERTIFICATES

PART 1 - GENERAL

1. BID BOND: A bid bond in the amount of 5% of the base bid shall accompany the bid. The Attorney in-fact who signs the bid bond must file with the bid bond a certified copy of his Power of Attorney to sign such bond.

2. PAYMENT & PERFORMANCE BOND: Contractor shall furnish both a Performance Bond and Payment Bond, each in the amount of 100% of the Contract Sum, unless otherwise directed by the Owner. The surety must be one which is authorized to do business in the State of Georgia and is listed on "Department of the Treasury Circular 570". Bonds must be accompanied by letter stating company's current rating for verification prior to acceptance by the Owner and execution of the formal Owner/Contractor agreement. It shall be specifically understood that the performance Bond fully protects the Owner and guarantees the completion of the project in accordance with all Bid Documents. After award of contract, submit a properly executed "Performance Bond" and "Labor and Material Payment Bond".

3. CERTIFICATE OF INSURANCE: After award of contract, Contractor shall submit a properly executed "Certificate of Insurance" to Owner.

4. LIST OF SUBCONTRACTORS: After award of contract, but prior to Pre-Construction Conference, submit a properly executed "List of Subcontractors".

End of Section

SECTION 00 700

GENERAL CONDITIONS

PART 1 - GENERAL

1. "The General Conditions for the Contract for Construction", 1997 Edition, with modifications as called out in Section 00 801 - Supplementary Conditions, is hereby made a part of these documents to the same extent as if herein written out in full.

End of Section

SECTION 00 801

SUPPLEMENTARY CONDITIONS (1997)

The following supplements modify, delete, or add to the "General Conditions of the Contract for Construction, 1997 Edition". Where any article, paragraph or sub-paragraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or sub-paragraph shall remain in effect and the supplemental provisions shall be considered added thereto. Where any article, paragraph, or sub-paragraph, in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph or sub-paragraph not so amended, voided, or superseded shall remain in effect.

I. ARTICLE 1 - GENERAL PROVISIONS

A. 1.1.1: The Drawings and Specifications shall include the Instructions to Bidders, Invitation to Bid, Sample Forms, Contractor's Bid, and all Addenda items relating to Bidding.

B. 1.1.7: The term "Project Manual" as used in these conditions is the volume which includes the Bidding Drawings and Specifications, the Agreement Between Owner and Contractor, the Conditions of the Contract, the Specifications, and all Addenda issued prior to, and all Modifications issued after execution of Contract.

II. ARTICLE 2 - OWNER

A. 2.1.4: The Owner is the City of Dacula, Georgia. All contact with the Owner shall be made to and through the Engineer, Kevin D. Whigham, P.E., Bowman Consulting Group, Ltd. (Bowman), 770-932-6550 or kwhigham@bowman.com. The only other directions the Contractor may respond to are those issued by the City of Dacula Council, Mayor, or City Administrator.

B. 2.2.5: Sets of Construction Documents may be obtained as provided for in Advertisement to Bid, which need not be returned by the successful bidder.
   1. For construction purposes, the Owner will furnish free of charge to the successful bidding Contractor a maximum of Five (5) printed sets of complete Construction Documents consisting of the Drawings, the Specifications, and all Addenda.
   2. Any additional sets of complete Construction Documents or additional copies of selected sheets of Contract Drawings, or sections or pages of Specifications requested by the Contractor will be supplied and billed to the Contractor.

C. 2.4.2: "If, in the opinion of the Engineer, it is evident that the Contractor has not completed or will not be able to substantially complete the work in accordance with

Drawings and Specifications due to default, negligence, or failure on the part of the Contractor, or their subcontractors, the Owner may, at his option, without prejudice, after the expiration of the two seven-day written notices to the Contractor, complete certain portions of the work as may be necessary, or augment the forces of the Contractor with additional manpower as may be required to complete the work by the contracted completion date. In such case, an appropriate deductive change order shall be written, deducting from the contract price the actual costs incurred by the Owner to complete or augment the work. Amount charged to the Contractor will be subject to the approval of the Engineer. Such action, if taken by the Owner, shall not be interpreted by the Contractor as a termination of the contract as per Paragraph 14.2, and the Contractor is to continue to carry out the work or portions of the work as may be required by the contract during this time frame.

III. ARTICLE 3 - CONTRACTOR

A. 3.2.4: In case of discrepancies or conflicts in the Drawings and Specifications, the documents to hold precedence over others shall be in the following order:

3.2.4.1 The Owner-Contractor Agreement (including modifications thereto).
3.2.4.2 Change Orders - Those of a later date shall take precedence over those of an earlier date.
3.2.4.3 Written Amendments to the Contract Signed by Both Parties - Those of a later date shall take precedence over those of an earlier date.
3.2.4.4 Addenda - Those of a later date shall take precedence over those of an earlier date.
3.2.4.5 Clarifications.
3.2.4.6 Supplementary Conditions.
3.2.4.7 General Conditions.
3.2.4.8 Specifications.
3.2.4.9 Schedules.
3.2.4.10 Details - Large scale details shall control over small scale drawings.
3.2.4.11 Other drawings.
3.2.4.12 Drawings dimensioned.
3.2.4.13 Drawings not dimensioned.

B. 3.2.5: Items of work not illustrated in the drawings or specifications or the mis-description of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or mis-described details of the work, but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

C. 3.2.6 MEASUREMENTS AND DIMENSIONS

3.2.6.1 The Contractor shall check and be responsible for correctness of all dimensions by taking measurements at the project site before ordering material or doing work dependent for proper size of installation upon coordination with job conditions.

3.2.6.2 The Contractor shall refer discrepancies between Drawings, Specifications, and Project Conditions to Engineer for adjustment before work affected thereby is begun.

3.2.6.3 No consideration shall be given any claim based on difference between actual dimensions and those illustrated on the drawings without first complying with 3.2.6.2 above.

D. 3.3.8: All grades, lines, levels, and benchmarks for the work under this Contract shall be established and maintained by the Contractor, who shall verify all grades, lines, levels and dimensions indicated on the Drawings, and shall report all discrepancies before commencing work. The Contractor shall provide and maintain well-built batter boards at corners. He shall establish and safeguard benchmarks in at least two widely separated places. As work progresses, he shall establish and safeguard benchmarks at each level and shall establish exact locations of partitions on rough floors as a guide to trades. Any costs of corrective measure necessitated by erroneous establishment of grades, lines, levels and benchmarks shall be paid for by the Contractor.

E. 3.7.1: The Owner shall pay for any Permit and/or other jurisdictional fees. The Contractor shall secure and pay for all other governmental permits, fees, licenses and inspections necessary for the proper execution and completion of the work, which are customarily secured after execution of the contract, and which are legally required at the time the construction begins.

F. 3.7.6: Required permits, licenses, inspections, and certificates shall be carefully preserved and prominently posted during the construction period at the project for the easy, convenient access by the various inspecting authorities.

G. Add paragraph 3.19 as follows:

3.19 PRE-CONSTRUCTION CONFERENCE

3.19.1 A Pre-Construction Conference shall be held prior to commencement of work. The purpose of this conference is to introduce all members of the construction team, which include the Engineer, the Contractor's Project Manager, and the Contractor's Superintendent, to review and ensure all Drawings and

Specifications and Submittals are completed and in compliance with all Agreements. In addition, the Contractor shall submit 2 copies of all Post-Bid Information, as described below, for the Owner and Owners' Representative's review.

3.19.2 A schedule of values for each major item of work included in the Contract shall be submitted on schedule of values cost index sheets contract and shall define both labor and materials costs for each. Provide breakdown per divisions and sections per table of contents of these specs. See sample form included in Bid for Lump Sum Contracts.

3.19.3 A statement designating all work to be performed by the Contractor's own forces shall be submitted.

3.19.4 A list of the name of all Sub-Contractors and names of other organizations proposed for each portion of the Work shall be properly executed on "List of Subcontractor's" - and shall be submitted for Owner's and Engineers' review with 24-hour phone numbers.

3.19.5 The Performance Bond shall be properly executed on acceptable forms and submitted in duplicate, as described in Section 00 600 - Bonds and Certificates. Bond rating letter shall be included.

3.19.6 The Labor and Materials Bond shall be properly executed on acceptable forms and submitted in duplicate.

3.19.7 The Certificate for Insurance shall be properly executed on acceptable forms and submitted in duplicate.

3.19.8 A list of the names of all suppliers of principal materials and equipment shall be submitted for Owner's and Engineer's review.

3.19.9 Construction Schedule submitted to Owner within two weeks of award of contract.

3.19.10 A schedule of submittals including certifications, shop drawings, product data, samples, manuals, as built drawings and guarantees with dates of proposed submittals shall be submitted.

3.19.11 In addition to submittal of the previous items, the following topics will be discussed. The General Contractor is encouraged to have all subcontractors represented at the conference:

3.19.11.1 Introduction of all attending parties.

3.19.11.2 Channels and procedures for communication shall be discussed.

3.19.11.3 Requests for substitution shall be issued in accordance with the requirements of Section 01 630.

3.19.11.4 Issuance of RFP's (Requests for Proposals) by the Engineer shall be addressed by the General Contractor within 7 calendar days of receipt thereof in accordance with Supplementary Conditions, Article 7.

3.19.11.5 Change Order compensation shall be based on figures indicated in Supplementary Conditions, Article 7.

3.19.11.6 Pre-construction submittals shall be issued as indicated in Supplementary Conditions, sub-paragraph 3.19.

3.19.11.7 Any requested shop drawings, samples and other project submittals shall be approved by Owner and Engineer.

3.19.11.8 Job Progress Meetings shall be held on an as needed basis to review the Contractor's Application(s) for Payment.

3.19.11.9 Applications for Payment shall be issued in accordance with the requirements of Article 9 of the General Conditions of the Contract for Construction and all applicable Supplementary Conditions. All Applications for Payment shall be received by the Engineer no later than the first day of each month and paid by the first Friday following the 15th day of the month. Retainage shall be as described in Supplementary Conditions, paragraphs 9.3.4, 9.6 and 9.6.6. (Retainage shall be 10 percent of the amount earned for the work in place, plus the value of stored materials up to and including 50 percent completion, then 0 percent until final completion, thereby reducing retainage at final completion to 5 percent of the contract amount (including change orders), subject to the approval of the Owner and the Engineer. In other words, at 50 percent project completion, retainage will be 5 percent of the contract amount, plus approved change orders, until final completion is achieved. Retainage for individual subcontractors shall not be released separately as the subcontractors complete their work. Nor shall the retainage for individual subcontractors be reduced when payments beyond 50% of the individual contracts are released. Retainage shall only be reduced based on payments released in excess of 50% of the overall contract sum.

3.19.11.10 Safety precautions and programs shall be as directed by the General Contractor in accordance with the General Conditions in Section 00 700.

3.19.11.11 Requests for time extension shall be issued in accordance with the requirements of the General and Supplementary Conditions, Article 8.

3.19.11.12 Discrepancies and conflicts in the Drawings and Specifications shall be resolved using the order of precedence indicated in the Supplementary Conditions, paragraph 3.2.4.

3.19.11.13 The Date of Substantial Completion shall not be achieved, and the Certificate of Substantial Completion shall not be issued prior to receipt of the official Certificate of Occupancy by the General Contractor. This requirement is indicated in Specification Section 01 700, Part 1.1.A. In addition, the Certificate of Substantial Completion shall only be issued in accordance with the requirements of Section 9.8 of the General Conditions of the Contract for Construction.

3.19.11.14 Contract closeout/final payment requirements are indicated in Section 01 700. Piecemeal delivery of final closeout documents and materials is unacceptable.

3.19.11.15 Materials testing (if required) shall be conducted under a separate contract by the Owner. Contractor shall acquire a Geotechnical Engineer to perform all testing to be approved by and paid for by Owner. The General Contractor shall note that he is responsible for payment of additional testing services, if initial testing services fail.

3.19.11.16 Immediately prior to Substantial Completion, the General Contractor shall prepare a comprehensive list of items to be corrected or completed (a punch list) for the Engineer's review, in accordance with paragraph 9.8.2 of the General Conditions. The Engineer shall then add to or delete items from the list during a Substantial Completion Inspection.

3.19.11.17 Permits, fees, licenses, etc. shall be addressed in accordance with the requirements of General Conditions, paragraph 3.7.1, all applicable Supplementary Conditions, and as follows:

A. All work and material shall be in accordance with the National Electrical Code, the Plumbing Code, and other applicable Federal, State, County, and municipal laws, ordinances, rules and regulations pertaining to construction, and nothing in these plans or specifications shall be construed to permit work not conforming thereto. The Contractor shall

consult the Engineer on all deviations regarding possible noncompliance and provide all labor and materials to complete the work as required by laws, ordinances, rules and regulations as directed by the Owner at no increase in cost to the Owner. He shall first confer with the Engineer before making any determinations as to changes in quality, scope and/or increases in cost.

3.19.11.18 Compensation for stored materials shall be as defined in parts 6.2.1, 9.3.2, and 10.2.1.2 of the General Conditions, and as follows:

H. Material delivered for the Contractor to locations other than the site may be taken into consideration in the preparation of pay requests at the discretion of Engineer, provided the Contractor furnishes satisfactory evidence that he has acquired title to such material that it will be utilized on the project covered by this contract in the form of an affidavit stating such. Contractor must provide proof of acceptable insurance coverage on material stored off-site prior to payment for same as well as invoices for such stored materials indicating transfer of the property to the Owner.

IV. ARTICLE 4 - ADMINISTRATION OF THE CONTRACT

A. 4.1.1: The Architect referred to in the Contract, the General Conditions, Supplementary Conditions or other documents of the Contract shall mean the "Engineer", MDA, a Bowman Company, (Bowman), 4174 Silver Peak Parkway, Suwanee, GA 30024.

V. ARTICLE 7 - CHANGES IN THE WORK

A. 7.1.1: No extra work is to be done without a written change order. Payment will not be authorized for any extra or changed work for which the Contractor has failed to secure such written change order. All change orders must be signed by the Engineer and Owner.

VI. ARTICLE 8 - TIME

A. 8.1.5: A working day is a day for which no premium pay is required of the Contractor for labor.

B. 8.2.4: Upon the determination that the construction progress is two (2) weeks behind the original construction schedule as required by the General Conditions as submitted at the start of the project the Owner will require that the Contractor increase his work effort to a six (6) day ten (10) hour per day work week.

8.2.5: When requested by the Engineer, the Contractor shall furnish reports as are reasonably desirable as to the progress, condition of the job and anticipated schedule of completing the various phases of the work.

C. 8.4 - Rain Days

Requests for extension shall be issued in writing by the Contractor to the Engineer within 21 calendar days of the event which causes the delay. This requirement shall be strictly enforced. Completion time will not be extended for normal bad weather. The time for completion as stated in the Drawings and Specifications includes due allowance for days on which work cannot be performed out-of-doors. Any days lost due to the weather shall be documented and verified with the National Weather Service. These days shall be reported by the Contractor at the monthly job site progress meeting.

For the purpose of this contract, the Contractor agrees that he may expect to lose working days to weather in accordance with the following table:

January - 14 days	May - 6 days	September - 2 days
February - 14 days	June - 3 days	October - 3 days
March - 10 days	July - 4 days	November - 5 days
April - 7 days	August - 2 days	December - 9 days

If the total accumulated number of working week days (Monday thru Friday) lost to the weather from the start of work until the building is enclosed, as defined by the Engineer, exceeds the total accumulated number to be expected for the same period from the table above, the contractual completion date shall be extended by the number of calendar days needed to include the excess number of days lost. No extension shall be made for days of bad weather occurring after the building is enclosed. No extension shall be allowed for days on which total precipitation volume is less than 1/10" as recorded by the National Oceanic and Atmospheric Administration, the National Weather Service, the U.S. Army Corps of Engineers, or any other source chosen to be recognized by the Engineer. No extension will be allowed for precipitation occurring on any Saturday or Sunday or nationally recognized holidays during the project life. Furthermore, should a project fall behind the Contractor's original construction schedule, no extensions will be given for inclement weather days beyond the originally scheduled dry-in date plus any additional days due Contractor during such originally scheduled period. No changes in the contract sum shall be authorized because of adjustment of contract time due to inclement weather.

VII. ARTICLE 9 - PAYMENTS AND COMPLETION

A. 9.2.2: First Payment Application Actions and Submittals which must precede submittal of Contractor's first payment application are as follows:

B. 9.2.3: The schedule of values shall be prepared in the line item format on Application and Certification for Payment and on Document G703 Continuation Sheet provided in Section 01 370, providing labor and material costs for each line item. Stored materials shall be summarized on the Continuation Sheet provided in Section 01 370.

C. 9.3.1: The Contractor shall submit to the Engineer, on or before the first day of each month, an itemized Application for Payment, notarized by a duly registered Notary Public, supported by data substantiating the Contractor's right to payment as the Owner or the Engineer may require, and reflecting retainage, as provided elsewhere in the Drawings and Specifications. The Form of Application for Payment shall be the Certificate for Payment in Section 01 370. Supporting data shall include Schedule of Values from each Subcontractor requesting payment, broken down by labor and materials as the Engineer requires. Copies of requisitions from subcontractors and material suppliers may be required.

D. 9.3.2: Values related to General Contractor's and Subcontractor's overhead and profit for stored materials shall not be paid until the products are incorporated into the project. Materials stored or installed shall not be paid for if required submittals have not been completely reviewed.

E. 9.3.4: Each Application for Payment up to and including the Application for Payment issued at or following 50% project completion (including approved change orders) shall include a ten percent (10%) retainage of all completed and stored to date items (including approved change orders).

F. 9.5.1.9: It shall be understood that if the Contractor's actual progress becomes more than 10% behind Contractor's anticipated progress, the Owner may direct the withholding of payments to Contractor in amounts equal to the percent behind Contractor's anticipated progress, in addition to the normal 10% withheld.

G. 9.6.6.1: It shall be understood that the Owner shall make progress payments on account of the contract prices, including Owner approved and signed change orders, of labor and materials incorporated in the work and of materials suitably stored at the site thereof, as estimated by the Engineer, less the aggregate of previous payments, until one-half (50%) of the overall contract sum is due (including all Owner approved and signed change orders) and provided that:

    a. The work is not behind schedule as determined, by the Engineer only, from the Engineer accepted, time scaled CPM schedule with monthly anticipated

progress payment amounts submitted at, or before, the Pre-construction meeting;

b. The work is being performed in a satisfactory manner in compliance with the Drawings and Specifications as determined by the Engineer;
c. There are no outstanding claims or liens on the property;

H. 9.6.6.2: Further payments beyond 50 percent of the overall contract sum as referenced in 9.6.6.1, with total compliance of Items a, b, and c. shall be made in the amount of 100% of the value of the labor and/or materials incorporated in the work and of materials suitably stored at the site thereof unless;
   a. The percentage of work complete falls behind the percentage required by the Engineer accepted, time scaled construction progress schedule, as described in Item 9.6.6.1.a. by as much as 10%; or
   b. The work is being performed in an unsatisfactory manner and/or non-compliant with the Drawings and Specifications as determined by the Engineer; or
   c. There are outstanding claims or liens on the property.

I. 9.6.6.3: In which event or events, the Owner shall reinstate the 10% retainage on all periodical payments to be paid while one or more of the events continue to exist. The Contractor shall be given written notice, by the Engineer, of the reinstatement of the retainage. If the Contractor's actual progress becomes more than 10% behind the Contractor's anticipated progress, as described in Item 9.6.6.1.a., the Engineer may direct the withholding of payments to the Contractor in amounts equal to the percentage behind the Contractor's anticipated progress, in addition to the 10% described in all Items of Article 9.

J. 9.6.6.4: If the Contractor recovers all lost time and puts the work back on schedule (0% behind schedule) per schedule described in 9.6.6.1.a and remedies all breaches of 9.6.6.2.b. and 9.6.6.2.c. further payments shall be as described in 9.6.6.2; unless Items 9.6.6.1.a. or 9.6.6.2.b. and 9.6.6.2.c. recur in which event or events the Owner shall reinstate Item 9.6.6.3.

K. 9.9.4: Should the Project, or any portion thereof, be incomplete for Substantial Completion or final completion at the scheduled date or dates, the Owner shall have the right to occupy any portion of the Project. In such an event, the Contractor shall not be entitled to any extra compensation on account of said occupancy or by the Owner's normal full use of the project, nor shall the Contractor interfere in any way with said normal full use of the project. Further, the Contractor shall not be relieved of any responsibilities of the Contractor, including the required times of completion. Such occupancy by the Owner does not, in itself, constitute Substantial Completion nor Final Completion.

L. 9.10.6: Reduction in retainage shall not be made automatically. Any reduction in retainage shall only be considered based on the condition of the project at the time of issuance of the Certificate of Substantial Completion.

M. 9.10.7: In the event that Final Completion is not achieved within 60 days of the contracted date of Substantial Completion through no fault of the Owner or Engineer, the Contractor shall pay Owner amounts equal to the actual Owner's costs of continuing to provide administrative services on this Contract, until Final Completion.

N. 9.10.8: Final Payment Application - Actions and submittals which must precede or coincide with submittal of contractor's final payment application are listed in Section 01 700.

O. 9.11: Article 1 of Chapter 10 of Title 13 of the Official Code of Georgia Annotated, relating to general provisions affecting contracts for public works, is amended by adding at the end of said article a new Code section to be designated as Code Section 13-10-2, which is hereby made a part of this Contract, to read as follows:

a) As used in this Code section, the term:
   1. "Contractor" means a person having a direct contract with the Owner.
   2. "Lower tier subcontractor" means a person other than a contractor having a direct contract with a subcontractor.
   3. "Owner" means the state, any county, municipal corporation, authority, board of education, or other public board, public body, department, agency, instrumentality, or political subdivision of the state.
   4. "Engineer" means the Architect or Engineer in charge of the project as authorized by the Owner or such other contract representative or officer as designated in the Drawings and Specifications as the party representing the Owner's interest regarding administration and oversight of the project.
   5. "Subcontractor" means a person other than an owner having a direct contract with the Contractor.

b) In any contract for the performance of any construction project entered into on or after July 1, 1985, with an owner, as defined in paragraph (3) of subsection (a) of this Code section, such contract shall provide for the following:
   1. After work has commenced at the construction site, progress payments to be made on some periodic basis, and at least monthly, based on the value of work completed as may be provided in the Drawings and Specifications, plus the value of materials and equipment suitably stored, insured, and protected at the construction site, and at the Owner's discretion such materials and equipment suitably stored, insured and protected off-site at a location approved by the Engineer when allowed by the Drawings and Specifications, less retainage; and

2. Retainage to a maximum of 10 percent of each progress payment; provided, however, that when 50 percent of the contract value, including change orders and other additions to the contract value provided for by the Drawings and Specifications is due and the manner of completion of the contract work and its progress are reasonably satisfactory to the Engineer, the Owner shall withhold no more retainage. At the discretion of the owner and with the approval of the Contractor, the retainage of each subcontractor may be released separately as the subcontractor completes his work.
3. If, after discontinuing the retention, the owner's authorized contract representative determines that the work is unsatisfactory or has fallen behind schedule, retention may be resumed at the previous level. If retention is resumed by an owner, the Contractor and subcontractors shall be entitled to resume withholding retainage accordingly.
4. At substantial completion of the work or such other standard of completion as may be provided in the Drawings and Specifications and as the Owner's Representative determines the work to be reasonably satisfactory, the Owner shall within 30 days after invoice and other appropriate documentation as may be required by the Drawings and Specifications are provided pay the retainage to the Contractor. If at that time there are any remaining incomplete minor items, an amount equal to 200 percent of the value of each item as determined by the Engineer shall be withheld until such item or items are completed. The reduced retainage shall be shared by the Contractor and subcontractors as their interests may appear.
5. The Contractor shall, within ten days from the contractor's receipt of retainage from the Owner, pass through payments to subcontractors and shall reduce each subcontractor's retainage in the same manner as the Contractor's retainage is reduced by the Owner, provided that the value of each subcontractor's work complete and in place equals 50 percent of his subcontract value, including approved change orders and other additions to the subcontract value and provided, further, that the work of the subcontractor is proceeding satisfactorily and the subcontractor has provided or provides such satisfactory reasonable assurances of continued performance and financial responsibility to complete his work including any warranty work as the Contractor in his reasonable discretion may require, including, but not limited to, a payment and performance bond.
6. The subcontractor shall, within ten days from the subcontractor's receipt of retainage from the contractor, pass through payments to lower tier subcontractors and shall reduce each lower tier subcontractor's retainage in the same manner as the subcontractor's retainage is reduced by the contractor, provided that the value of each lower tier subcontractor's work complete and in place equals 50 percent of his subcontract value, including approved change orders and other additions to the subcontract value and provided, further, that the work of the lower tier subcontractor is proceeding satisfactorily and the

lower tier subcontractor has provided or provides such satisfactory reasonable assurances of continued performance and financial responsibility to complete his work including any warranty work as the subcontractor in his reasonable discretion may require, including, but not limited to, a payment and performance bond.

c) This Code section shall not apply to:
   1. Any contracts let by the Department of Transportation of this state for the construction, improvement, or maintenance of roads or highways in this state or purposes incidental thereto; or
   2. Any contracts whose value or duration at the time of the award does not exceed $150,000.00 or 45 days in duration.

d) Contract and subcontract provisions inconsistent with the benefits extended to contractors, subcontractors, and lower tier subcontractors by this Code section shall be unenforceable; provided, however, that nothing in this Code section shall render unenforceable any contract or subcontract provisions allowing greater benefits to be extended to such contractors, subcontractors, or lower tier subcontractors, the provisions and benefits of this Code section being minimal only.

e) Nothing shall preclude a payor under this Code section, prior to making a payment, from requiring the payee to submit satisfactory evidence including any or all invoices that all payrolls, material bills, and other indebtedness connected with the work have been paid.
   1. In addition to the foregoing, before the Owner can implement the above amendment to the contract, a letter of consent from the Surety Company must be provided to the Owner ten (10) days prior to the Contractor's request to the Owner to withhold no more retainage under the terms of 13-10-2.

f) Conditions for the reduction of retainage from 10 percent to no retainage are:
   1. The work is not behind schedule as determined by the Engineer only, from the Architect approved, time scaled CPM schedule with monthly anticipated progress payment amounts submitted at or before the Pre-construction meeting.
   2. The work is being performed in a satisfactory manner in compliance with the Drawings and Specifications as determined by the Engineer.
   3. There are no outstanding claims or liens on the property. Contractor shall submit, with pay request, a lien release form for each subcontractor requesting payments these lien release forms shall be properly notarized.
   4. Further payments, with total compliance of B.1, B.2 and B.3 shall be made in the amount of 100% of the value of the labor and/or materials incorporated in the work and of materials suitably stored at the site thereof unless:

a. The percentage of work complete falls behind the percentage required by the construction progress schedule, as described in B.1 by as much as 10%; or
b. The work is being performed in an unsatisfactory manner and/or non-compliant with the Drawings and Specifications as determined by the Engineer; or
c. There are outstanding claims or liens on the property.
d. In which event or events, the Owner shall reinstate the 10% retainage on all periodical payments to be paid while one or more of the events continue to exist. The Contractor shall be given written notice, by the Engineer, of the reinstatement of the retainage. If the Contractor's actual progress becomes more than 10% behind the Contractor's anticipated progress, as described in Item 9.6.6.1.a. the Engineer may direct the withholding of payments to the Contractor in amounts equal to the percentage behind the Contractor's anticipated progress, in addition to the 10% described in all Items of Article 9.

5. If the Contractor recovers all lost time and puts the work back on schedule (0% behind schedule) per schedule described in 9.6.6.1.a. and remedies all breaches of 9.6.6.2.b and 9.6.6.2.c further payments shall be as described in 9.6.6.2; unless Items 9.6.6.1.a or 9.6.6.2.b and 9.6.6.2.c recur in which event or events the Owner shall reinstate Item 9.6.6.3.

VIII. ARTICLE 11 - INSURANCE AND BONDS

A. 11.1.2: The insurance required by shall be written for not less than any limits of liability listed below or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations under paragraph 3.18. The Contractor agrees that, prior to the beginning of any work by the Contractor or any Subcontractor, as the case may be, he (the Contractor) will furnish the following to the Owner for himself, and will obtain, and retain in his files for the duration of the construction period, like certificates for each Subcontractor. Certificate from insurance company showing coverage of Workmen's Compensation Insurance for the State of Georgia or a certificate from Georgia Workmen's Compensation Board showing proof of ability to pay compensation directly. Certificate from insurance company showing coverage for the Contractor for the following:
   1. Contractor's Protective and Public Liability Insurance: Taken out in the name of the Contractor.
   2. Personal Injury, including death - minimum limits of $500,000 for each person and $1,000,000 for each accident.
   3. Property Damage, minimum limits of $300,000 for each accident and $500,000 for aggregated of operations.
   4. Disposition: Certificate of Insurance must be sent to Engineer prior to commencement of work. See following for endorsement required on this certificate.

B. 11.1.3: Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the work. These certificates shall contain a statement on every policy or certificate, as the case may be, that "The insurance company agrees that Policy No._____shall not be canceled, changed, or allowed to lapse until ten (10) days after the Owner and Engineer have received written notice as evidenced by return receipt of registered letter".

C. 11.1.1.8: Liability insurance shall include all major divisions of coverage and shall be on a comprehensive form including:
   1. Premises - Operations
   2. Independent Contractor's Protective, for Owner and Contractor
   3. Products and Completed Operations (in force for one year beginning at Date of Substantial Completion)
   4. Contractual - including specified provisions for the Contractor's obligations under Paragraph 3.18.
   5. Owned, non-owned, and hired motor vehicles
   6. Broad form coverage for property damage
   7. Explosion and collapse hazard
   8. Underground hazard

D. 11.3: The Contractor shall purchase and maintain property insurance upon the entire work at the site, to the full (100%) insurable value thereof. This insurance shall include the interest of the Owner and the Contractor in the work and shall insure against the perils of fire, extended coverage, and shall include "all risk" insurance for physical loss or damage including, without duplication of coverage, theft, vandalism, and malicious mischief.

E. 11.4.1: Contractor shall furnish both a Performance Bond and a Payment Bond, each in the amount of 100% of the Contract Sum, unless otherwise directed by the Engineer. Contractor shall also provide both Performance Bond and Payment Bond for his major subcontractors, including HVAC, electrical, plumbing, roofing, and sprinkler. The sureties must be authorized to do business in the State of Georgia and listed on "Department of the Treasury Circular 570". In addition, companies furnishing bonds shall have an A.M. Best Company rating of at least a Class "A" with a financial size of VI or better. Bonds must be accompanied by letter stating company's current rating for verification prior to acceptance by the Owner and execution of the formal Owner/Contractor agreement.

IX ARTICLE 13 - MISCELLANEOUS PROVISIONS

A. 13.5.3: When initial tests indicate non-compliance with the Drawings and Specifications, all subsequent retesting caused by the non-compliance shall be performed by the same testing laboratory and the costs thereof will be deducted by the Owner from the contract sum.

1. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.
2. All specimens and samples for testing, unless otherwise provided in these Drawings and Specifications, will be taken by the testing laboratory. All sampling equipment and personnel will be provided by the testing laboratory and all deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

End of Section

SECTION 00 802

NOTICE OF COMMENCEMENT

Public Works

To: Clerk of Superior Court of Gwinnett County, Georgia

Pursuant to O.C.G.A. 36-82-104(f), not later than 15 days after physically commencing work, the undersigned gives Notice of Commencement of a public work including the following information:

1. "McMillan Road Stormwater Improvements Project" in the City Limits of Dacula, Georgia.

2. Name and address of the state, country, municipal corporation, or public board or body thereof which is doing the public work:

   City of Dacula
   P.O. Box 400
   Dacula, Georgia 30019

3. Name and address of the surety for the performance and payment bonds, if any:

   _____

4. Name and address of the holder of the security deposit provided pursuant to O.C.G.A. 13-10(b)(2)(B), if any: N/A

   Contractor

   Date

These documents must be filed with the Clerk of the Superior Court for the County in which the public work is located, and a copy of this document must be posted at the public work site not later than 15 days after the Contractor physically commences work on the public work.

Within ten (10) calendar days of receipt of a written request, give a copy of this Notice of Commencement to any subcontractor, materialman, or person making the request.

End of Section

SECTION 00 900

ADDENDA AND CLARIFICATIONS

PART 1 - GENERAL

1.1 The following changes have been incorporated in the Construction Documents dated _____ (Released for Construction).

a. Addendum No. 1, dated _____, 2022.

b. Addendum No. 2, dated _____, 2022.

c. Addendum No. 3, dated _____, 2022.

Copies of these documents are included herein.

PART 2 - N/A

PART 3 - N/A

End of Section

PROJECT SCOPE OF WORK
& PERFORMANCE SPECIFICATIONS
FOR
"McMillan Road Stormwater Improvements Project"

PART 1 - GENERAL

1.1 SCOPE OF WORK

The Work to be completed for this Project consists of the following:

A. **BASE BID –**

The Work to be completed for this Project consists of furnishing all labor, materials, earthwork, construction operations, details, supervision and coordination of all trades, utility suppliers, governmental inspections, and approvals to complete the construction, installation, and coordination for the City of Dacula "McMillan Road Stormwater Improvements Project" as follows:

The City is having issues with the existing storm pipe and structures holding stormwater and ponding out into McMillan Road near proposed JB 1-H. In order to alleviate this issue, the Scope of Work will include demolishing the existing storm sewer system from proposed JB 1-I downstream to the creek through the City's adjacent property. An entire new Storm Sewer Outfall System will be installed in its place. The existing pipes have been TV inspected with varying results. The storm line upstream of JB 1-H is holding stormwater up to the existing grate inlet at the northwest corner of Winder Hwy. and McMillan Road. The Contractor shall excavate and replace the existing pipe crossing underneath McMillan Road and replace with new RCP culvert and junction box adjacent to building or where buried junction box is located. Contractor will then investigate and cleanout the existing 36" RCP Box Culvert which appears to cross underneath the corner of the existing building. The existing grate inlet at northeast corner of Winder Hwy. and McMillan Road will need to be reconstructed and top made accessible with steps for access and clean out of downstream pipe. Contractor will also cleanout existing 24" RCP storm sewer line extending north from proposed JB 1-H underneath Winder Hwy. and Railroad to upstream headwall adjacent to Hebron Church Road.

The Demolition scope also includes removing all asphalt pavement along McMillan Road from right-of-way of Winder Hwy. south to limits of removal as illustrated on the Drawings. The remainder of McMillan Road from the removal limits to the 4-Way Stop at Church Street will be milled and repaved. A deep patch milling detail is included if any pavement areas need additional repair. The City's adjacent lot which is currently fenced can be used as a laydown area for construction. At end of construction, Contractor shall remove all existing pavement within the fenced limits and fine grade area to drain to new storm sewer weir inlets and stream buffer. Fence will need to be disassembled and stored until construction is complete and then reinstalled by the Contractor.

A new storm sewer outfall line and structures will be installed along McMillan Road and extend west down along the outside of the stream buffer until it can be discharged into the stream buffer as illustrated on the Drawings. A new junction box (JB) will be installed on the east side of McMillan Road adjacent to the existing building where the existing 36" RCP Box Culvert ties into the 30" RCP culvert running underneath McMillan Road. This new JB will be installed where the Contractor uncovers the buried existing junction box or as illustrated on the Drawings to provide access to cleaning out the existing 36" RCP Box Culvert.

A new 36" RCP culvert will be installed underneath McMillan Road from JB 1-I to JB 1-H; then a 48" HDPE storm line and structures will be installed behind the existing utilities running along the west side of McMillan Road. McMillan Road will be regraded from Winder Hwy. right-of-way limits south to a new low which is created farther away from Winder Hwy. Curb & Gutter will be installed along the west side of newly regraded McMillan Road. A new Double Wing Catch Basin (DWCB 1-F.1) will be installed to drain stormwater from this low point with a 24" HDPE pipe installed to drain stormwater to outfall storm sewer at JB 1-F.

The remaining 48" HDPE storm outfall sewer will extend south to the stream buffer and turn west at JB 1-E and then continuing draining till it discharges into stream buffer at Headwall (HW 1-A). Contractor shall minimize disturbance within stream buffer and limit grading and disturbance operations to pipe, headwall, riprap installation only.

In addition, McMillan Road at limits of regrading near existing low point at stream crossing shall be milled and repaved as illustrated on the Drawings up to the 4-Way Stop at Church Street. Contractor shall document all existing striping and replace in-kind including but not limited to "Railroad Ahead" striping, stop bars, double centerline striping, and parking lot lines. Install eight (8) new concrete curb stop blocks at parking spaces to prevent damage to building. Existing DWCB's and storm pipe at low point near stream crossing shall be cleaned out and paved inverts installed to drain. Existing HDPE pipe and French Drain draining into existing DWCB on west side of McMillan Road near Station 3+10 needs to be cleaned out and/or replaced to drain low point area behind DWCB and existing house.

McMillan Road shall be repaved with Heavy Duty Pavement Section. Parking area adjacent to McMillan Road and Building shall be repaved with Standard Duty Pavement Section. Milled areas shall be milled 2.5" unless a deep patch section is needed (to be approved by Owner prior to additional milling and paving) and then repaved with tack coat, 1" of 'D' Mix Asphalt Binder Course, and 1-1/2" Type 1 - 'F' Mix (9.5 mm) Asphalt Surface Course. All new pavement repair shall have smooth transition with adjacent existing asphalt.

Erosion, Sedimentation, and Pollution Control Measures are part of the Contractor's Scope of Work. BMP's shall be installed on all existing and new storm inlets as well as Double Row Type 'C' Silt Fence along Stream Buffer. See Drawings for all BMP's to be installed.

All disturbed areas will be permanently grassed with Erosion Control Matting and permanent Bermuda Seed. Any disturbance adjacent to or within a homeowner's front yard shall be

permanently stabilized with Bermuda Sod. Removal of all vegetation and trees within limits of work shall be included in Contractor's overall Bid unless otherwise illustrated on the drawings. Traffic access to streets and private driveways shall remain open at all times unless approved by the Owner. If road closure is granted, then Contractor shall provide Traffic Control Plan and all detour signage required in his overall Bid.

All earthwork quantities for grading, pipe bedding, and backfill whether haul-in and/or haul-off are the responsibility of the Contractor to include in their Lump Sum Bid in order to complete the Scope of Work at no additional cost to the Owner. All quantities and measurements are approximate. Contractor shall visit the Site and determine his own quantities for bidding this project.

Contractor shall include in their Base Bid all costs for adjusting and relocating any water and gas services lines, meters, or valves impacted by new storm line installation in order to complete the scope of work as described by the Contract Documents and Drawings. Contractor shall coordinate with utility companies and relocate utilities as required to install new improvements. Contractor must be qualified with Gwinnett County in order to perform water line installation, relocation and repairs.

One lane of traffic and access to residential/commercial driveways must be maintained at all times unless road closure is granted by the City as stated above. Traffic Safety devices such as signage, barricades, etc., and the protection of the public-at-large, and the Contractor's personnel is part of this contract and is the Contractor's sole responsibility. The Contractor will have *Ninety (90) consecutive calendar days* from the "Notice to Proceed" to finish and complete the project.

All materials and appurtenances required to complete this Scope of Work is the responsibility of the Contractor and shall be provided in his overall Bid. The Contractor must be an approved Contractor with the City of Dacula and/or Gwinnett County. A complete list of materials should be included in the Contractor's overall Bid.

Bidder will prepare Asphalt prices for bid based on the current GDOT Asphalt Cement Price Index listed at the time of bid opening. The successful Contractor's pay request will list the current GDOT Asphalt Cement Price Index at the time of purchase. The difference in price between the GDOT Asphalt Cement Price Index at bid and at purchase will either be a change order to the Contractor or a Credit to the Owner. The GDOT Asphalt Cement Price Index is in accordance with Special Provision 109 (dated 2008), Section 400.5.01 Adjustments, the asphalt price index for the month of the Letting posted on the Georgia Department of Transportation Website.

Additional items within Scope of Work

A. Contractor and subcontractors must make a site visit to determine the exact nature and scope of the work to be done. Contractor is responsible for hauling off all demolition materials (existing pipe, concrete, asphalt, etc.) to a State approved disposal facility at

no additional cost to the Owner. Contractor shall tie in and feather new asphalt into existing asphalt so that there is a smooth transition.

B. If any unforeseen sub-grade conditions arise the Contractor shall immediately notify the Owner and/or Owner's representative before proceeding with any work to determine the course of action. The Contractor shall have a Geotechnical Engineer (who will be selected by the Contractor and approved and paid for by the Owner) qualify and quantify the areas and determine the method of sub-grade repair in coordination with the Owner and/or Owner's Representative on a case-by-case basis.

C. The limits of work for this project are limited to that area within the right-of-way of City of Dacula and City owned property in order to perform the paving and storm sewer drainage pipe and structure installation as described by scope of work in the Contract Documents.

D. Contractor is responsible to locate horizontally and vertically all existing utilities within limits of disturbance and protect throughout duration of project. Utilities which are present include water, gas, electrical, CATV, AT&T, etc., but may not be limited to these within the limits of disturbance. All existing utilities shall be located and protected from damage by the Contractor.

E. Contractor shall have a Site Superintendent on-site at all times while work is in progress to monitor, direct, and control construction activities. Superintendent in-charge shall be available to City, Engineer, and adjacent property owners to answer or direct questions concerning the project.

1.3 MEASUREMENT AND PAYMENT

A. Furnish unit prices with quantity breakdowns of all items of construction per Section 00 100, Instruction for Bidders and Section 00 300, Bid Proposal Form.

B. Furnish unit prices with quantity breakdowns of all items for the Erosion Control Maintenance of the project site.

C. Contractor will note that any quantities called out in the Scope of Work, Bid Documents, and/or Drawings are approximate. Contractor shall calculate and verify his own quantities used to formulate his bid. Contractor shall verify all measurements and lengths to all quantities required to complete the scope of work and asphalt repaving work.

PART 2 - PRODUCTS – N/A

PART 3 – EXECUTION – N/A

3.1 PAVING

A. The City of Dacula's Engineer or designated representative shall have access at all times to all parts of the material producing plants for checking the mixing operations and materials and the adequacy of the equipment in use.

B. The Contractor is responsible for maintaining the existing pavement alignments, grades, elevations and cross sections as represented by existing roadway conditions.

C. Submittals shall be in accordance with the Georgia Department of Transportation, Standard Specifications for Construction of Transportation Systems 2021 and shall include aggregate source, gradation, soundness loss, percentage of wear, and other tests required by the DOT.

D. Contractor shall submit a Job-Mix Formula per the requirements of the Georgia Department of Transportation, Standard Specifications for Construction of Transportation Systems 2021. Paving specifications as described below in Part 3.1 item J shall be used.

E. Paving equipment, weather limitations, Job-Mix Formula, mixing, construction methods, compaction, finishing, tolerances, and protection shall conform to the requirements of the appropriate sections of the Georgia Department of Transportation, Standard Specifications for Construction of Transportation Systems 2021 for the type of materials specified.

F. Contractor to ensure that stormwater will not pond in roadway, driveways, or on adjacent shoulders or landscaped areas.

G. After demolition and removal of the existing pavement and base materials, if required, the earth sub-grade shall be proof-rolled in the presence of the Owner and/or Owner's representative to determine the stability and adequacy of the earth base before proceeding with any repaving operations. The earth sub-grade and the GAB base are to be proof-rolled separately. Sections of earth sub-grade and/or GAB base failing to pass the respective proof-roll test shall be replaced and/or re-compacted and may require testing by a Geotechnical Engineer if requested by the Owner or the Owner's Representative, only if required.

   Proof-rolling (if required):

   1. After demolition operations, the Project area shall be proof-rolled in the presence of the Owner's Representative. A Geotechnical Engineer will be selected by the Contractor and approved by the Owner for this project and paid by Owner to perform geotechnical and materials testing services for the project if required.

2. Proof-rolling shall consist of a minimum of four (4) complete overlapping passes in each of two perpendicular directions with a heavily loaded 18-20 ton dual tandem dump truck.

3. Proof-rolling shall be performed in the presence of the Owner's Representative.

4. Any soft or unstable sub-grade soil conditions observed shall be identified for qualification and quantification by the Geotechnical Engineer.

5. Any soft or yielding areas shall be thoroughly undercut and replaced with well-compacted structural fill. Areas shall be compacted 95% Standard Proctor with the top twelve (12") inches compacted to 98% Standard Proctor Density or as specified by the Geotechnical Report.

H. Contractor shall be responsible for providing all equipment necessary to perform proof rolling operations of earth sub-grade, GAB base, and/or existing asphalt, if required.

I. Transition between new and existing sections of asphalt shall be flush and smooth. Any elevation difference shall be made up with additional asphalt surface course material.

J. Placement of Asphaltic Paving Materials shall be as follows:

1. Spread material in a manner which requires the least handling.

2. Where thickness of finished paving will be 3 inches or less, spread in one layer.

3. After material has been spread to proper depth, roll until the surface is hard, smooth, unyielding, and true to the thickness and elevations as determined by Owner's Representative.

4. Roll in at least two (2) directions until no roller marks are visible.

K. Finished paving smoothness tolerance:

1. No depressions which will retain standing water. Contractor will ensure that stormwater will not pond in roadway, driveways or on adjacent shoulders or landscape areas.

2. No deviations greater than 1/8 inch in six feet.

L. All existing utility structures will be adjusted to fit flush with street surface 24 hours after resurfacing is completed in accordance with the City of Dacula Standards.

3.2 MAINTAINING TRAFFIC

A. Sections of newly finished pavement and patching areas shall be protected from traffic until the traffic will not mar the surfaces or alter the surface textures.

B. All traffic control and detouring equipment, methods and techniques shall conform to the latest edition of the M.U.T.C.D. and all supplements thereto.

C. Maintain one (1) lane (12’ wide minimum for school bus access) open at all times.

D. Maintain local traffic access to all streets, intersections and private driveways during construction period and at all times. Contractor shall not perform any work that will impact the flow of traffic without approval of Owner's Representative.

E. Contractor shall take necessary precautions to secure the construction sites to maintain a safe environment for the public.

F. Contractor, vendors and all sub-contractors shall observe speed limits at all times.

3.3 EROSION CONTROL

A. Install and maintain a comprehensive system of Soil Erosion Control measures throughout the duration of the projects in conformity with the “Manual for Erosion and Sediment Control in Georgia”, 6th Edition, 2014 by the Georgia Soil and Water Conservation Commission and any supplements thereto.

B. Contractor shall contain all soil erosion from the construction areas. Erosion control measures are required for any disturbed areas not covered by pavement or sidewalk areas.

C. Erosion control includes, but is not limited to Rip Rap, Temporary and Permanent Grassing. Other BMP’s may include Temporary Sediment Traps “F’ (w/ filter fabric) and “P” (pigs-in-blanket). Temporary Grassing and Permanent Grassing is required where Contractor disturbs any area outside limits of sidewalk and pavement. Bermuda Sod shall be replaced for all disturbed areas.

3.4 CLEAN-UP

A. Contractor shall remove all debris, rubbish, and excess material from the work sites.

B. Areas along roadways will be dressed, grassed, and mulched.

C. All excess material from demolition and/or construction activities will be hauled off and legally disposed of.

3.5 GUARANTEE

A. Contractor shall guarantee all improvements from material and/or craftsmanship defects for a period of one (1) year from date of final acceptance of Work.

End of Section

SECTION 01 370

APPLICATION FOR PAYMENT

PART 1 - GENERAL

1.1 Contractor shall submit Application and Certification for Payment in format ***similar*** to that of the AIA Document G702 and the AIA Document G703, Continuation Sheet. (Example formats are hereby made a part of these documents. (Exhibits follow)

1.2 Once contractor has submitted weekly payrolls and Section 3 reports in accordance with Davis-Bacon requirements and any other paperwork required by CDBG and received approval of same, and submitted the Application for Payment, then the City will remit payment to Contractor within thirty (30) days.

PART 2 - PRODUCTS – N/A

PART 3 - EXECUTION – N/A

End of Section

APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER:

PROJECT:

APPLICATION NO.:
PERIOD TO:
PROJECT NOS.:

Distribution to:
☐ OWNER
☐ ARCHITECT
☐ CONTRACTOR
☐ ENGINEER
☐

FROM CONTRACTOR:

VIA ENGINEER:

CONTRACT DATE:

CONTRACT FOR:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.

1. **ORIGINAL CONTRACT SUM** . . . . . $_____
2. **Net change by Change Orders** . . . . . $_____
3. **CONTRACT SUM TO DATE** (Line 1 ± 2) . . . . . $_____
4. **TOTAL COMPLETED & STORED TO DATE** . . . . . $_____
   (Column G on G703)
5. **RETAINAGE:**
   a. _____% of Completed Work $_____
   (Columns D + E on G703)
   b. _____% of Stored Material $_____
   (Column F on G703)
   Total Retainage (Line 5a + 5b or
   Total in Column I of G703) . . . . . $_____
6. **TOTAL EARNED LESS RETAINAGE** . . . . . $_____
   (Line 4 less Line 5 Total)
7. **LESS PREVIOUS CERTIFICATES FOR PAYMENT**
   (Line 6 from prior Certificate) . . . . . $_____
8. **CURRENT PAYMENT DUE** . . . . . $
9. **BALANCE TO FINISH, INCLUDING RETAINAGE**
   (Line 3 less Line 6) $_____

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month		
TOTALS		
NET CHANGES by Change Order		

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of:
County of:
Subscribed and sworn to before
me this day of

Notary Public:
My Commission expires:

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED . . . . . $_____

(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

ENGINEER:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CONTINUATION SHEET

(Instructions on reverse side)

APPLICATION AND CERTIFICATE FOR PAYMENT,
containing Contractor's signed Certification, is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO.:
APPLICATION DATE:
PERIOD TO:
ENGINEER' PROJECT NO.:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C − G)	RETAINAGE (IF VARIABLE) RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					

SECTION 01 400

QUALITY CONTROL

PART 1 - GENERAL

1.1 ON SITE OBSERVATIONS

A. All work and materials shall be subject to review by Owner's Representative and Owner.

B. Contractor shall fully cooperate and shall furnish all reasonable facilities for the inspections of all parts of the work during the entire construction period.

1.2 TESTING SERVICES

A. All materials upon which the strength and durability of the work may depend, shall be subject to inspection and testing to establish conformance with City of Dacula and Georgia D.O.T. Standards. Contractor shall submit Asphalt Pavement Job Mix Formulas to Owner's Representative for review prior to installation of paving courses.

B. A Geotechnical Engineer will be selected by the Contractor and approved by the Owner and paid by the Owner, to perform geotechnical and materials testing services for the project. The Contractor will retain the services of the Geotechnical Engineer, only if required. Subgrade operations are not intended to be part of the scope of this project.

C. It is the responsibility of the Contractor to implement the services of the testing company by ordering those services at the appropriate time in the work, as described below, if required. The Contractor must provide at least 24 hours notice to the testing company for required testing work. Failure to provide adequate notification may result in the requirement for more complex after-the-fact testing, for which the Contractor will be liable.

D. Testing required under Paragraphs 1.3 A and 1.3 B are to be coordinated by and paid for by the Owner, to be witnessed by the appropriate local inspection agencies as well as by Owner's Representative. The Contractor will secure and maintain evidence of having completed and obtained successful results for those tests, to be transmitted to the Owner and Owner's Representative no later than twenty-four (24) hours by hand written draft, faxed or emailed; and fifteen (15) days for each report following testing.

1.3 SUMMARY OF REQUIRED NOTIFICATIONS

A. Contractor's Geotechnical Engineer shall monitor subgrade demolition/preparation and shall observe all compaction, proof rolling, paving operations, and concrete

pouring for curb & gutter, only if required. Contractor shall notify Owner and Owner's Representative at least 24 hours in advance of any proof rolling, paving and/or concrete pouring operations.

B. Proof rolling, if required by Owner:
   1. After milling operations, a portion of the Project area shall be proof rolled as directed by the Owner. This shall be done for portions indicated by the Owner and for all other subgrade issues if they arise. If problems are encountered it will be the Contractor's responsibility to call in the Contractor's Geotechnical Engineer.
   2. Proof rolling shall consist of a minimum of four (4) complete overlapping passes in each of two perpendicular directions with a heavily loaded 18-20 ton dual tandem dump truck.
   3. Proofrolling shall be performed in the presence of the Owner and Owner's Representative.
   4. Any soft or unstable sub-grade soil conditions observed shall be identified for qualification and quantification by the Geotechnical Engineer.
   5. Any soft or yielding areas shall be thoroughly undercut and replaced with well-compacted structural fill. Areas shall be compacted 95% Standard Proctor with the top twelve (12") inches compacted to 98% Standard Proctor Density or as specified by the Geotechnical Report.

C. Material to be placed in a qualified manner as defined by the Contract Documents shall be tested to confirm that the required conditions are met. The testing shall also indicate the type of material observed, the location of the test, the material moisture content and the current weather. Delivery and compaction of material shall be made during the presence of the testing company's representative and shall be subject to his approval. The inspection by no means absolves the Contractor from responsibility of compaction as specified.

D. Unless material is covered with finish surfaces (paving) immediately following procedures described in B2 and B3 above, the material shall be observed by Owner's Representative again prior to the placement of those finished surfaces. The purpose of this final review is to preclude deterioration of the required conditions from continuing construction, water, or similar causes.

1.4 CODE COMPLIANCE TESTING

A. Inspections and tests required by codes or legal ordinances, or by plan approval authority, shall be the responsibility of the Contractor, unless otherwise provided in the Contract Documents.

1.5 CONTRACTOR'S CONVENIENCE TESTING

A. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

End of Section

SECTION 01 500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1. SCOPE

   A. Construction facilities and temporary controls required for this work to be provided by Contractor, include, but are not necessarily limited to:
      1. Traffic control signs, barrels, barricades where needed.
      2. Parking of construction equipment and storage of materials.
      3. Parking of construction personnel vehicles.

2. PROTECTION

   A. Use all means necessary to maintain construction facilities and temporary controls in proper and safe conditions throughout progress of work.

3. REPLACEMENTS

   A. In event of loss or damage, Contractor shall immediately make all repairs and replacements necessary to construction facilities and temporary controls to Engineer's satisfaction at no additional cost to Owner.

4. UTILITY HOOKUP

   A. All fees for temporary utility tie-ins, if required will be Contractor's responsibility.

PART 2 - PRODUCTS

1. CONTRACTOR'S STAGING AREA

   A. The location of construction equipment and materials storage shall be determined at the pre-construction conference. Contractor shall confine his storage therein and take necessary precautions to protect materials from all forms of damage and theft as a part of this work.

2. TEMPORARY UTILITIES

   A. Contractor shall furnish water, gas, electricity and telephone service as required during construction and extend temporary service lines to construction areas for use of all subcontractors and Owner's forces, if required.

B. Temporary Water
   1. Provide ample supply of potable water for all purposes of construction at access points convenient to personnel, if required.
   2. Provide sufficient heavy duty hose or PVC pipe to carry water to every required part of construction and allow use of water facilities to subcontractors engaged on work.

C. Temporary Electricity *(For Construction Trailer - if required)*
   1. All temporary electrical facilities shall be constructed and maintained in accordance with the Division of Industrial Safety "Electrical Safety Orders" (ESO), the Public Utilities Commission "Rules for Overhead Line Construction" (G.O. 95). Materials, devices, and equipment used for these facilities shall be in good and safe condition but need not be new.
   2. Installation of lighting and safety lights shall be in accordance with local, State and Federal applicable codes.
   3. Run a copper ground wire, sized in accordance with NEC, in conduit run, and bond to all steel parts, using clamps acceptable to the NEC.
   4. Any attachment of conduit to wood structure shall be by means of bolts or lag screws in shear. All supports shall be capable of supporting four times actual load.
   5. Contractor is required to make application for temporary electric service and pay for costs for electric energy used during the course of construction and until final acceptance of work by Owner.

D. Telephone *(For Construction Trailer - if required)*
   1. Contractor shall maintain telephone in field office for use of Engineer and Owner. All expenses shall be paid for by Contractor.
   2. Contractor shall provide and pay for the telephone installation and service in the field office. Service shall be maintained for duration of project operations under this contract. Contractor shall provide 110 dB outside gongs or horns so that telephones may be heard throughout construction site, or contractor shall provide and install an electronic telephone answering machine.
   3. Contractor shall provide and install an electric fax machine with a dedicated line for 24-Hour service within the temporary field office.

3. SANITARY FACILITIES

A. Provide proper, adequate, sanitary facilities for use of all workers employed on project, in accordance with State and Local Health Departments.

4. TEMPORARY CONSTRUCTION, EQUIPMENT, AND PROTECTION

    A. Provide, maintain, and remove upon completion of work, all temporary equipment, barricades, lights, and all other protective structures or devices necessary for safety of workers and public property as required to complete all work of this contract.

    B. Provide all necessary protection and all barricades conforming to the standards of O.S.H.A. and requirements of Gwinnett County and City of Dacula.

    C. Contractor shall provide all measures necessary to protect equipment and materials at his own expense.

    D. Protect all workers and equipment from power lines and maintain safe distances and protective devices as required by Industrial Safety Commission.

    E. All temporary construction and equipment shall conform to all regulations, ordinances, laws and other requirements of City, County, State and other authorities having jurisdiction, including owner's and contractor's insurance companies, with regards to safety precautions, operation, and fire hazard.

    F. Protect work and materials to be used on project including materials which have had their title transferred to the Owner, from damage or loss due to elements, theft, vandalism, malicious mischief, or other causes. Contractor shall be held responsible for such damages or losses which he shall remedy at his expense.

5. PARKING OF VEHICLES

    A. Contractor shall assume all responsibility for parking of his equipment, vehicles and his subcontractor’s vehicles. "Job site parking" means an area or areas within the bounds of the property or other authorized areas to be used for parking for vehicles associated with this project. Such areas shall be designated at the preconstruction meeting.

PART 3 - EXECUTION

1. MAINTENANCE AND REMOVAL OF FACILITIES

    A. Maintain all construction facilities and temporary controls as long as needed for safe and proper completion of work.

    B. Remove all such temporary facilities and controls as rapidly as progress of work will permit or as directed by Owner, but prior to final completion.

End of Section

SECTION 01 630

PRIOR APPROVALS AND SUBSTITUTIONS

PART 1 - GENERAL

1. PRODUCTS

A. Products are specified by ASTM and/or other reference standard, and/or by manufacturer's name and model number or trade name. When specified only by reference standard, Contractor may select any product meeting this standard by any manufacturer. When several products or manufacturers are specified as being equally acceptable, Contractor shall have the option of choosing among those names. When one manufacturer's specific product is specified and other manufacturers are listed as being acceptable suppliers, the other manufacturer's products must have the same basic properties as the specific product mentioned. When specifications indicate "Similar products shall be subject to Engineer's review", this refers to review during bidding only. Otherwise, the following substitution provisions must be observed in order to use any manufacturer not listed.

2. REQUESTS FOR PRIOR APPROVAL

A. During bidding, the Engineer shall consider written requests for prior approval received at least ten (10) calendar days prior to bid date. Requests received after that time shall not be considered. If proposed prior approval is accepted by Engineer and approved by Owner, such acceptance shall be set forth in an addendum. Bidders shall not rely upon accepted prior approvals made in any other manner.

3. SUBSTITUTIONS

A. After receipt of Bids and prior to award of Contract, substitutions may be negotiated. However, Contractor shall be required to provide a substitution form for any change to the original bid documents before it will be incorporated into the contract documents.

B. After the date of the Contract, Engineer may consider formal requests from Contractor for substitution of products in lieu of those specified. Requests shall be submitted in accordance with the preceding requirements. One or more of the following conditions must also be documented as reason for substitution.
   1. The substitution is required for compliance with code requirements.
   2. The substitution is required because of the unavailability of the specified product.

3. The substitution is required since new information discloses the specified products will not perform properly or fit into the designated space.
4. The substitution is required since the manufacturer or fabricator refuses to certify or guarantee performance of the specified product as required.
5. The substitution is required since it is clear, in the judgment of the Engineer, that a substitution would be substantially in Owner's best interests in terms of cost, time and/or other considerations.

C. With each request for substitution Contractor shall include the following:
   1. Complete data substantiating compliance of proposed substitution with contract documents including:
      a. Product identification, including manufacturer's name and address.
      b. Manufacturer's literature, including product description, performance and test data, and reference standards.
      c. Name and address of similar projects on which product was used and date of installation.
   2. Itemized comparison of proposed substitution with product or method specified, noting any variance from the specified product which may result in inferior appearance, performance or installation complication.
   3. Information relating to changes in construction schedule.
   4. For requests submitted after bids are received, accurate cost data on proposed substitution in comparison with product or method specified, including any adjustment to the contract sum that will be provided if the substitution is accepted.

D. In submitting requests for substitution, Contractor shall make the following personal representations:
   1. Contractor has investigated proposed product and has determined that it is equal or superior in all respects to the specified product.
   2. Contractor will provide an equal or better guarantee for proposed substitution as compared to the product specified.
   3. Contractor will coordinate installation of accepted proposed substitution into the project, making any such changes as may be required for the project to be completed in accordance with the Contract Documents.
   4. Contractor waives all claims for additional costs related to proposed substitution which became apparent during or following substitution submittal process.
   5. Cost comparison data is complete and includes all related costs under the contract, but does not include:
      a. Cost under separate contracts.
      b. Engineer's/Consultant's redesign fee.
   6. The proposed substitution satisfies Code Official's interpretations of all applicable codes.

E. Substitutions shall not be considered if:
   1. They are indicated or implied on shop drawings or product data submittals without a formal request submitted in accordance with this Article.
   2. Acceptance will require substantial revision of contract documents.

End of Section

REQUEST FOR PRIOR APPROVAL

PROJECT: _____ DATE SUBMITTED: _____

CONTRACTOR: _____ BID DATE: _____

SUB CONTRACTOR: _____ SUPPLIER: _____

SPEC SECTION: _____ PARAGRAPH: _____ TITLE: _____

PRODUCT SPECIFIED	PAGE NO.	PRIOR APPROVAL PRODUCT
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10._____	_____	_____

1. The following required information is attached:

   A. Product identification manufacturer's name, address, telephone number.
   B. Manufacturer's literature, performance/test data, reference standard.
   C. Name/address of similar projects where product has been used and Date of Application.

2. Comparison of proposed substitute product with specified product:

   A. Differences: _____

   B. Effect on dimensions or other trades: _____

3. Comments: _____

BY : _____

_____

REQUEST FOR SUBSTITUTION AFTER BID

PROJECT: _____ DATE SUBMITTED: _____

CONTRACTOR: _____ BID DATE: _____

SUB CONTRACTOR: _____ SUPPLIER: _____

SPEC SECTION: _____ PARAGRAPH: _____ TITLE: _____

1. The following required information is attached:

   A. Product identification, manufacturer's name, address, telephone number

   B. Manufacturer's literature, performance/test data, reference standard

   C. Name/address of similar projects where product has been used and Date of Application

2. Comparison of proposed substitute product with specified product:

   A. Differences: _____

   B. Effect on dimensions and trades: _____

3. Data related to changes in construction schedule:

   _____

   4. Accurate cost data on proposed substitution in comparison with product specified:

   _____

5. Reason for request for substitution: (Check One)
   1) _ Specified product will not meet code.
   2) _ Specified product unavailable for purchase.
   3) _ Specified product will not perform or fit as required.
   4) _ Manufacturer will not provide required certification or guarantee for specified product.
   5) _ Substitution is clearly in Owner's best interest in terms of cost or schedule.
   6) _ Substitution is proposed as a convenience to the Contractor, and the Contractor agrees to compensate the Architect for time involved in reviewing and processing the proposed substitution.

End of Section

SECTION 01 700

CONTRACT CLOSE-OUT

PART 1 - GENERAL

1. CLOSE-OUT TIMING

A. Owner's Representative shall issue the Certificate of Substantial Completion when he has determined that the work or a designated portion thereof is substantially complete. Contractor shall then prepare, assemble, and transmit the items as listed in Section 1.2 below to Owner's Representative for review and transmittal to Owner. Unless additional quantities are specified elsewhere, submit all items in duplicate.

B. As-built documents and other close-out requirements shall be submitted (or performed) and accepted by Owner's Representative prior to date of final completion. All close-out documents shall be submitted to Owner's Representative simultaneously. Piece meal delivery of separate elements of the documents will not be acceptable and will be returned to Contractor.

C. All close out requirements must be complete before submittal of final Application for Payment, including completion of unfinished work.

2. PUNCH LIST

A. When the project is substantially complete, Contractor shall notify Owner's Representative in writing at least five (5) days before the date of request for punch list inspection. Contractor shall arrange for the presence of all subcontractors whose work is involved, if required by Owner's Representative.
   1. Owner and/or Owner's Representative shall prepare a "Punch List" as a convenience to Contractor for items not completed and work not meeting the requirements of the Contract Documents. The "Punch List" is not to be construed to be a final or complete listing of project requirements, but is intended only to assist in the completion of the project. Contractor shall make a diligent effort to complete all work in conformance with the requirements of the Contract Documents before requesting a "Punch List".
   2. Correction of items noted on the "Punch List" does not relieve Contractor from conforming to all requirements of the Contract Documents.

B. Contractor shall furnish three copies of the following:
   1. Consent of Surety for final payment.
   2. Final application for payment.
   3. Contractor's Statutory Affidavit ensuring no liens.
   4. Subcontractor Statutory Affidavits ensuring no liens.

C. Warranties

1. Contractor shall warrant all work executed by his forces and his subcontractors under this contract, and any additional modifications and change orders, to be absolutely free of all defects of workmanship and materials for a period of one year beginning on date of Substantial Completion. Contractor shall repair all such defects, resulting damages and repair any damage to other work caused by subsequent repair work to Owner's and Owner's Representatives' satisfaction no later than 30 days following written notification by Owner that remedial repairs are required.
2. At the end of the one (1) year warranty period, Contractor shall inspect the project with Owner for deficiencies. At that time, a correction list shall be prepared by Owner and Contractor shall make the necessary repairs and corrections immediately and as directed by Owner.
3. Contractor shall provide additional guarantees (in excess of one year) where specifically required by pertinent specification sections.

3. FINAL CLEANING

A. Prior to the Date of Substantial Completion, remove all debris, excess dirt, etc., for all portions of job site.

B. Final Inspection

1. When the work is completed in accordance with the Contract Documents and the requirements of Paragraph A above and General and Supplemental Conditions have been satisfied, Contractor shall notify Owner's Representative, in writing, that the work shall be ready for final inspection on a definite date which shall be stated in such notice. The notice shall be forwarded to Owner through Owner's Representative, who will attach his endorsement as to whether or not he concurs in Contractor's statement that the work will be ready for final inspection on the established date. Such endorsement shall not relieve Contractor of his responsibility in this matter.

2. Final inspection will be made by Owner and/or Owner's Representative when Contractor deems that the work has been completed in accordance with the Contract Documents and when he has requested a final inspection be made as outlined above.

End of Section

PROJECT: "McMillan Road Stormwater Improvements Project"

LOCATION: McMillan Road at Winder Hwy. in Dacula, GA

OWNER: City of Dacula, Georgia

We _____, Contractor
(Company name)

for the above referenced project, do hereby warrant that all labor and materials furnished and/or work performed by this company are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defects due to defective materials or workmanship for a period of one (1) year from Date of Substantial Completion. This warranty commences at 12:00 noon on _____ and will expire at 12:00 noon on _____. Should any defect develop during the warranty period commencement date due to improper materials, workmanship, or arrangement, the same shall, upon written notice by Owner, be made good by the undersigned at no expense to Owner.

Nothing in the above shall be deemed to apply to work which has been abused or neglected by the Owner.

DATE: _____ FOR: _____
(Company Name)

BY:

_____

TITLE:

_____

PROJECT: "McMillan Road Stormwater Improvements Project"

LOCATION: McMillan Road at Winder Hwy. in Dacula, GA

OWNER: City of Dacula, Georgia

We _____, Contractor
(Company name)

for _____, as described in Specification Section (s) _____
(List Trade)

do hereby warrant that all labor and materials furnished and work performed in conjunction with the above referenced project are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defects due to defective materials or workmanship for a period of one year from Date of Substantial Completion.

This warranty commences at 12:00 noon on _____ and will expire at 12:00 noon on _____. Should any defect develop during the warranty period commencement date due to improper materials, workmanship or arrangement, the same shall, upon written notice by Owner, be made good by the undersigned at no expense to Owner.

Nothing in the above shall be deemed to apply to work which has been abused or neglected by the Owner.

DATE: _____ FOR: _____
(Company Name)

BY:

_____

TITLE:

_____

STATUTORY AFFIDAVIT

TO: CITY OF DACULA
Dacula, Georgia

Contract entered into the _____ day of _____, 2022 between the above mentioned parties for the "McMillan Road Stormwater Improvements Project" in the City of Dacula, Georgia as represented by the Contract Documents for this project dated June 24, 2022.

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, subcontractor, mechanics, and laborers have been paid and satisfied in full, and that there are no outstanding claims of any character (including disputed claims or any claims which Contractor has or will assert and defend) arising out of the performance of the Contract which have not been paid and satisfied in full except as listed herein below:_____
_____
_____

2. The undersigned further certifies that to the best of his knowledge and belief there are no unsatisfied claims for damages resulting from injury or death to any employees, subcontractors, or the public at large arising out of the performance of the contract, or any suits or claims for any other damage of any kind, nature, or description which might constitute a lien upon the property of Owner.

3. The undersigned makes this affidavit for the purpose of receiving final payment in full settlement of all claims against Owner arising under or by virtue of the Contract, an acceptance of such payment is acknowledged as a release of Owner from any and all claims arising under or by virtue of the Contract.

Signed this _____ day of _____, 2022.

_____
(Signature)

_____
(Title)

_____
(Firm)

COUNTY OF _____ STATE OF _____ Personally before me, the undersigned authority, appeared _____who is known to me to be an official of the firm of _____. Who, after being duly

sworn, stated on his oath that he had read the above statement and that the same is true and correct.

_____ My commission expires

(Notary Public) _____

SECTION 01 743

GEORGIA SECURITY AND IMMIGRATION AFFIDAVIT

PART 1- GENERAL

1.1 The Contractor Affidavit and Agreement example is attached. The Contractor is required to state affirmatively that the individual, firm or corporation which is contracting with the City of Dacula has registered with and is participating in a federal work authorization program. Place this form on Company Letterhead before verifying compliance with federal work authorization program. Upon execution the completed forms shall be returned to the Owner's Representative before entering into a Contract.

1.2 The Subcontractor Affidavit and Agreement example is attached. The Contractor is required to obtain affirmations from the individuals, firms or corporations which are participating as subcontractors in this Contract with the City of Dacula. These Subcontractors must verify that they are registered with and are participating in a federal work authorization program. Place this form on Company Letterhead before verifying compliance with federal work authorization program. Upon execution the completed forms shall be returned along with the Contractor's Affidavit referenced in 1.1 above to the Owner's Representative before entering into a Contract.

GEORGIA SECURITY AND IMMIGRATION CONTRACTOR AFFIDAVIT

STATE OF GEORGIA
CITY OF DACULA

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 The City of Dacula, Georgia has registered with and is participating in a federal work authorization program* (i.e., 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 The City of Dacula, Georgia, contractor shall 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 a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to The City of Dacula, Georgia at the time the subcontractor(s) is retained to perform such service.

_____
EEV/Basic Pilot Program* User Identification Number

_____ _____
BY: Authorized Officer or Agent (Contractor Name) Date

_____
Title of Authorized Officer or Agent of Contractor

_____
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
DAY OF _____, 2022.

_____
Notary Public
My Commission Expires:

*As of July 1, 2007, 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).

GEORGIA SECURITY AND IMMIGRATION SUB-CONTRACTOR AFFIDAVIT

STATE OF GEORGIA -
CITY OF DACULA

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____(name of contractor) on behalf of The City of Dacula, Georgia has registered with and is participating in a federal work authorization program* (i.e., 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 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.

_____
EEV/Basic Pilot Program* User Identification Number

_____ _____
BY: Authorized Officer or Agent (Subcontractor Name) Date

_____
Title of Authorized Officer or Agent of Subcontractor

_____
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
DAY OF _____, 2022.

_____
Notary Public
My Commission Expires:

*As of July 1, 2007 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)

End of Section

SECTION 02 050

DEMOLITION

PART 1 - GENERAL

1.1 SCOPE

A. Work described in this section includes demolition of existing storm pipe, storm structures, asphalt paving, concrete pavements, landscaping, etc. as indicated in Section 01 000, Project Scope & Performance Specification and on Construction Drawings.

1.2 PROJECT CONDITIONS

A. Traffic
1. Conduct demolition operations and removal of debris to ensure minimum interference with roads, driveways, walks and other adjacent occupied or used facilities.
2. Do not close or obstruct streets, walks or other occupied or used facilities without permission from the governing authorities and Owner.
3. One (1) lane of traffic on all streets indicated for asphalt repaving must stay open at all times as required by Owner. If road closure is considered by the Contractor, then the Contractor shall have prior approval from the Owner before closure of road is allowed. Contractor shall also provide a Traffic Control Plan, Detour routes, all temporary road closure and detour signs, as well as traffic control personnel.

B. Use of explosives will not be permitted.

C. Promptly repair damages caused to items to remain by demolition operations at no additional cost to Owner (i.e. curb & gutter, utilities, etc.).

D. Coordinate with property owners prior to accessing properties to inform them of project timeline and to identify existing landscape items that are to remain undisturbed; be relocated for owner; or demolished and removed from the Site.

1.2 POLLUTION CONTROLS

A. Use water sprinkling, temporary enclosures and other suitable methods as necessary to limit the amount of dust and dirt rising and scattering in the air, to the lowest level

of air pollution practical for the condition of work. Comply with the governing regulations.

PART 2 - PRODUCTS

2.1 MATERIALS TO BE REUSED

A. Materials to be disassembled and reused shall be handled and stored in a manner and placed so as to prevent damage. Coordinate with property owners for what demolished items are to be saved, turned over to property owners, and/or reinstalled. Existing fencing is the only item that may be disassembled, stored, and reinstalled by the Contractor.

B. Damaged materials shall be repaired or replaced at no cost to Owner.

2.2 MATERIALS TO BE REMOVED

A. Materials to be removed and not reused shall be treated as "waste" and legally disposed of by Contractor. In addition:
1. Burning of waste on site shall not be permitted.
2. Waste materials shall become the property of the Contractor and shall be promptly removed from site.
3. Landscaping materials to be removed within property owner's yards shall be kept to the minimum amount required to complete the scope of work. Contractor shall coordinate with property owner to determine if any materials are to be saved and turned over to the property owner.
4. Storage or sale of salvageable items on site shall not be permitted.
5. Do not store waste in planted areas or any area that can be damaged by storage operations.

PART 3 - EXECUTION

3.1 EXTERIOR DEMOLITION

A. Coordinate interruption of utility service with utility companies. Obtain required approvals; comply with utility company regulations and building code requirements.

B. Owner assumes no responsibility for actual condition of existing structures.

C. Demolish and/or remove asphalt pavement and any below-grade construction interfering with new construction.

D. Fill all voids below grade caused by demolition of structures, or below-grade construction.

E. Do not interrupt utility service to existing adjacent occupied facilities except as required and approved by the Public Utility Company and Owner.

3.3 PROTECTION

A. Protect and prevent damage to existing structures not included as part of demolition per the Project Scope and Performance Specification.

End of Section

SECTION 02 200

EARTHWORK

PART 1 - GENERAL

1.1 SCOPE

A. Earthwork and fill operations required for any storm sewer pipe installation, pipe backfill, and asphalt pavement regrading and/or repair that may arise or as indicated in Section 01 000, Project Scope & Performance Specification and on Construction Drawings. All other earthwork and fill operations are only required if other subgrade issues arise during construction. This Earthwork Specification shall be utilized by the Contractor. Furnish all labor, materials, equipment and incidentals required to perform all excavation, backfill, fill and grading if required for completion of the work.

B. Notify free underground utility locator service at 1-800-282-7411 prior to any excavations.

C. Work may include but is not limited to (only if an unforeseen issue arises):
   1. Clearing and Grubbing:
      a. Clearing and Earthwork equipment operations if required are limited to areas described in the scope of work and/or Performance Specification.
      b. Do not disturb the existing terrain or existing vegetation outside the designated work area(s).
      c. All debris from clearing and/or grading operations (cleared vegetative matter, trees, root systems, remnant chipped material, stumps, etc.) shall be removed from the site, unless specifically directed otherwise by the Owner.
   2. Cutting, filling and backfilling.
   3. Rough and Finish grading to complete the asphalt replacement and repaving operations.
   4. Furnish, place and compact any additional material necessary to maintain existing grades and drainage patterns of existing roadway.
   5. Excavation, removal and replacement of unsuitable soil materials as described herein.
   6. Rock removal as described herein.

D. By submittal of his bid, Contractor certifies that all means, methods, labor, equipment and materials to complete the satisfactory construction of the Project is included in the contract sum of his bid.

1.2 PROJECT CONDITIONS

A. Contractor shall visit the site and thoroughly familiarize himself with all existing condition prior to formulating his Bid.

B. Contractor may, at his own expense and prior to bidding, make any soils or other geotechnical investigations he may deem necessary. Obtain authorization of Owner, prior to commencement of boring or subsurface investigations.

C. Survey existing grades and lay out grade stakes for if necessary to complete scope of work for storm drainage pipe and structure installation. Utilize a Registered Land Surveyor currently registered to practice land surveying in the State of Georgia.

D. Upon becoming aware of suspected unsuitable subsurface conditions, promptly notify the Owner and the Owner's Representative to permit verification of the conditions by a Contractor engaged Testing Agency or Contractor's Geotechnical Engineer and follow immediately in writing outlining the nature and extent of the differing conditions. No claim by the Contractor for any additional cost or time for any Earthwork operations of any nature will be allowed, unless the Contractor has so notified the Owner, verbally and in writing, as required above, of such conditions.

E. Unsuitable materials, including all forms of rock, debris, organic materials and poor soils, encountered may be redistributed to other areas of the site not to be used in a structural capacity rather than being hauled off site if and only if approved in writing prior to any on-site distribution at the Owner's sole discretion.

F. Contractor is solely responsible for all earth quantities to render the finished grade elevations of the repaved roadway similar to existing condition with no change in drainage patterns. Any exportation *(i.e.,* "haul-off"*)* of "excess" earth; or importation (*i.e.,* "haul-in") of suitable soil materials or GAB shall be included in the Contract Sum unless provided for otherwise in this Specification or as otherwise directed by the Owner or Owner's Representative.

G. Contractor is solely responsible to:
   1. Survey, establish and protect benchmarks and monuments. If any are disturbed or destroyed, Contractor shall replace in original position using a Georgia Registered Land Surveyor at no additional cost to Owner.
   2. Protect areas outside limits of construction from encroachment by construction personnel or equipment regardless of property ownership. Contractor shall erect wooden post and orange safety fencing warning signs and other protective measures and warn the public of ongoing construction activities at limits of and a reasonable distance from the construction if necessary.

3. No Clearing or any form of construction or other disturbance *(including materials storage)*, shall be conducted outside the approximate limits of construction.
4. All utilities are to be located and marked. Horizontal and vertical location of all utilities shall be verified by Contractor and marked on "as-built" drawings if they are to remain. Contact the Utility Protection Center at 1-800-282-7411 not less than three (3) working days prior to grading operations. Protect existing facilities, utilities and adjacent property. Prevent ponding or washing of water on site and over adjacent property. Erect erosion control measures (e.g., silt fences) as required to prevent runoff of soil erosion.
5. Provide all necessary shoring, sheeting and bracing for the protection of work and safety of personnel if necessary. Contractor shall engage a Georgia Registered Engineer highly skilled in the design of such shoring and bracing systems to perform the design engineering for said shoring and bracing. Backfill loads shall not be imposed on walls and structural systems until those systems are completely developed and at design capacity.
6. Protect adjacent and downstream properties from soil erosion. Comply with all erosion and sediment control measures specified elsewhere and required by applicable codes and ordinances.
7. Protect finished paved areas from construction debris and dirt.
8. Provide traffic protection by means of suitable signs, barricades and lights in accordance with the latest edition of the Manual of Traffic Control Devices (MUTCD).
9. Burning of debris on the Project site will not be permitted.

H. Provide dewatering and drainage as needed to accomplish the work required in this section. No excavation may proceed until suitable dewatering has been provided and approved by Owner and/or Owner's Representative. Do not allow areas of ponding water. In the event ponding of water occurs, take the necessary measures to eliminate said ponding. Submit dewatering procedures to Owner and/or Owner's Representative for review.

I. Comply with rules and regulations governing respective utilities.

J. Contractor is solely responsible for protection of downstream properties from Encroachment or damage from increased or concentrated storm water flows, erosion, sediment or pollutants.

K. Claims for "lost revenue" from any unsuitable materials or lack of marketability of any unsuitable soil materials or rock shall not be considered for additional payment or compensation by Owner to Contractor.

1.3 QUALITY CRITERIA

A. All work shall be performed in accordance with applicable codes and ordinances and with requirements of authorities having jurisdiction. All work under this Section:
   1. Shall conform fully to applicable OSHA rules and regulations.
   2. Shall conform to the latest edition of the City of Dacula Development Regulations.
   3. For excavation, trenching and related sheeting, bracing, etc. shall comply with the requirements of OSHA excavation safety standards (29 CFR Part 1926.650 Subpart P) and to the State of Georgia and City of Dacula requirements. Where conflict between OSHA, the State regulations and the County/City regulations exists, the more stringent requirements shall apply.

B. Employ a Georgia Registered Engineer or Georgia Registered Land Surveyor experienced in reading Architectural and Engineering drawings, using measuring devices and tape, and skilled in the use of surveying equipment necessary to perform layout, survey, establish benchmarks and monumentation of all work required.

C. Earthwork monitoring and testing shall be performed by a Georgia Registered Geotechnical Engineer, selected by the Contractor and paid for and approved by Owner.

D. Excavation, backfilling and compaction shall comply with the following Reference Standard Designations by the American Society for Testing Materials (ASTM), or as otherwise noted on Drawings.
   1. ASTM C136-76 - Sieve or Screen Analysis of Fine and Coarse Aggregates
   2. ASTM D1556-64 (1974) - Density of Soil in Place by the Sand-Cone Method
   3. ASTM D698 - Standard Proctor Compaction Test
   4. ASTM D2167 (1972) - Density of Soil in Place by the Rubber Balloon method
   5. ASTM D2487-69 (1975) - Classification of Soils for Engineering Purposes
   6. ASTM D2922-78 - Density of Soil and Soil Aggregate in Place by Nuclear Methods
   7. ASTM D2937-71 - Density of the Soil in Place by the Drive- Cylinder Method

1.4 NOTIFICATION

A. Contractor shall notify Engineer and/or Owner’s Representative 24 hours prior to commencing any grading, excavation, land clearing and removal operations.

B. Contractor shall notify all Utilities Companies in ample time for necessary measures to be taken to prevent interruption of service when utility lines which are to be removed, relocated and/or disconnected are encountered.

C. Contact the Utility Protection Center at 1-800-282-7411 not less than three (3) working days prior to any grading operations.

1.5 SUBMITTALS

A. Submit detailed Shop Drawings and schematic diagrams as necessary to graphically describe all Shoring and Bracing procedures, if any. Include calculations and schedules. Illustrate sequencing of all Shoring and Bracing.

B. Contractor shall submit a detailed time schedule of all Earthwork operations to the Owner's Representative for review prior to commencing work, if any.

C. In the event that the Contractor contemplates deviation(s) from the earthwork design concept for any reason, the deviation(s) shall be represented by submittal of detailed shop drawings which clearly illustrates the intent and scope of said deviation(s) for review and approval prior to proceeding with same.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. Topsoil either found on the site or imported to the site, shall consist of local, fertile, friable, natural soil of loamy character, free of clay lumps, stones in excess of one inch (1") in greatest dimension, typical of Project locality, and containing no chemicals harmful to plant growth, if needed.

2.2 UNSUITABLE SOIL

A. Unsuitable soil materials consist of soil materials not capable of being compacted to density required; rock material, as defined in Paragraph 2.09 of this Section, larger than three inch (3"), debris and organic material including muck, which is a wet organic material which cannot support a light crawler tractor type of equipment and requires removal by power shovels or draglines; or material otherwise identified and designated as unsuitable by Contractor's Geotechnical Engineer.

B. Non-organic materials are considered as unsuitable and include non-organic debris not capable of being compacted to density required, including but not limited to, metal objects such as appliances, metal fencing, tires, etc. Contractor shall remove and legally dispose of such items offsite.

C. Soil material which is too wet to permit the specified compaction but is still suitable to be used in a structural capacity (once dried) based on the recommendations of

Contractor's Geotechnical Engineer, shall be spread and permitted to dry in an area to be designated by Owner. Contractor shall assist drying by discing, harrowing or pulverizing until the soil moisture content is reduced to the specified value.

D. Only excavation of soils, which is wet due to concealed condition, including, but not limited to underground springs, high water table and leaking pipes, shall be addressed as a potential additive change order. Suitable materials which are wet due to precipitation as determined by Contractor's Geotechnical Engineer shall be dried and reused at no additional cost to Owner.

E. In the event that a claim by Contractor has been made as to the existence of "Rock", "Unsuitable Soils" or otherwise "Unsuitable Materials", the Contractor's Geotechnical Engineer shall specify the means by which the "Rock" or otherwise "Unsuitable Soils" or "Unsuitable Materials" shall be quantified.

2.3 FILL

A. Satisfactory fill material shall consist of local, clean, non-active, organic free subsoil, free from debris, roots, topsoil and frozen material and capable of being compacted to the density required.

B. Maximum size of rock fragments shall be equal to or less than three inches (3") in the greatest dimension.

C. In areas of massive fills or disposal pits, Geotechnical Engineer shall determine the maximum size of rock.

D. Materials classified as SM, SP, ML, SC or CL are suitable for structural fill. Generally, residual soils in the local area are suitable for reuse as structural fill provided that they meet the following criteria and shall be well graded within the following limits:

1. Common fill shall consist of mineral soil substantially free from organic materials, loam, wood, trash and other objectionable materials which may be compressible or which cannot be properly compacted. Common fill shall not contain stones larger than three inches (3") in the largest diameter and shall have a maximum of 75% assign the No. 40 sieve and a maximum of 20% passing No. 200 sieve. Common fill shall not contain granite blocks, broken concrete, masonry rubble or other similar materials. Fill shall have physical properties such that it can be readily spread and compacted during filling. Soil excavated from the structural areas and which meets the above requirements may be used in embankments.
2. Screened gravel shall meet the requirements of Section 806.02 of the State of Georgia Department of Transportation Standard Specifications for Construction of Transportation Systems, 2021 or latest Edition.
3. Partially weathered rock or rock no larger than three inches (3") in any

dimension, may be used as fill as provided for in the Geotechnical Report.

4. Soil should exhibit a plasticity index of less than 30 and a dry unit weight of at least 90 pcf unless more stringent requirements are given in the Geotechnical Report, in which case they will govern.

E. Residual material to be used as fill material shall be tested and approved by Contractor's Geotechnical Engineer for degree of compaction specified for its intended use prior to importation or placement.

F. For fill soils to be imported from off-site, provide samples of same for laboratory testing by Contractor's Geotechnical Engineer to determine their Standard Proctor.

G. Contractor shall identify the location of any "borrow pits" so that Contractor's Geotechnical Engineer may inspect same to determine suitability of the general soils which Contractor intends to import to the Project site.

2.4 GRAVEL

A. All stone for Gravel Fill shall meet the quality requirements of Section 800 of the State of Georgia Department of Transportation Standard Specifications for Construction of Transportation Systems, 2021 or latest Edition.

B. Gravel fill shall consist of sound, durable rock, free from injurious amounts of coatings of any kind and shall be graded so 100% passes the 1-½" sieve, 95-100% passes the 1"sieve, 25-60% passes the ½" sieve, 0-10% passes the No.4 sieve and 0-5% passes the No.8 sieve.

2.5 CRUSHED STONE (CRUSHER RUN)

A. All stone for Crushed Stone shall meet the quality requirements of Section 800 of the State of Georgia Department of Transportation Standard Specifications for Construction of Transportation Systems, 2021 or latest Edition.

B. Crushed stone shall consist of sound durable particles of crusher run rock, 100% passing a 2-inch sieve, 97-100% passing a 1-inch sieve, 60-95% passing a 1/2-inch sieve, 25-50% passing a No. 10 sieve, 10-35% passing a No. 60 sieve, and not more than 7-15% passing a No. 200 sieve and free from unsuitable materials.

2.6 GRANULAR BEDDING

A. All stone for Granular Bedding shall meet the quality requirements of Section 800 of the State of Georgia Department of Transportation Standard Specifications for Construction of Transportation Systems, 2021 or latest Edition.

B. Granular bedding and backfill material shall consist of a granular soil, sand, chert, crushed stone or mixture of these, all of which passes a 3/4-inch sieve, 80% passing a 3/8-inch sieve, 40% passing a No.4 sieve, 10% passing a No. 8 sieve, and not more than 5% passing a No. 16 sieve. Material shall be free of organic matter and debris.

2.7 RIP RAP

A. Stone for Rip Rap shall meet the quality requirements of Section 805 Rip Rap of the State of Georgia Department of Transportation Standard Specifications for Construction of Transportation Systems, 2021 or latest Edition.

B. Stone Dumped Rip Rap shall be processed in such a manner as to produce a quarry Run material including rock fines which meet the gradation for the following two types:

Type 1: For severe drainage conditions the largest piece of material shall have a maximum approximate value of two cubic feet. At least 35% of the mass shall be comprised of pieces which weigh 125 pounds or more.

Type 3: For general use normal drainage conditions the largest pieces of material shall have a maximum approximate value of one cubic foot. At least 35% of the mass shall be comprised of pieces which weigh 15 pounds or more.

The remainder of Types 1 or 3 shall be well-graded down to the finest sizes. Rock fines shall comprise a maximum of 10% of the total mass. Rock fines are defined as material passing a No. 4 sieve.

C. Stone for Plain Rip Rap shall be sound, durable pieces and shall be resistant to the action of air and water. Flat, slabby and shaley pieces are not acceptable. It shall be clean and essentially free of rock dust and fines. The material shall be processed such that the largest pieces have a volume of not more than 2 cubic feet and not more than 10% of the total weight of rip rap shall consist of spalls passing a 5-inch sieve.

2.8 GRADED AGGREGATE BASE

A. All stone for Graded Aggregate Base shall meet the quality requirements of Section 815 of the State of Georgia Department of Transportation Standard Specifications for Construction of Transportation Systems, 2021 or latest Edition.

B. Graded Aggregate Base material shall conform to the following: 100% passing a 2-inch sieve, 97-100% passing a 1-inch sieve, 60-95% passing a 1/2-inch sieve, 25-50% passing a No. 10 sieve, 10-35% passing a No. 60 sieve, and not more than 7-15% passing a No. 200 sieve and free from unsuitable materials.

2.9 ROCK

A. Rock consists of three types: Rippable Weathered Rock, Mass Rock and Trench Rock. Rippable Weathered Rock is considered part of the work and shall be included in the Contract Sum. Payment for Mass Rock and Trench Rock removal shall be in accordance with change order procedures based on the schedule of values with unit costs provided with the lump sum bid as specified by the Bid Proposal Form or a time and material basis as agreed to prior to commencing work. Rock quantities shall be qualified and quantified by Contractor's Geotechnical Engineer and verified by Owner's Representative.

B. In the event that a claim by Contractor has been made to the existence of "Rock", "Unsuitable Soils" or otherwise "Unsuitable Materials", the Geotechnical Engineer shall specify the means by which the "Rock" or otherwise "Unsuitable Soils" or "Unsuitable Materials" shall be quantified.
   1. Rippable Weathered Rock is defined as residual material having a volume greater than one (1) cubic yard that, in the opinion of Contractor's Geotechnical Engineer, can be effectively plowed, spaded, or removed with power driven excavating equipment having been first loosened with a track-mounted bulldozer equipped with a single-tooth ripper shank, having a minimum draw bar pull rated at not less than 56,000 pounds.
   2. Mass Rock and Trench Rock are defined as residual material having a volume greater than one (1) cubic yard or more for mass excavation or one-half (1/2) cubic yard for trench or pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, or blasting.
      a. Mass Rock - Mass Excavation: Late-model, track-mounted bulldozer equipped with a single-tooth ripper shank; rated at not less than 230-hp flywheel power and developing a minimum of 56,000-lbf pryout force; measured according to SAEJ-732 (Caterpillar D-8K, Caterpillar 977 front-end loader or equivalent).
      b. Trench Rock - Excavation of Trenches and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch-wide, short-tip-radius rock bucket; rated at not less than 120-hp flywheel power with a bucket-curling force of not less than 25,700-lpf and stick-crown force of not less than 18,700 lbf; measured according to SAEJ-1179 (Caterpillar Model 225 or equivalent).

C. Provide ground vibration monitoring and existing condition/crack survey (video and/or digital) of all nearby structures and/or adjacent properties prior to any blasting operations. Contractor must notify Owner's insurance company of rock removal intent and must obtain all necessary insurance certificates and permissions to expedite this work.

PART 3 - EXECUTION

3.1 CLEARING

A. Clearing is the removal of all obstructions which interfere with the construction. These items include minor structures above and below existing grades and below finished grades identified on the drawings, trees and their complete root systems, brush, other vegetative material in any condition (i.e., chipped, cut, wrenched, etc.) rubbish, fences and other such items except items indicated to be preserved on Drawings.

B. Set and maintain any Active or Passive Tree, Wetland, Spring, Buffer, Limits of Disturbance or Vegetation Protection Fencing prior to Clearing operations in accordance with Drawings.

C. Contractor shall clear only those areas in which construction or grading operations are required and includes all excavated, graded and filled areas. Contractor shall protect all other areas from any damage as a result of clearing operations.

D. Burning on site shall not be permitted under any circumstances.

E. Contractor shall remove all cleared material from the Project site and legally dispose of.

3.2 GRUBBING

A. Grubbing is the removal of all roots and stumps from the ground larger than ¾ inch diameter.

B. Unless otherwise directed, Contractor shall grub all cleared areas;
   1. In fill areas where design grade levels for building, roads or paved areas are to be placed, grub to minimum depth of twelve inches (12") below the finished design grade level as indicated on Drawings.
   2. In all areas of excavation for structures, grub to the depth of the proposed excavation or to the depth that allows the area to be free of debris, rock, organic and inorganic materials, and unsuitable soils that would otherwise prevent the soil from being compacted to the density as indicated on Drawings and stated in the Specifications herein.
   3. In areas outside of design level grades or building footprint or roads and parking lots where fill is to be placed grub to the existing grade unless the area adjacent requires soils compacted to a density to support the structures, roads, or parking areas.
   4. Contractor shall be responsible for excavating to an appropriate depth and removing and replacing with suitable soils that will allow soil to achieve requisite compacted density.

5. In areas to be grassed and/or landscaped without fill, grub to a minimum of six inches (6") below the final grade.

C. Remove all grubbed material from the Project site and legally dispose of.

3.3 CLEAN UP

A. Burning of debris or grubbed material onsite shall not be permitted under any circumstances.

B. Remove all debris resulting from Clearing and Grubbing operations from the site and dispose of in compliance with all applicable laws and regulations.

C. Do not place such debris on private property without written consent of Owner and Owner of such property.

D. Do not place debris or grubbed material around perimeter of site.

E. Remove all non-organic debris, trash, etc. from the site and dispose of in compliance with all applicable laws and regulations.

3.4 TOPSOIL STOCKPILING

A. Strip topsoil to full depth encountered in areas indicated to be graded on the drawings. Stockpiling may occur as required to complete all construction operations. Intermittent movement of Topsoil from one location of the Project site to another shall be included in the Contract Sum. No claim shall be considered by Owner for the movement of Topsoil.

B. Prior to stockpiling topsoil, remove tree limbs, tree roots, rocks larger than one inch (1") and other deleterious materials from the topsoil. Removed materials shall become the property of the Contractor and hauled off the site and legally disposed.

C. Stockpile topsoil in manner to drain without ponding, and to avoid loss of material through erosion by wind or water.

D. Do not export any topsoil off-site unless approved in writing by the Owner.

E. Re-distribute a minimum of four inch (4") deep layer of topsoil fine graded to finish contour elevations illustrated in non-paved or building areas.

3.5 EXCESS, UNSUITABLE AND INSUFFICIENT MATERIALS

A. Remove and legally dispose of excess and unsuitable materials from Project site unless directed otherwise in writing by Owner. Unsuitable material may be placed on Owner's property if and only if approved in writing by Owner prior to any on-site distribution as a deductive change order and then shall only be placed in non-structural fill areas of the Project site as designated by Owner and/or Owner's Representative.

B. Provide satisfactory fill material in areas where existing materials are insufficient or unsuitable for earthwork operations.

C. If, in the opinion of the Engineer/Geotechnical Engineer, the material in its undisturbed natural condition at or below final design grade as indicated on the Drawings, the excavation is unsuitable for its intended use; it shall be removed to such depth and width as directed and be replaced with suitable material by Contractor as directed by the Engineer/Geotechnical Engineer. Contractor, unless otherwise directed by the Engineer or Owner, shall remove and replace unsuitable materials based on the schedule of values with unit costs provided with the lump sum as specified by the Bid Proposal Form. Owner may elect, in accordance with the provision of the agreement, to direct Contractor to remove and replace the unsuitable materials on a lump sum or time and materials basis should applicable unit rates not exist or not covered for unsuitable material being removed. Contractor shall receive written notice from the Engineer of means and methods to employ i.e., lump sum, unit rates or time and materials, prior to executing any work deemed in excess of the amount indicated in the Contract Sum.

3.6 EXCAVATION

A. Excavation shall be made to the design lines and levels illustrated on the drawings or to such depths, whichever is greater, as further described elsewhere in this section and to such widths as will give suitable room for construction of the structures, for bracing and supporting, pumping and draining and inspection. The bottom of the excavations shall be rendered clean, firm, level and dry and in all respects acceptable to Contractor's Geotechnical Engineer and Owner's Representative. Where changes in levels occur, provide vertical steps in horizontal runs.

B. Excavation and dewatering shall be accomplished by means and methods which preserve the undisturbed state of subsurface soils. Exposed subsurface shall be proof rolled with at least two (2) coverages of the specified equipment. Contractor's Geotechnical Engineer and Owner's Representative shall waive this requirement if, in his/her opinion, the subsurface will be rendered unsuitable by such compaction. Subsurface soils which become soft, loose, "quick", or otherwise unsatisfactory for support of structures as a result of inadequate excavation, dewatering, proof-rolling,

or other construction methods shall be removed and replaced by structural fill as required by Contractor's Geotechnical Engineer and Owner's Representative at Contractor's expense.

C. Dewatering shall be such as to prevent boiling or detrimental under-seepage at the base of the excavation as specified herein.

D. Contractor shall prepare subsurface areas for all structures unless otherwise illustrated on Drawings or otherwise specified elsewhere in this Section:
   1. Roughly level and proof roll these areas with a 25-ton roller, (or the equivalent) making at least four passes (two passes being perpendicular to the others).
   2. Compact the top twelve inches (12") of fill below subsurface to a minimum of 100 percent Standard Proctor (ASTM D698).
   3. Where structures are supported by piles, compact the top twelve inches (12") of subsurface to a minimum of 95 percent Standard Proctor (ASTM D698).

E. Excavation equipment shall be satisfactory for carrying out the work in accordance with requirements specified. In no case shall the earth be ploughed, scraped, or dug with machinery so near to the finished design limits indicated on Drawings as to result in excavation of, or disturbance of material below design limits. The last of material loosened by mass excavation shall be removed with pick and shovel immediately prior to placement of concrete or working mat.

F. When excavation for foundations has reached prescribed depths, Contractor's Geotechnical Engineer and Owner's Representative shall be notified and will inspect conditions. If materials and conditions are not satisfactory to Contractor's Geotechnical Engineer and Owner's Representative, Contractor's Geotechnical Engineer and Owner's Representative will issue instructions as to the procedures to resolve the issue(s) in question.

F. During final excavation to design limits as indicated on Drawings, take whatever precautions are required to prevent disturbance and remolding. Material which has become softened and mixed with water shall be removed. Hand excavation of the final three to six inches (3"- 6") will be required as necessary to obtain a satisfactory undisturbed bottom. Contractor's Geotechnical Engineer and Owner's Representative will be the sole judge as to whether the work has been accomplished satisfactorily.

G. Over-excavation by Contractor beyond the design limits and depths required or indicated on the drawings shall be replaced with lean concrete, compacted structural fill, crushed stone, or other materials as directed by Contractor's Geotechnical Engineer and Owner's Representative at no change in Contract Sum or Time.

H. If soil conditions permit, cut footing trenches to exact size of footing and omit

forms. Notify Contractor's Geotechnical Engineer and Owner's Representative if earth of doubtful bearing is encountered. If adequate bearing is not encountered within eight inches (8") of depth illustrated on Drawings, excavations shall be carried deeper upon written authorization and paid for as additional work in accordance with Contract Conditions.

J. If excavations are carried deeper than required by Drawings or Specifications in error, the additional depth shall be filled with materials specified for road subgrade and compaction at no additional cost to Owner.

K. Protect excavations against cave-ins, ponding and freezing. When freezing can be anticipated prior to placing of concrete, protect excavations or delay carrying excavations to full depth until concrete can be placed.

L. Maintain excavations free of surface water. Provide pumps if required to drain excavations. Provide and maintain temporary drainage ditches as required.

M. Notify Contractor's Geotechnical Engineer and Owner's Representative when footing excavations are complete. Geotechnical Engineer will perform appropriate density testing of the excavations prior to placing formwork, reinforcement steel, anchor bolts and concrete.

N. Contractor shall be fully responsible for all damage to any part of the site, building structures or other installations, caused by water.

O. Concrete should be placed the same day earth excavation is made. If it is necessary for excavations to remain open overnight, provisions should be made to prevent collection of surface run-off in the excavation.

3.7 EXCAVATION OF ROCK

A. If rock is encountered, clear away earth and expose materials. Notify Contractor's Geotechnical Engineer and Owner's Representative and receive written instructions prior to excavations. Measure and estimate extent of rock to be excavated. Contractor's Geotechnical Engineer shall identify, qualify and verify in writing whether the material shall be classified as rock and shall confirm the extent and quantity of rock to be excavated.

B. Only rock excavation done in accordance with Contractor's Geotechnical Engineer and Owner's Representative instructions will be paid for by Owner as additional work in accordance with Contract Conditions.

C. Contractor shall remove rock in accordance with the following:

1. Remove rock to a depth of six inches (6") below proposed slabs and pavement.
2. Twenty-four inches (24)" on each side of and below footings of the proposed building walls.
3. Six inches (6") below and eight inches (8") to each side of conduits, ducts and pipes installed in utility trenches, with minimum width of thirty-six inches (36").
4. Twelve inches (12") below finished grade in areas to receive landscaping, sodding and seeding.

D. No blasting is allowed. Use of explosives will not be permitted.

3.8 EXCAVATION AND BACKFILL OF UTILITY TRENCHES

A. Excavation for all trenches required for the installation of pipes and ducts shall be made to the design levels indicated on the drawings and in such a manner and to such widths as will give suitable room for laying the pipe or installing the ducts within the trenches, for bracing and supporting, and for pumping and drainage facilities. Bottoms of excavations shall be rendered firm and dry and, in all respects, acceptable to the Contractor's Geotechnical Engineer and Owner's Representative. Bituminous pavement, when encountered, shall be cut with pneumatic chisels along smooth and straight lines before excavating. Saw-cutting is required on all asphaltic concrete.

B. Rock shall be removed in accordance with Section 3.7.

C. Where pipe or ducts are to be laid in gravel or sand bedding or encased in concrete, The trench may be excavated by machinery to, or just below design level indicated on Drawings provided that the material remaining in the bottom of the trench is no more than slightly disturbed.

D. Where pipe or ducts are to be laid directly on the trench bottom, the lower part of the trenches shall not be excavated to the design level by machinery, the last of the material being excavated manually in such a manner that will give a flat bottom true to grade so that pipe or duct can be evenly supported on undisturbed material. Bell holes shall be made as required.

E. When excavation methods include the use of a steel trench box, comply with the following requirements:
   1. When installing rigid pipe Reinforced Concrete Pipe (RCP), Ductile Iron Pipe (DIP), etc., any portion of the box extending below mid diameter of the pipe shall be raised above this point prior to moving the box ahead to install the next pipe. This is to prevent the separation of installed pipe joints due to movement of the box.
   2. When installing flexible pipe (PVC, ABS solid wall, ABS truss, etc.), the bottom of the box shall not extend below mid diameter of the pipe. This is to prevent loss of soil between the box and the pipe bedding which could result in excessive deflection of the installed pipe.

F. Backfilling over ducts, pipes, conduits, etc. shall begin not less than three days after Placing concrete encasement or until the test sample achieves prescribed strength of tested sample.

G. Where pipe is to be installed in fill of any type, fill shall be placed and compacted to the total depth required and then re-excavated for pipe installation.

H. As soon as practicable after the pipe has been laid and jointed, backfilling shall begin and thereafter be completed expeditiously. If required, as illustrated on Drawings, screened gravel shall be placed around the pipe to its mid-diameter. As the screened gravel is placed, it shall be compacted by suitable tools. Compaction shall meet a minimum criterion of 98% Standard Proctor at or near its optimum moisture content (minus 2 to plus 3 percent).

I. Use Reinforced Concrete Pipe for culverts within right-of-way and under pavement refer to City of Dacula Standards.

I. For Plastic (PVC) pipe for drainage systems or roof leaders grade trench bottom to Uniform slope to provide a firm, unyielding bearing surface along the entire length of the barrel of the pipe.

J. Continue backfilling with suitable soil in six-inch (6") layers by hand, tamping material by hand operated tampers to a level eighteen inches (18") above top of pipe.

L. Form depressions for hubs and similar joints only in size as required for making joint.

M. In areas of rock excavation, and where needed in other areas, provide crushed stone Bedding for all pipes.

N. Provide bedding over the full width of excavation to a minimum depth of six inches (6") Under pipe.

O. Whenever the subsurface is unstable or too soft to provide a satisfactory pipe foundation for any pipe, undercut the trench as necessary and backfill with crushed stone. Compact and bring the material to proper grade to create a firm, unyielding foundation.

P. After the bedding, if required, has been placed to the mid-diameter of the pipe, select common fill shall be placed to a depth of twelve inches (12") over the top of the pipe. Material shall be thoroughly compacted by hand-tamping as placed with at least one man tamping for each man shoveling material into the trench. Compaction shall result in achieving a 95% Standard Proctor test at or near its optimum moisture content (minus 2 to plus 3%).

Q. Where the pipes are laid in unpaved areas, the remainder of the trench shall be filled with common fill in layers not to exceed twelve inches (12") and thoroughly compacted by rolling, ramming, or puddling sufficiently to prevent subsequent settling to 95% Standard Proctor at or near its optimum moisture content (minus 2 to plus 3%). The backfill shall be mounded 3 inches (minimum) above the finish or existing grade or as directed by the Contractor's Geotechnical Engineer. Wherever a loam or gravel surface exists prior to excavations, it shall be removed, conserved and replaced to the full original depth as part of the work under the pipe items. In some areas it may be necessary to remove excess material during the clean-up process, so that the ground may be restored to its original level and condition. If Contractor prefers not to store loam, gravel, or topsoil he/she shall replace it with material of equal quality and in equal quantity.

R. Where the pipes are laid in streets, or other paved areas, the remainder of the trench above the bedding and up to a depth of twelve inches (12") below the bottom of the specified paving shall be backfilled with common fill in 6-inch (max.) layers thoroughly compacted by rolling or ramming to 98% Standard Proctor. The twelve-inch (12 ") layer below the bottom of the specified paving shall be of Class A or B stone, compacted in six-inch (6") layers to 98% modified Proctor.

S. Along the length of all pipeline and duct trenches, impervious dams or bulkheads of clay thirty-six (36") in thicknesses or concrete twelve-inch (12") in thickness shall be constructed in the trench bottom at three-hundred-foot (300') intervals or at manholes and structures, whichever is less, to obstruct the free flow of groundwater after construction is completed. Provide impervious dams at all points where a pipe trench enters an excavated area where a permanent underdrain system is installed.

T. Do not over-excavate. If specified trench widths are exceeded, Contractor shall adhere to Section 3.6 H. Contractor's Geotechnical Engineer and Owner's Representative may require installation of stronger pipe or special installation procedures at no additional cost to Owner.

U. Water line trenches shall be excavated to avoid high points requiring the installation of vacuum and relief valves below the frost line.

V. Cutting and removing existing pavements where required shall be done in neat lines and in accordance with 3.8 A of this Section.

W. Do not backfill over utility lines which have not passed required testing or inspections including the Contractor's Geotechnical Engineer's inspection of the subsurface has not been done and or other Inspections, testing and regrading locations of subsurface utilities is not accomplished.

X. Contractor is to continue to backfill all trenches with suitable fill material in 6-inch lifts immediately after the pipe is laid or bedded as described in items 3.6 I, J and K above using suitable soils and adhering to the backfilled requirements of paved or unpaved areas. Compact trench backfill with portable compaction equipment.

Y. If sufficient suitable excavated material is not available on site, provide sufficient and suitable borrow material for backfill (See Paragraph 2.3 of this Section).

Z. Backfill from twelve inches (12") above the pipe to finish grade shall be as follows:
1. Trenches in areas not to be paved may be backfilled and compacted by methods of Contractor's choice. Compact backfill to 95% Standard Proctor Density. Refill the trench as often as required to maintain the design elevation at proper grade.
2. Trenches in areas to be paved and in areas beneath proposed structures shall be backfilled with granular material.
3. Compact backfill to 98% Standard Proctor Density with top 12 inches compacted to 100% Standard Proctor Density or as specified by Geotechnical Report.
4. Compact backfill further, if necessary, either by leaving the backfilled trench open to traffic while maintaining the surface or by the use of compaction equipment as required.
5. Refill settlement in trenches with material acceptable to Contractor's Geotechnical Engineer and continue such maintenance until pavement placement is authorized by Contractor's Geotechnical Engineer and Owner's Representative.

AA. Fill and backfill materials shall not be placed on frozen surfaces, or surfaces covered by snow or ice. Fill and backfill material shall be free of snow, ice and frozen earth.

BB. Utility Trenches:
1. Excavate trenches to a maximum width equal to pipe diameter plus 2'-0" for pipes 30" diameter and smaller; 2'-6" plus pipe diameter for pipe exceeding 30" diameter. Minimum excavation width shall be 3'-0". Do not over-excavate. If specified trench widths are exceeded, Engineer may require installation of stronger pipe or special installation procedures at no additional cost to Owner.
2. The bottom of trenches, when in rock, shall be excavated a minimum of 6" below required bottom of pipe, refilled with fill material free of rock larger than 3" in any dimension, and compacted to bedding level to provide uniform bearing and support along the length of each pipe section.
3. Pipe shall be carefully bedded in soil foundation. See paragraph 3.10.
4. Water line trenches shall be excavated to avoid high points requiring the installation of vacuum and relief valves below the frost line.
5. Cutting and removing existing pavements where required shall be done in neat lines.

CC. Proof-rolling:

1. After the site has been properly drained, and all organic surface soils have been removed, the site shall be inspected by Owner and Owner's Representative and proof-rolled at that time.
2. Proof-rolling shall consist of several overlapping passes of heavily loaded 18-20 ton dual tandem dump truck.
3. The purposes of the proof-rolling will be to detect any areas where soft or unstable soils are present, as well as to improve the density of the loose near surface soils.
4. Proof-rolling shall be performed in the presence of the Owner and Owner's Representative who can observe any areas where remedial action may be required. Contractor's Geotechnical Engineer will be used if there is a problem encountered.
5. Any soft or yielding areas shall be thoroughly undercut and replaced with well-compacted structural fill 95% Standard Proctor with the top 12" compacted to 98% Standard Proctor Density or as specified by the Geotechnical Report.
6. Groundwater level should be maintained at a depth of at least two (2') feet below the depth of vibratory rolling operations.
7. A minimum of four (4) complete overlapping passes shall be made in each of two perpendicular directions.

3.9 EXCAVATION EMBANKMENT AND BRACING

A. Contractor shall accept full responsibility for all excavations and shall protect all excavation embankments against collapse.

B. Where possible, embankments over 5'-0" high shall be made at a slope not greater than 1 horizontal to 1 vertical; or where the soil is very sandy or wet, the slope should not be greater than 2 horizontal to 1 vertical.

C. Steeper slopes than those suggested herein may be employed when the work is under the supervision of a Registered Professional Engineer responsible for the design engineering of all shoring and bracing techniques required to accomplish the work and shall be employed by Contractor.

D. Where it is not possible to provide a safe embankment slope, all banks shall be temporarily supported and maintained secure until permanent support has been provided.

E. Where ditches or trenches are over 5'-0" deep; cross bracing and shoring shall be provided to prevent collapse.

F. Contractor shall provide bracing systems designed by a Registered Engineer in the State of Georgia, experienced in such designs and acceptable to Owner.

G. Drawings shall show the work and sequence in its entirety and be submitted to Owner for approval prior to commencing work.

H. To prevent caving, or settlement of earth adjacent to excavations, and for the protection of persons as well as property, shoring, bracing and other similar work shall be provided and installed to meet the conditions in each particular case and shall be left in place until construction has reached a point where backfills behind walls or in ditches have been made and the need for shoring and bracing eliminated.

3.10 BEDDING

A. Bedding shall conform to the following Specifications unless illustrated otherwise elsewhere in these documents:
   1. For ductile iron, cast iron or plastic (SDR) pipe for water main or sanitary sewer system refer to City of Dacula Standards.
   2. For corrugated metal pipe (CMP), concrete pipe (RCP) or plastic (PVC) pipe for storm water drainage systems or roof leaders grade trench bottom to uniform slope to provide a firm, unyielding bearing surface along the entire length of the barrel of the pipe.
   3. Bed pipe in trenches on continuous soil foundation shaped to lowest one-fourth of pipe profile, unless illustrated otherwise in these documents.
   4. Continue backfilling with suitable soil in 6" layers by hand, tamping material by hand operated tampers to a level 18" above top of pipe.
   5. Form depressions for hubs and similar joints only in size as required for making joint.
   6. In areas of rock excavation, and where needed in other areas, provide crushed stone bedding for all pipes.
   7. Provide this bedding over the full width of the excavation to a minimum depth of 6" under the pipe.
   8. Whenever the sub-grade is unstable or too soft to provide a satisfactory pipe foundation for any pipe, undercut the trench as necessary and backfill with crushed stone.
   9. Compact and bring the material to proper grade to create a firm, unyielding foundation.

3.11 TRENCH BACKFILLING

A. Do not backfill over utility lines which have not passed required testing or inspections including:
   1. Contractor's Geotechnical Engineer inspection of subgrade.
   2. Inspections, testing and regrading locations of subgrade utilities.

B. Backfill all trenches and excavations immediately after the pipe is laid using suitable soils:

1. If sufficient suitable excavated material is not available on site, provide sufficient and suitable borrow material for backfill. See Paragraph 2.3 of this Section.
2. Backfill from 18 inches above the pipe to grade shall be as follows:

   a) Trenches in areas not to be paved may be backfilled and compacted by methods of Contractor's choice. Compact backfill to 90% Standard Proctor Density. Refill trench as often as required to maintain the design elevation at the proper grade.

   b) Trenches in areas to be paved and in areas beneath proposed structures shall be backfilled with granular material. Compact backfill to 95% Standard Proctor Density with the top 12" compacted to 98% Standard Proctor Density or as specified by the Geotechnical Report. Compact backfill further, if necessary, either by leaving the backfilled trench open to traffic while maintaining the surface or by the use of compaction equipment as required. Refill settlement in trenches with material acceptable to the Contractor's Geotechnical Engineer and continue such maintenance until pavement placement is authorized by the Owner's Representative.

3.12 FILLING

A. Preparation of Surface to Receive Fill (Reference and follow the Contractor's Geotechnical Engineer's recommendations in his report)

1. Remove vegetation, topsoil, debris, unsuitable soil materials, obstructions and deleterious materials from ground surface prior to placement of fill. Break up (and periodically cut benches into) sloped surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.
2. Surfaces to receive fill material shall be inspected and approved by Contractor's Geotechnical Engineer.
3. When existing ground surface has density less than that specified for particular area classification, break up the ground surface, pulverize, moisturize soil to optimum moisture content, and compact to required depth and percentage of maximum density.
4. Subgrade shall be proof rolled with a heavily loaded 18-20 ton dual tandem dump truck, scraper or similar rubber-tired equipment in the presence of the Owner and/or Owner's representative. Contractor's Geotechnical Engineer will be called in if a problem is encountered.
5. Proof-rolling shall be performed in two mutually perpendicular directions, with at least two passes in each direction.
6. Areas which exhibit signs of instability that cannot be stabilized with further compaction shall be undercut to a suitable grade and backfilled with structural fill.

B. Benching should be made periodically; create an eight foot to ten foot (8'-10') wide bench for each two vertical foot (2 VF) of fill placed. Insure stable interface between old fill and newly placed fill.

C. Place fill materials in layers not more than six inch (6") loose depth. Before compaction, moisten or aerate each layer to provide the optimum moisture content plus or minus 2%, or as specified in soils report. See paragraph 3.11 below for compaction requirements of fill. Do not place backfill or fill material on muddy, frozen surfaces or surfaces containing any frost or ice. Compaction shall be inspected by Contractor's Geotechnical Engineer.

D. No soil found on the site or transported to the site, which is contaminated with material containing asbestos, PCB's, radon, gasoline, fuel oil or other fossil fuels shall be used for fill, backfill, or planting topsoil. Any contaminated soil found on the site shall be removed and disposed of in a manner approved by the appropriate regulatory agencies.

3.13 GRADING AND FILLING AROUND TREES

A. Obtain a copy of City of Dacula Tree Preservation Standards which are hereby made a part of these Specifications; and follow all pertinent guidelines regarding Grading and Filling operations at or near Tree Save Areas as illustrated on Drawings.

B. Maintain existing grade within Critical Root Zone (CRZ) of trees unless otherwise indicated.

C. Where existing grade is above new finish grade illustrated around trees, hand excavate within drip line to new grade. Cut exposed roots approximately 3" below elevation of new finish grade. Employ a tree surgeon to recommend procedures such as pruning of branches and stimulation of root growth. Provide subsequent maintenance during the contract period as recommended and long-range maintenance procedures to be followed after completion of construction operations.

D. Raising Grades
   1. Where existing grade is 4" or less below elevation of finish grade illustrated, provide fill using stockpiled topsoil. Use topsoil as specified. Place topsoil in single layer and do not compact.
   2. Where existing grade is more than 4" but less than 8" below elevation of finish grade illustrated, place a layer of drainage fill on existing grade prior to placing topsoil. Place fill against trunks of trees to an elevation of approximately 2" above finish grade and extending not less than 18" from tree trunk on all sides. For balance of area within drip line perimeter, place drainage fill to an elevation 4" below finish grade and complete fill with a 4" layer of topsoil. Do not compact stone or topsoil layers.

3.14 COMPACTION

A. Perform compaction of soil materials for fills using mechanical soil compaction equipment for type and size materials to be compacted. Hand compact materials in areas inaccessible to machinery.

B. Provide the percentages of specified compaction at the specified moisture content in the specified lifts as outlined in the Geotechnical Report. If no specification is given in said report, use the following as a minimum at 3% plus or minus of optimum moisture content placed in 8" lifts:
   1. Provide 95% maximum dry density with top 12" to 98% maximum dry density for fill under building slabs, extending beyond the building outlines a distance equal to twice the height of the fill beneath any edge of building. Fill should then slope not steeper than one vertical to two horizontal (2H:1V);
   2. Provide 95% maximum dry density with the top 12" to 98% maximum dry density for fill under asphaltic pavements;
   3. Provide 95% maximum dry density Standard Proctor and top 12" to 98% maximum dry density for fill under concrete footings, concrete sidewalks, concrete steps and concrete ramps and trench backfill.
   4. Provide 90% maximum dry density for all other non-paved fill material unless otherwise indicated.

C. Where subgrade or soil layer must be moisture conditioned before compacting, apply water to surface of subgrade or soil layer. Scarify and air-dry soil material that is too wet to permit compaction to specified density.

D. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread where directed by Owner's Representative and permitted to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to satisfactory value, as determined by moisture density relation tests. When accepted by the Contractor's Geotechnical Engineer, soil material may be used in compacted backfill or fill.

E. Remove unsuitable material at the site for the proposed structures and paved areas from the existing grade. No water shall be allowed to accumulate in the excavation, or on the subgrade soils during construction. Soils which will be exposed during construction are very sensitive to disturbances and strength degradation in the presence of excess moisture. They are also frost susceptible. The amount of time natural subgrades are exposed to the elements must be minimized in order to prevent possible subgrade degradation. Work must be completed such that excavation, inspection, undercutting, backfill and/or concrete mud matting can be accomplished expeditiously in a given area.

Foundations have been designed for bearing capacity of 3000 post bearing. Contractor shall verify the bearing capacity prior to placing footings. If tests indicate less than assumed capacity, receive instructions from Owner.

3.15 FINISH GRADING

A. Finish grade disturbed areas, with a minimum 4" depth of topsoil, in smooth, uniformly leveled, crowned, or contoured slopes between all new elevation surface points to existing, undisturbed grade elevations.

B. Grade areas adjacent to buildings for positive drainage to storm drainage structures and prevent ponding. Finish grades shall be within one tenth of a foot (0.1') of indicated elevations.

C. Drawings indicate the levels, slopes and contours of finished grade elevations for the entire site. Slight modifications as determined by Owner's Representative may be required, Contractor shall make these modifications without extra cost to Owner.

D. Where compacted areas are disturbed by construction operations, scarify surface, reshape and compact to required density.

E. Redistribute stockpiled topsoil to uniform depth over graded areas and other areas to receive landscaping or grassing, in a 4" minimum depth. In the event that stripped topsoil is not sufficient to render a 4" minimum depth, import clean topsoil sufficient to render a minimum 4" depth as part of the Contract Sum at no additional cost to the Owner.

F. Redistribute excess topsoil, subsoil from footing excavations, other soil matter and debris on approved areas of the Owner's property at no additional cost to the Owner.

G. At completion of finish grading operation, entire site shall be ready for planting or grassing.

H. Where finish grading meets or abuts curbs, walks or similar pavements, upstream grades shall be slightly higher than pavements to permit drainage and prevent ponding behind curbs or walks.

I. Protect newly graded surfaces from traffic and erosion and keep free of debris. Where graded or compacted surfaces are damaged by subsequent operations, return to proper grade and state of compaction.

3.16 GRADE MAINTENANCE

A. Contractor shall provide additional fill material, remove excess material, or redistribute materials as required, should grades be changed by erosion or other causes during course of construction, without additional cost to Owner.

3.17 FIELD QUALITY CONTROL

A. Contractor's Geotechnical Engineer shall be notified by Contractor of the progress of work under this section on a continuing basis so that necessary field soil engineering and testing services may be provided during site preparation, excavation, fill placement and foundation phases of the Project, if required by Owner. Do not proceed with additional portions of work until results of previous phases have been verified.

B. Contractor's Geotechnical Engineer will verify that all existing fill, topsoil, soils containing organic matter and all other undesirable materials are removed and only engineered fill is placed over suitable subgrade soils.

C. If, during progress of work, tests indicate that compacted materials do not meet specified requirements, remove defective work, replace and retest at no cost to Owner.

D. Ensure compacted fills are tested before proceeding with placement of surface materials.

E. Contractor's Geotechnical Engineer will observe all "benching" operations as fill placement progresses to the existing slopes.

F. Contractor's Geotechnical Engineer will observe the foundation construction as directed by Owner and determine the adequacy of bearing surfaces prior to construction of foundations.

G. Contractor's Geotechnical Engineer will make all tests of backfill materials to determine their suitability for compaction and will observe the placing of backfill as directed by Owner.

H. Contractor's Geotechnical Engineer and the Owner's Representative shall have the power of rejection of materials, equipment or operating procedures of the backfilling operation. Contractor shall replace, rework or correct work which does not meet the Specifications as directed by Contractor's Geotechnical Engineer and/or Owner's Representative at no cost to Owner.

I. Contractor shall be responsible for notifying the Contractor's Geotechnical Engineer at least 24 hours prior to the time when testing will be required.

J. Additional tests on completed fill may be authorized by Owner. If such tests indicate failure to meet the Specifications, the costs of these tests and subsequent retests will be paid by the Contractor. Otherwise, the costs of these tests will be paid by Owner.

K. In-place density tests shall be performed by the Contractor's Geotechnical Engineer according to the following requirements:
   1. In the general building area, conduct one test for every 2,500 square feet for each two feet of depth.
   2. At wall and trench backfill areas, conduct one test for every 50 lineal feet for each two feet depth.
   3. In all cases, a test is required within the top foot of fill.
   4. Sidewalks - One test for each two-foot lift of each 5,000 sq. ft. of area.
   5. General area of fill - One test for each two-foot lift of each 10,000 sq. ft. of area.

End of Section

SECTION 02 270

SLOPE PROTECTION AND EROSION CONTROL

PART 1 - GENERAL

1.1 SCOPE

A. Slope protection and erosion control shall be performed on all disturbed areas that the Contractor disturbs outside of concrete or paved areas. Contractor shall stabilize all disturbed areas with permanent grassing (Bermuda Sod or match Sod in-kind to existing condition in homeowner's yards; all other areas need permanent grassing with Bermuda Seed), erosion control matting, and riprap at ends of headwalls. Contractor shall fine grade laydown area at end of project to provide positive drainage to weir inlets and stream buffer as illustrated on the Drawings.

B. Work described in this section includes the containment of sediment transport, containment and control of all soil erosion and containment and treatment of all pollutants including dust, prior to, during and throughout all construction operations; establishment of permanent vegetative cover on all disturbed areas and continued maintenance of said measures in accordance with sub-paragraph 4 of Part III, paragraph. 3.4 this Section. Work includes removal of all devices at the completion of the project as further described in Part 3.5 of this Section.

C. Contractor is solely responsible for protection of all adjacent properties and affected downstream properties from encroachment or damage from soil erosion and/or the discharge of pollutants by water, air, or dust to any areas off the project site.

D. Best Management Practices which are more fully described in the latest edition of the "Manual for Erosion and Sediment Control in Georgia- Vegetative and Structural Best Management Practices (BMPs) for Land Disturbing Activities" as published by the Georgia Soil and Water Conservation Commission shall be employed to stabilize all disturbed areas. The Engineer may require additional measures at no cost to Owner if Contractor is not preventing erosion from leaving the limits of work.

1.2 SUBMITTALS

A. None required unless additional measures are required by Owner and/or Engineer.

1.3 PROJECT CONDITIONS

A. Furnish and install all control measures prior to or concurrent with any land disturbance activity. The Contractor is responsible for the initial provision and installation all control

measures and then the continued provision and installation of all measures throughout all construction operations and all sequences of construction operations.

B. Schedule grading operations to allow permanent erosion control to take place in the same construction season. Avoid or minimize exposure of soils to winter weather. Maintain all controls until vegetative cover has been established.

C. Construct and maintain temporary control measures until such time as permanent measures are effective in control of erosion, sediment and pollution from the site. Extent of measures shall be responsibility of Contractor.

D. Stop all erosion, sediment, dust or other pollution from leaving the site and encroaching on downstream or surrounding properties.

E. Temporary grassing shall be applied to all disturbed areas left idle for 72 hours.

F. Contractor is responsible for all quantities of all BMPs regardless of if shown on the ESPC. The extent of soil erosion control measures shown on the ESPC should be considered minimum.

1.4 QUALITY CRITERIA

A. Procedures shall comply with the "Manual for Erosion and Sediment Control in Georgia", latest edition published by the Georgia Soil and Water Conservation Committee." Acquire and keep on-site throughout construction a copy of the latest edition of the “Field Manual for Erosion and Sediment Control in Georgia- Vegetative and Structural Best Management Practices (BMP’s) for Land Disturbing Activities” as published by the Georgia Soil and Water Conservation Commission sometimes referred to as the “little green book”. The Contractor is required to keep a log book on site documenting his inspection of all BMP’s (minimum once/week and within 24 hrs of any storm event) and noting any corrections or modifications. General Contractor must also file a “Notice of Termination” when the site is finally stabilized, and all stormwater management systems have been constructed and have been proven to be functioning in accordance with the Design Concept(s).

B. Reference the ESPC for any other procedural manuals, publications, permits or other field guidelines required for the Contractor to obtain, understand and utilize in the performance of his work. By reference of same, said materials are made a part of these Specifications.

PART 2 - PRODUCTS

2.1 FILTER FABRIC

A. Filter fabric for silt fences shall be a 36" Georgia DOT approved pervious sheet of synthetic polymer filaments non-woven from continuous filaments with wire fence backing. Filter fabric shall be of type recommended by its manufacturer for the intended application. The filter fabric shall meet the following requirements:
   1. Minimum average thickness: 30 mil (by ASTM D1777).
   2. Air permeability: 250 to 550 C.F.M./Sq. Ft.
   3. Minimum grab strength: 110 lbs. (by ASTM D1682).

2.2 FILTER STONE

A. Aggregate filter shall conform to following gradations:

Sieve Size	% by weight passing Square mesh sieve
3"	100
3/4"	20 - 90
No. 4	0 – 20

2.3 STONE FOR EXIT/ENTRANCE PAD

A. Stone shall comply with ASTM D448 size #1 (1 1/2" to 3 1/2").

2.4 EROSION CONTROL MATTING

A. All areas of disturbance (slopes greater than 2:1 or as specified): Refer to latest edition of “Manual for Erosion and Sediment Control in Georgia” for changes to the BMP’s listed below.
   1. Biodegradable netting impregnated with excelsior wood fiber such as manufactured by "Curlex";
   2. "Ero-Mat" by Verdyol;
   3. "Bon Terra CS2".

2.5 SYNTHETIC POLYMERS

A. For all newly disturbed, graded or exposed soil surfaces, apply 1.5 gals/acre of approved erosion control polymer. Erosion control polymer is a water-soluble synthetic polyacrylamide polymer suitable to be applied to disturbed soil surfaces where the polymer will chemically bind to fine clay particles and prevent clay from going into solution, such as:
   1. APS 600 Series Silt Stop, as manufactured by Applied Polymer Systems, Norcross, Georgia, Contact Steve Iwinski (678)461-9352.

2. Or approved equal.

B. Polymer shall be applied utilizing a hydro seeder mix of appropriate seed, fertilizer, lime and mulch for the same acre or without seed/fertilizer/lime/mulch mix.

C. Follow all manufacturer's instructions and recommendations. Do not mechanically disturb treated areas after application. *(This does not include foot traffic as necessary to install erosion control blanket.)*

D. Contractor shall furnish and install as necessary a minimum 200 lbs. of erosion control polymer for incidental "touch-up" or point source erosion areas."

E. Furnish two (2) forms of synthetic polymer:
1. Emulsion polymer for hydro seeder application with an active strength of 30%.
2. Powder polymer for hand spreading with an active strength of 95%.

2.6 RIP RAP

A. Rip Rap shall be granite stone with a minimum weight of one hundred fifty pounds (150 lbs.) per piece.

B. Place rip rap at both ends of proposed concrete culvert and safety end sections.

PART 3 - EXECUTION

3.1 TEMPORARY EROSION CONTROL DEVICES

A. Construct temporary sediment barriers of silt fence at all points where surface water flows from construction area bypassing temporary sediment traps if the area is subject to soil erosion; or as otherwise indicated on ESPC or as deemed necessary by inspectors.

B. Install temporary sediment traps and temporary sediment basins in accordance with the location and details shown on the ESPC. Remove accumulated sediment when they are one-third full of silt continually until permanent vegetative cover is established.

C. Install construction exit as indicated on ESPC with geotextile fabric underlayment. Maintain to prevent tracking and flow of mud onto public roads.

D. Construct diversion berms, dikes (2'-0" wide x 1'-6" tall) or ditches at the tops of all slopes or as otherwise indicated on the ESPC. Machine compact these elements and plant temporary seed until permanent vegetative cover can be established.

E. Maintain temporary barriers until permanent erosion control measures are established. Repair and replace barriers damaged or displaced by construction activity.

F. Contractor shall clean out and/or adjust temporary sediment basin(s)/facility elevations to specified depth throughout duration of project after stabilization of all disturbed areas. Compact dam of sedimentation basin to minimum 95% Standard Proctor to the grade elevations shown on the ESPC.

3.2 SEDIMENTATION FACILITIES

A. Construct temporary sedimentation facility prior to or concurrent with rough grading of site. Permanent sedimentation control measures shall be constructed concurrently with fine grading or partial fine grading of site and vegetative stabilization. Direct surface water into completed portions of sedimentation facility.

B. Maintain temporary sediment traps around at all drainage structures (both on-site and/or off-site) until permanent vegetative cover has been established to prevent washing of sediment into public storm drainage system. Utilize "pigs-in-a-blanket" temporary sediment traps at all completed or partially completed single wing or double wing catch basins, drop inlets and yard inlets.

C. Flush drainage lines between manholes and drainage structures as required during construction and after establishment of permanent erosion control measures to remove collected debris.

D. Install rip rap at all locations indicated on the ESPC or other drawings as soon as feasible. It shall be reasonably well-graded granite stone sized from smallest to maximum size specified. Stones smaller than smallest size specified is not permitted. Control gradation of rip rap by visual inspection to assure thickness of rip rap conforms with the contract document requirements. Provide geotextile filter fabric under rip rap.

E. After land disturbance operations of any kind, survey the sediment facility and determine that sediment volume that is available. If specified volume is not available, disassemble control measures, excavate sediment from facility and install control measures. Dispose of excavated sediment from facility, spread over slopes in accordance with contours shown on the Grading and Drainage Plan and stabilize facility with permanent vegetation. Prepare and submit a certified statement of correct sediment facility volume. Do not dispose of any excavated sediment into any drainage way which might lead said material off-site onto adjacent downstream properties.

F. The existing creeks and ponds shall not be used in any manner for Erosion, Sediment or Pollution Control measures. Protect same from all erosion, sediment or pollutants of any kind.

3.3 GROUND COVER

A. Protect all exposed soils with mulching (temporary measure) and vegetative ground cover (permanent measure).

B. Install "Curlex", "Bon Terra CS2" or "Ero-Mat" by Verdyol blanket on all slopes greater than 3:1along with vegetative cover unless otherwise indicated on the ESPC.

C. Temporary Seeding consists of ground cover of temporary plant material on all graded areas which will not receive final grading or permanent planting within three (3) days.

D. All grassing or planting operations shall include mulching as stabilization until ground cover by planting is effective.

E. Reseed as required until full vegetative coverage is established.

3.4 MAINTENANCE

A. Inspect all control elements after each rainfall event and a minimum of every two (2) weeks when no rainfall event(s) occur. Clear all debris and accumulated sediment from behind barriers when half full so their functional capacity is not reduced. Repair and replace any and all damaged measures of any kind.

B. Maintain all erosion, sedimentation, pollution control measures for delivery of correct pond volume for a period of thirty (30) calendar days.

3.5 REMOVAL OF TEMPORARY EROSION CONTROL DEVICES

A. As soon as permanent vegetative cover is established, Contractor shall remove temporary devices, including sediment barriers, berms, silt traps and similar devices. Contractor to remove retrofit structure and clean out all accumulated silt and debris in detention ponds to restore finished grades indicated on the ESPC.

B. Contractor shall remove all excess silt from behind all silt fences and other filter devices and utilize it to repair erosion features if necessary. If silt is not needed for repairs, it shall be removed from the site by the contractor.

C. Contractor shall remove silt fence in such a manner as to minimize damage to surrounding vegetative cover. All fence fabric, wire and posts shall be removed completely, and removed from the site.

D. All disturbed areas created by removal of silt fence shall be immediately fine graded, stabilized and seeded with permanent grass to match surrounding areas. All rocks and debris shall be removed from the site. Stabilization of disturbed areas may require the use of a "geo-jute" fabric to prevent erosion and allow for mowing of same area.

Erosion control fabrics with netting that will be entangled in mowers may not be acceptable in areas where mowing will occur. In the event seasonal considerations prevent establishment of permanent grass, Contractor shall establish temporary grass and return the following season to establish permanent grass.

E. Remove all debris resulting from temporary erosion control from project site.

F. Control dust from disturbed areas by means of mulching, irrigation, calcium chloride or other method subject to the Civil Engineer's review.

G. Should site conditions dictate that it is not prudent to remove all temporary erosion control devices at the time of Contractor demobilization; the Contractor must remobilize personnel and equipment to complete removal as soon as conditions allow. The Contractor will be responsible for the complete and timely removal of all temporary erosion control devices as soon as adequate permanent vegetative cover is established.

End of Section

SECTION 02 514

SITE CONCRETE

PART 1 - GENERAL

1.1 SCOPE

A. The work covered by this section consists of furnishing and installing Portland cement concrete for site improvements which may include concrete storm sewer pipe, concrete storm structures, concrete pavement patches, and any other concrete as indicated in Section 01 000, Project Scope & Performance Specification and on Construction Drawings.

1.2 SUBMITTALS

A. Submit design mix certified by the testing laboratory to be approved by Owner's Representative and paid for by Owner, for the mix design based on cylinder check tests verifying the design mix.

B. Submit mill certification certifying that cement, sand, aggregate, reinforcing steel and joint materials comply with the requirements of this Specification.

C. Submit shop drawings for review prior to placement showing bending and placing details for steel reinforcing including bar sizes, spacings, bending and tagging identification.

D. Submit complete manufacturer's catalog description of all joint materials and curing/sealing materials.

1.3 PROJECT CONDITIONS

A. Installation shall comply with all state and local laws, ordinances, rules and regulations.

B. Contractor shall obtain all required permits prior to start of construction.

C. Survey and maintain all benchmarks, monuments and other reference points, and if disturbed or destroyed, replace by registered Georgia land surveyor at no cost to Owner.

D. Provide proper drainage during construction in a manner to prevent damage to the work, adjoining structures and adjoining and downstream property.

E. Patching parts of a section of work between joints shall not be permitted. Remove and replace entire damaged sections when matching existing work.

1.4 QUALITY CRITERIA

A. All work and materials shall conform to the applicable standard specifications for roadway construction of the Georgia State Department of Transportation where the construction occurs.

B. All work shall be performed in accordance with ACI 301.

1.5 GUARANTEE

A. Site Concrete Contractor to provide Owner's Representative a written guarantee that all work is of good quality, free from faults and defects and in conformance with these Specifications; and that if, within one year after completion and acceptance of the Work, any Work or materials are found to be defective, Contractor will promptly, without cost to Owner, correct such defective Work or materials.

PART 2 - PRODUCTS

2.1 BASE COURSE MATERIALS

A. Base course shall be constructed of structural fill.

2.2 CONCRETE

A. Concrete shall be 3,000 psi concrete shall be in compliance with ASTM C94.

B. Cement shall comply with ASTM C150 normal Type I specifications.

C. Aggregates shall comply with ASTM C33.

D. Water shall be potable.

E. No additives shall be used without prior review of Owner’s Representative.

2.3 REINFORCING STEEL

A. Reinforcing bars and dowels shall conform to ASTM A615, Grade 60, deformed bars with an uncoated finish.

B. Welded wire fabric shall consist of deformed bars, furnished in flat sheets or coiled rolls with an uncoated finish, and shall conform to ASTM A-185.

C. Tie wire shall be 16-gauge annealed steel.

2.4 JOINT MATERIALS

A. Expansion joint filler shall be non-extruding and resilient types conforming to AASHTO M-213 or M153.

B. Poured joint sealer shall be a hot poured elastic type sealer intended for sealing joints in concrete pavements and shall conform to AASHTO M-173.

2.5 CURING AND SEALING MATERIALS

A. Curing/sealing compound shall be "CS-309" as manufactured by W. R. Meadows.

2.6 FORM MATERIALS

A. Form materials shall comply with the requirements of ACI 301.

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to placement of base material, installer shall inspect the site grading and ensure that the sub-grade has been properly placed, compacted, and is ready to receive the base material. He shall also determine that all site drainage, piped site utilities, underground electrical and communications conduits have been installed, tested and accepted by Owner's Representative.

3.2 PREPARATION

A. Contractor shall submit to Owner's Representative for review all materials to be used in the base and pavements.

B. Contractor shall repair subgrade as necessary to provide uniform surfaces.

C. Spread base material and compact to 95% Maximum Theoretical Density and within 1/8 inch of required grade.

D. Check field density with nuclear density device or other method acceptable to Owner's Representative.

E. Set forms on firm foundation, true to grade and securely fastened in place. No settlement or springing of forms under the finishing machine will be allowed. Top face shall not vary from a true plane by more than 1/8 inch in 10 feet. Vertical sides shall not vary from a true plane by more than 1/4 inch.

F. Clean and oil all forms prior to use.

G. Provide work bridges where necessary for finishing, straight edging, making corrections, etc. to surface after concrete has been screeded. Bridges shall be rigidly constructed and easily moveable so that they will not come into contact with the concrete.

H. Check alignment and grade elevations of forms and obtain approval of preparation and form work from Owner's Representative prior to placement of concrete.

3.3 INSTALLATION OF CONCRETE CULVERT AND DRIVEWAY APRONS

A. Place reinforcement in accordance with Performance Specification and secure by means of chairs, clips, etc. as necessary.

B. Excavate drain pockets for all weep holes, if any and fill with coarse aggregate. Provide pipes, sleeves, or formed openings as indicated in Performance Specification.

C. Place concrete in a manner to avoid segregation. Spread to the full width and depth of forms and bring to grade by screeding and straight edging.

D. Give aprons a heavy broom finish with smooth trowel edges as shown on the drawings. Final surface shall not vary from a true plane by more than 1/4 inch in 10 ft. Provide sealer for all sidewalks and apply in accordance with manufacturer's recommendations.

E. Workmanship and appearance shall be of the highest quality.

F. Provide joints as shown on the Drawings.

G. Provide proper curing for the sidewalks using liquid curing/sealing compound.

H. Thoroughly clean all joints immediately prior to sealing and acid and/or pressure wash concrete prior to sealing as directed by Owner’s Representative. Apply sealant as soon as possible after required curing period of concrete. Prohibit traffic on sealed surfaces until sealer has cured.

3.4 CLEANING

A. All concrete shall be acid washed and/or pressure washed at substantial completion by Contractor if required by Owner's Representative to achieve the desired appearance.

End of Section

SECTION 02 547

BITUMINOUS SURFACING

PART 1 - GENERAL

1.1 DESCRIPTION: Work described in this section includes but is not limited to providing full depth asphalt pavement replacement, milling, deep patch asphalt replacement, asphalt tack coats, and asphalt binder course, and surface course as indicated on the Drawings.

1.2 QUALITY ASSURANCE

A. Reference Specifications: "Georgia Department of Transportation, Standard Specifications for Construction of Transportation Systems" 2021 or latest edition, hereafter referred to as GDOT Standard Specifications.

B. Requirements of Regulatory Agencies: Comply with applicable codes, ordinances, rules, regulations, and laws of local, municipal, state, or federal authorities having jurisdiction, the Georgia DOT and City of Dacula Development Regulations.

C. Pavement area shall be inspected by Owner and Owner's Representative. Contractor shall correct any deficiencies in material makeup, strength, or quantities revealed.

D. Recycled asphaltic concrete must be approved by City of Dacula before it is allowed to be used on any projects for either binder or top course.

1.3 SUBMITTALS

A. Submit manufacturer's data, reports, and material certifications as required to certify compliance with the specifications.

1.4 JOB CONDITIONS

A. Grade Control: Establish and maintain required lines and elevations. Minimum slopes leading to catch basins on curb inlets shall not be less than 1" in 8' (1.04%).

B. Contractor shall build up centerline of road with new asphalt pavement to create new crown in road sloping from centerline to curb & gutter.

C. Utility Installations: No paving work shall be started until all utility installations which will be covered by pavement have been completed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Paving Base Course: Crusher run grade aggregate consistent with the Reference Specifications, Paragraph 3.2 A, compacted to 95 % Proctor. Aggregate shall be crushed stone consisting of hard durable rock fragments free from clay and reasonably free from flat, elongated, or soft pieces of organic matter. It shall be graded 2" and down, if required.

B. Materials for hot mix asphaltic concrete construction to be as given in Reference Specifications, Paragraph 400.02 of the Georgia D.O.T. Standard Specifications.

1. Materials: Bituminous concrete materials shall meet the following gradation specifications:

SEIVE SIZE	PERCENT Intermediate or Leveling Course (Type "B")	PASSING Surface Course (Top) (Type "F")
1"	100	
3/4"	90 - 100	
1/2"		100
3/8"	40 - 70	90 - 100
No. 4		50 - 85
No. 8	25 - 40	40 - 55
No. 16		
No. 50		
No. 200	0 - 10	0 - 10
Percent Bitumen	4.2 - 7	5.2 - 9.0
Penetration Grade	85 - 100	85 - 100

C. Asphalt Tack Coat shall be installed between milled section and asphalt binder course and between asphalt binder course and asphalt surface course (0.05 – 0.15 GAL per SY).

PART 3 - EXECUTION

3.1 SUB-GRADE PREPARATION

A. Contractor shall proof-roll sub-grade in the presence of the Owner prior to installing base course material. The sub-grade if required due to unsuitable materials being present shall be cleared of all rocks, loam, debris, vegetation, roots, and foreign matter, to a depth of 12 inches below its finish grade.

B. Contractor shall protect the sub-grade from damage and maintain it in a smooth, compact, and rut-free condition until the base course has been placed.

3.2 PAVING BASE COURSE

A. Paving Base Course shall be constructed of grade aggregate and construction shall be done in accordance with Sections 310.01, 310.03, 310.04 of the Georgia D.O.T. Standard Specifications except that the use of automatically controlled screed equipment will be at Contractor's option.

3.3 BITUMINOUS PAVING

A. Bituminous paving shall be hot mix asphaltic concrete construction conforming to Sections 400.01, 400.03, 400.04, 400.05, 400.07, 400.08, of the Georgia D.O.T. Standard Specifications except that Section 400.04 shall be modified as follows: The job mix formula shall be submitted by Contractor to Owner's Representative for his approval, and
such approval does not relieve Contractor of his responsibilities for adequacy and warranty of the paving.

3.4 BITUMINOUS PRIME

A. Bituminous prime shall conform to Georgia D.O.T. Standard Sections 412.01, 412.02, 412.03, 412.04 of the Standard Specifications.

3.5 PAVING THICKNESSES SHALL BE AS FOLLOWS

A. All areas of Asphalt Milling and Repaving for McMillan Road shall receive:

Minimum Thickness

1. Asphalt Milling..... 2-1/2"
2. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
3 'D' Mix (Metro-Flex or equivalent 'D' Mix) Asphalt Course ..... 1"
4. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
5. Type 1 – 'F' Mix (9.5 mm) Asphalt Surface Course ..... 1-1/2"

B. All areas of Asphalt Deep Patch Milling and Repaving (only if subgrade or deteriorated pavement warrant additional repair and shall be approved by Engineer and City prior to milling) shall receive:

Minimum Thickness

1. Asphalt/Subgrade Deep Patch Milling (in addition to 2-1/2" milling above; 6" milling total)) ..... 3-1/2"

2. 25 mm Asphalt Binder Course ..... 3-1/2″
3. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
4. 'D' Mix (Metro-Flex or equivalent 'D' Mix) Asphalt Course ..... 1″
5. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
6. Type 1 – 'F' Mix (9.5 mm) Asphalt Surface Course ..... 1-1/2″

C. All areas of Heavy Duty Asphalt Paving for McMillan Road shall receive:

Minimum Thickness

1. Graded Aggregate Base..... 10″
2. 25 mm Superpave Binder..... 4″
3. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
4. 19 mm Superpave..... 2″
5. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
6. Type 1 – 'F' Mix (12.5 mm) Asphalt Surface Course ..... 1-1/2″

D. All areas of Standard Duty Asphalt Paving for McMillan Road shall receive:

Minimum Thickness

1. Graded Aggregate Base..... 10″
2. 25 mm Superpave Binder..... 4″
3. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
4. 19 mm Superpave..... 2″
5. Asphalt Tack Coat..... (0.05 – 0.15 gallons per S.Y.)
6. Type 1 – 'F' Mix (12.5 mm) Asphalt Surface Course ..... 1-1/2″

E. 'D' Mix (Metro-Flex) Asphalt Course or equivalent 'D' Mix is required. Contractor to submit Job Mix Formula to Engineer for review.

F. All asphalt pavement shall have a minimum slope of 1/8" for each 1'. Maintain existing cross slope of all roads. See asphalt details as illustrated on the Drawings.

3.6 ASPHALT PAVEMENT PATCHING, if required:

A. Asphalt pavement patching shall be performed for those sections of roadway as indicated in the Scope of Work and Performance Specification.

B. Work includes removing, transporting, and disposing of the removed asphalt pavement material; and cleaning the remaining pavement surface.

C. All demolished material shall be taken to a State Approved Facility at no additional cost to Owner.

3.7 BITUMINOUS TACK COAT, if required.

A. Apply asphalt tack coat over concrete base course only if required immediately prior to spreading Asphalt Surface Course materials.

B. Quantity:

1. Apply from 0.05 to 0.15 gallons per square yard of surface to be covered as directed by Engineer.
2. Emulsified asphalt shall be diluted with an equal part of water.

C. Application:

1. Apply tack coat by means of a bituminous distributor so that a uniform distribution is obtained at all points.
2. Apply tack coat on each layer of the binder course and allow tack coat to cure before placing the succeeding course.
3. Apply tack coat only as much pavement as can be covered with asphalt aggregate mixture in the same day.

3.8 MAINTENANCE

A. Contractor shall maintain the wearing surface until approved by Owner.

B. Contractor shall warrant the paving free of construction defects for a period of one Year after acceptance by Owner.

End of Section

SECTION 02 720

SITE DRAINAGE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work described in this section includes, but is not limited to, construction of primary and secondary storm sewer pipe, storm structures, and drainage appurtenances, as indicated in Section 01 000, Project Scope & Performance Specification and on Construction Drawings.

1.2 SUBMITTAL

A. Product data: Submit for each type of piping material, prefabricated structure, and casting. Indicate product descriptions and installation procedures.

B. As-Builts: Contractor shall provide Owner with two (2) copies of an "as-built" plan of all storm sewer pipe and structure improvements and any changes to underground utilities (water or gas meter service relocations) illustrating the location of each with dimensions illustrated to the houses, property lines, and/or curb line from each underground utility after construction is complete.

C. In the event that site drainage structures are not maintained during the construction process to the satisfaction of City of Dacula, an interim as built may be required to establish the extent of deficiencies.

D. See Section 02 720, 3.3A for As-Built Record Drawings submittals.

1.3 QUALITY ASSURANCE

A. Industry standards: Standards for the following, as referenced hereinafter.

1. American Society for Testing and Materials (ASTM).
2. American Concrete Institute (ACI).
3. Georgia Department of Transportation, "Standard Specifications for Construction of Transportation Systems" 2021 or latest edition, hereinafter referred to as Georgia D.O.T. Specifications.
4. City of Dacula Development Regulations, Latest Revision.
5. Gwinnett County Development Regulations, Latest Edition.

1.4 GUARANTEE

A. Contractor shall guarantee the construction of all storm drainage for a period of one (1) year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PIPING

A. Storm drainage pipe is to be of the type, size, class or gauge, and material illustrated in the Project Scope and Performance Specification and as indicated on the Drawings.
B. High Density Polyethylene Pipe (HDPE) and Reinforced Concrete Pipe (RCP) are to be used for this project as illustrated on the Drawings.
C. Reinforced concrete pipe, concrete headwalls, concrete storm structures, and safety flared end sections, as illustrated on the Drawings, shall conform to Georgia D.O.T. Standard Specifications.

2.2 CONCRETE, MASONRY AND ACCESSORY MATERIALS

A. Concrete: 4000 psi compressive strength including form work, reinforcement and finish.

B. Manhole brick: Meeting ASTM C32-73, Grade MM.

C. Mortar: Meeting ASTM C270-80, Type M.

D. Construction castings: Meeting ASTM A48-76, grey cast iron.

E. Manhole steps: Meeting ASTM A48-76, Class 30B, integrally cast into manhole sidewalls.

F. Gravel Fill: Meeting Ga. D.O.T. Specifications, Section 800, size #57 stone.

G. Precast concrete manholes: Meeting ASTM C478-79, concentric cone type.

2.3 REINFORCING STEEL

A. Reinforcing bars and dowels shall conform to ASTM A615, Grade 60, deformed bars with an uncoated finish.

B. Welded wire fabric shall consist of deformed bars, furnished in flat sheets or coiled rolls with an uncoated finish, and shall conform to ASTM A-185.

C. Tie wire shall be 16 gauge annealed steel.

PART 3 - EXECUTION

3.1 CONSTRUCTION OF DRAINAGE SYSTEM

A. Excavation, filling and compaction for construction of drainage system shall be in accordance with Earthwork Section 02 200.

B. Inspect piping prior to placing in trenches. Install no defective or damaged piping.

C. Lay piping beginning at low point of the drainage system with joints lapped upgrade. Lay in proper alignment and to slopes indicated, fully supported on firm subgrade.

D. Clean interior of piping of dirt and debris as work progresses. Place plugs in the ends of uncompleted piping at the end of each work period. Continue to flush lines between manholes and drainage structures as required to remove collected debris until permanent vegetative cover has been established.

E. Lengths of storm drainage pipe illustrated in the Project Scope and Performance Specification are approximate distances center to center of structures. Contractor is responsible for all pipe quantities to convey storm drainage to points indicated in accordance with the design concept illustrated.

3.2 DRAINAGE STRUCTURES

A. Construct catch basins, drop inlets, headwalls and similar structures of reinforced concrete unless otherwise indicated, manholes of masonry, concrete or precast units at Contractor's option.

B. Provide concrete foundations for manholes and other structures as indicated. All drainage structures shall have paved (mortar) inverts.

C. Concrete structures shall be reinforced as indicated in the Project Scope and Performance Specification.

D. All concrete construction shall receive a smooth formed finish in accordance with ACI-301-72 on all surfaces exposed to exterior or interior of structure; rough formed for all unexposed construction.

E. Moist cure concrete for a minimum of seven days after placing.

F. Mix mortar with only enough water for workability. Re-tempering of mortar will not be permitted. Keep mortar mixing and conveying equipment clean. Do not deposit mortar upon or permit contact with ground.

G. Lay masonry in full mortar bed with ends and with full vertical joints, not more than 5/8" wide. Protect fresh masonry from freezing and from too rapid drying.

H. Apply a 2"thickness mortar parge coating on interior and exterior or of masonry walls surfaces.

I. Set tops of frames and covers of manholes flush with finished surface.

J. Set drainage gratings to elevations indicated in the Project Scope and Performance Specification.

3.3 AS-BUILT RECORD DRAWINGS

A. Furnish two (2) sets of reproducible As-built Drawings of all portions of the storm sewer system(s) including the horizontal and vertical locations of all pipe structures, clean out connections and the relationship of storm sewer to all other built items in plan and profile. As-builts shall be prepared and sealed by a Georgia Registered Land Surveyor and shall be considered an accurate representation of the built storm sewer system.

End of Section

SECTION 02 930

LAWNS AND GRASSES

PART 1 - GENERAL

1 DESCRIPTION: Work described in this section consists of the establishment of grassing of 100% of all areas disturbed by driveway apron replacement, ditch regrading, storm sewer pipe installation, yard regrading, storage of equipment, except the area covered by paving or those areas designated for other plant materials as indicated in Section 01 000, Project Scope & Performance Specification and on Construction Drawings.

PART 2 - PRODUCT

2.1 FERTILIZER: Fertilizer shall be 19-19-19 grade, uniform in composition, free-flowing for application with spreading equipment, delivered to the site in bags or other containers, each fully labeled, conforming to the State fertilizer laws, and bearing the name, trade name, or trade-mark, and warranty of the producer. Engineer shall be furnished with duplicate copies of invoices for all fertilizer used on the project.

2.2 LIME: Ground limestone containing not less than 85% carbonates; 50% passing 100 mesh sieve and 90% passing 20 mesh sieves.

2.3 GRASS SEED: Shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of Invitation of Bids. Seed shall be furnished in sealed standard containers, unless exception is granted in writing by Engineer. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable. Seed shall be guaranteed 92% germination.

A. Kentucky 31 Fescue (Fescuta Elatior). Seed: Fresh, clean, new seed testing 98% for purity and 85% for germination. September 15 - May 15.

B. Common Bermuda (Cynolon Dactylon) Seed: Fresh, hulled, clean, new seed testing 98% for purity and 85% for germination. May 15 - September 15.

2.4 SOD: Sod replacement is required in all yards, ditches, and swales that are regraded for storm sewer pipe installation and other fine graded areas within Property Owners yards. Contractor shall replace Sod with Bermuda or match in-kind with and match existing condition. All other permanent grassing shall be Bermuda Seed.

2.5 WATER: Water used in this work shall be suitable for irrigation and free from ingredients harmful to plant life. Furnish hose and other watering equipment required for the work.

2.6 HYDROMULCH: Wood cellulose fiber containing no germination inhibiting or growth inhibiting agents. Characteristics shall be as follows:

A. Percent moisture content: 9.0% (± 3, 0%).

B. Percent organic mater: 99.2% (± 0.8%).

C. Percent ash content: 0.8% (± 0.2%).

D. pH: 4.8 (± 0.5).

E. Water holding capacity: 150 grams water/100 grams fiber, minimum.

PART 3 - EXECUTION

3.1 FERTILIZER: Fertilizer shall be distributed uniformly at a rate of 800 pounds per acre, plus 1 ton agricultural lime per acre two (2) days prior to seeding, over the areas to be grassed, and shall be incorporated into the soil to a depth of at least 3 inches by disking or harrowing. The incorporation of fertilizer may be part of the tillage operation specified above. Undulations in the surface as a result of tillage or fertilizing shall be smoothed.

3.2 Approximately 4 weeks after seeding and when grass coverage has been established, apply 1 to 1 ½ pounds of ammonium nitrate per 1,000 square ft. to all seeded areas and immediately water using a fine spray. At the end of the maintenance period and prior to final inspection, apply 10 lbs. of specified fertilizer per 1,000 sq. ft. and water immediately.

3.3 SEED: Seed shall be Fescue or Bermuda. Method of seeding shall be hydro seeding or broadcast at Contractor's option; however, the method selected shall be a part of his erosion control plan.

3.4 BROADCAST SEEDING:

A. If conditions are such, by reason of drought, high winds, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, Contractor shall stop the work, and work shall be resumed only when conditions are favorable again or when approved alternate or corrective measures and procedures have been put into effect. If inspection during seeding operations or after there is a show of green indicates that strips have been left, or skipped, Contractor shall sow additional seed on these areas.

B. Seeding shall be at the rate of 10 pounds per 1,000 sq. ft. for Fescue or 5 pounds per 1,000 sq. ft. for Bermuda.

C. Seed shall be broadcast either by hand or approved sowing equipment. The seed shall be uniformly distributed with the sower moving in one direction, and the remainder shall be sown with the sower moving at right angles to the first sowing. The seed shall be covered to an average depth of 1/4 inch by means of a brush harrow, spike-tooth harrow, chain harrow, cultipacker, or other approved device.

3.5 HYDROSEEDING: Apply seed/fertilizer/hydro mulch mixture in water slurry. Dispense using hydraulic mulching equipment in following minimum quantities:

A. Fertilizer: 130 lbs./acre.

B. Fescue Seed: 300 lbs./acre/Bermuda seed 150 pound/acre.

C. Hydromulch: 1500 lbs./acre.

3.6 SOD: All disturbed areas for this project shall be permanent stabilized with Bermuda Sod or Sod which matches in-kind to the existing condition. Areas shall be fine graded smooth with surrounding existing condition and prepped for Sod installation per sod manufacturer's recommendation. All disturbed areas shall be raked free of rocks and debris over ½" in diameter.

3.6 COMPACTION: Immediately after the seeding operations specified above have been completed, the entire area shall be compacted by means of a cultipacker, roller, or other approved equipment weighing 60 to 90 pounds per linear foot of roller. If the soil is of such type that a smooth or corrugated roller cannot be operated satisfactorily, a pneumatic roller shall have tires of sufficient size so that complete coverage of the soil surface is obtained. When a cultipacker or similar equipment is used, the final rolling shall be at right angles to the prevailing winds to prevent dust.

3.7 CLEAN-UP: Remove from the site and dispose of all debris and foreign material. During the grassing operations, debris shall not be dumped on any part of the property or on any unauthorized placed.

3.8 MAINTENANCE:

A. Contractor shall be responsible for establishment and proper care of the grassed areas during the period when the grass is becoming established and until final acceptance by Owner.

B. Maintenance shall consist of watering, weeding, repair of any erosion and reseeding as necessary to establish a 100% uniform stand of grass and shall continue until acceptance.

C. All seeded areas that do not show satisfactory growth within 18 days after seeding shall be re-seeded and re-fertilized as directed until a satisfactory lawn is established. Full coverage is required in 60 days.

D. All lawn areas shall be protected until acceptance. All eroded and damaged areas, regardless of cause, shall be immediately repaired and reseeded. Protect all lawn areas from pedestrian or vehicular traffic.

3.9 GUARANTEE AND ACCEPTANCE:

A. All disturbed areas must be 100% covered and final stabilized with 80% grassing established.

End of Section

SECTION 02 933

TEMPORARY SEEDING

PART 1 – GENERAL

1.1 SCOPE

A. The work covered by this section consists of the establishment of a temporary vegetative cover on all disturbed areas caused by driveway apron replacement, culvert replacement, storm sewer pipe installation, regrading for ditch and yards, or storage of equipment by seeding with appropriate rapidly growing grass seed. Temporary seeding shall be provided for all exposed soil surfaces that are not to be fine graded or landscaped within 30 days after fine grading.

1.2 PROJECT CONDITIONS

A. Protect all adjacent public and private property from siltation and other damage due to construction activities with silt dams or fences as indicated on the drawings.

B. Temporary seeding shall be applied to any, and all disturbed areas left idle for two weeks and shall be applied no later than the 15th calendar day from last land disturbance activity. (ie. clearing, grubbing, or grading).

1.3 QUALITY CRITERIA

A. Installation shall be in strict compliance with the rules and regulations of the local seed laws.

B. Installation shall comply with all applicable codes, rules, regulations, and ordinances related to erosion control and temporary seeding.

PART 2 – PRODUCTS

2.1 TEMPORARY SEED

A. Select temporary grass seed appropriate to the season and site conditions. Temporary grass shall be a quick growing species such as millet, rye grass, Italian rye grass or cereal grasses suitable to the area providing a temporary cover which will not later compete with grasses sown for permanent cover. Seed shall meet the requirements of the rules and regulations of the Georgia Seed Law.

2.2 LIME

A. Provide agricultural grade ground or pulverized limestone. Lime shall contain not less than 85% carbonates with 50% passing a 100 mesh sieve. Lime shall have tested values of 90% minimum germination and 1% maximum weed content.

2.3 FERTILIZER

A. Provide standard commercial grade fertilizer, either 4-12-12, 6-12-12 or 5-10-15 as required for conditions.

PART 3 – EXECUTION

3.1 SEED-BED PREPARATION

A. Where soils are known to be highly acid (pH 5.5 and lower), apply lime at the rate of two (2T) tons per acre (1#/10 s.f.).

B. Apply fertilizer at a rate of 450 lbs./acre (10 #/1,000 s.f.). Lime and fertilizer shall be incorporated into the top two (2") to four (4") inches of the soil by tilling.

C. Loosen ground surface by discing, raking or harrowing. If the area has been recently loosened or disturbed, no further roughening shall be required. Remove all large clods, boulders and debris which will interfere with the work. Remove all stones two (2") inches and larger in any given dimension.

3.2 SEEDING

A. Apply seed evenly with a cyclone seeder, drill, cultipacker seeder or hydroseeder. Small grains shall be planted no more than one inch deep. Grasses and legumes shall be planted no more than 1/4 inch deep. Distribution by hand shall not be permitted.

3.3 ROLLING

A. Roll all seeded areas before applying mulch. On steep slopes cover seeds by dragging spiked chains or similar methods.

3.4 MULCHING

A. All seeding in fall for winter cover shall be mulched. Seedings on slopes 4:1 or greater, on adverse soil conditions and in excessively hot or dry weather shall also be mulched.

B. Mulch shall be straw or hay spread at the rate of approximately two tons/acre, wood cellulose fiber applied at the rate of approximately 1500 lbs./acre. Bituminous treated mulch shall be used on all slopes steeper than 2:1.

C. Seedings made during optimum spring and summer seeding dates, with favorable soil and site conditions shall not require mulch if written permission is received by Engineer.

3.5 WATERING

A. Provide watering as required to establish and maintain healthy vegetative cover.

3.6 RESEEDING

A. Reseed and provide straw cover for bare areas 1 s.f. and larger to establish and maintain vegetative cover and to prevent sheet and rill erosion. Repair erosion damage as required and reseed.

End of Section

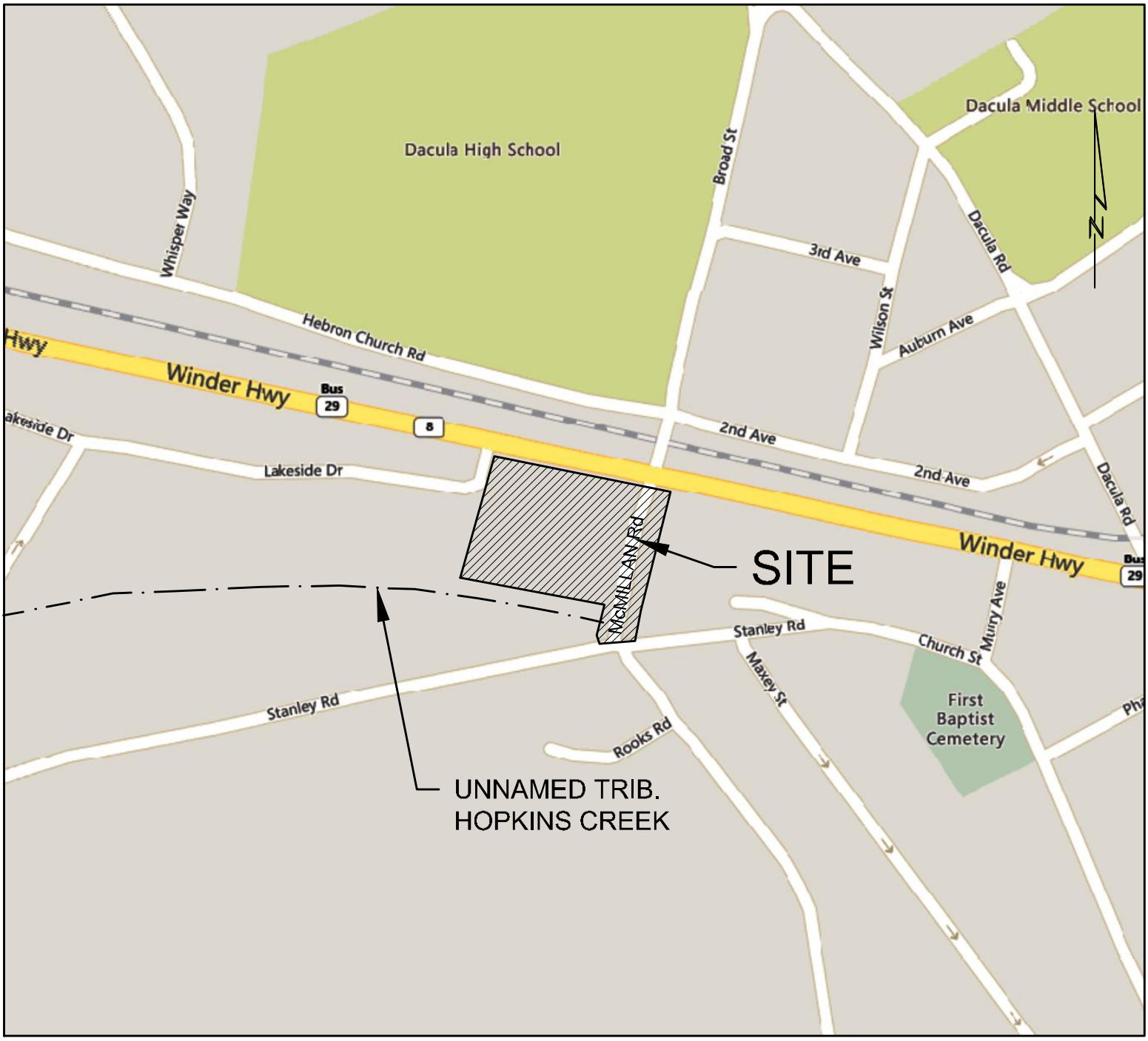
APPENDIX

for

City of Dacula

"McMillan Road Stormwater Project" Project

- Location Map
- Reference "McMillan Road Stormwater Project" Drawings dated 06-24-2022



VICINITY MAP

NOT TO SCALE