CITY OF DURHAM, NORTH CAROLINA

PROJECT MANUAL

INCLUDING

BIDDING DOCUMENTS, CONTRACT DOCUMENTS, AND TECHNICAL SPECIFICATIONS

FOR

CONTRACT: SW-26

2011 SIDEWALK CONSTRUCTION

Engineering Division
Department of Public Works
101 City Hall Plaza, Durham, North Carolina 27701

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CONTRACT: SW-26

2011 SIDEWALK CONSTRUCTION

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF DURHAM, NORTH CAROLINA

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CITY OF DURHAM
MAYOR AND CITY COUNCIL

William V. Bell, Mayor

Cora M. Cole-McFadden
Eugene A. Brown
Diane N. Catotti
Howard Clement, III
J. Michael Woodard
Farad Ali

CITY OR DURHAM
STAFF

Thomas J. Bonfield, City Manager
Patrick W. Baker, City Attorney
D. Ann Gray, City Clerk
Ed Venable, Manager of Engineering and Stormwater Services

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DOCUMENT 00 01 10

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END OF SECTION

DOCUMENT 00 11 16

INVITATION TO BID

Contract: SW-26

Project: Sidewalk Construction

Owner:

City of Durham
101 City Hall Plaza
Durham, North Carolina 27701

Engineer/Issuing Office:

Attention: Byron E. Brady, PE, CPESC
City of Durham
Department of Public Works
Engineering Division
101 City Hall Plaza
Durham, North Carolina 27701
(919) 560-4326 ext. 30296

Date: November 30, 2010

The City of Durham will open sealed formal Bids submitted by prequalified Bidders at 2:00 P.M. on Wednesday, January 5, 2011 for Contract SW-26, Project: 2011 Sidewalk Construction in the Department of Public Works Conference Room, Third Floor, 101 City Hall Plaza, Durham, North Carolina. The Project involves the furnishing of all materials, labor, equipment, tools, etc. unless otherwise specified, for the complete installation of new sidewalk at five locations throughout the City of Durham.

The Project Manual may be viewed and downloaded, free of charge, from the City of Durham, Department of Finance, Purchasing Division web site:
http://www.durhamnc.gov/departments/purchasing/bids.cfm.
This information, as well as other details specific to the project, is also available on the City's project website
http://www.durhamnc.gov/departments/works/construction_projects.cfm

City of Durham Street Construction Specifications as well as Water and Sewer Construction Specifications may be downloaded free of charge at:
http://www.durhamnc.gov/departments/works/engineering.cfm

Hard copies of City of Durham Street Construction Specifications purchased for $5.00 each and hard copies of the City's Water and Sewer Construction Specifications may be purchased for $10.00 each.

Bidders are encouraged to attend the pre-Bid conference at 3:00 P.M. Wednesday, December 15, 2010 in

the Department of Public Works Conference Room 3B, Third Floor, 101 City Hall Plaza, Durham, North Carolina.

Only Bids submitted by prequalified Bidders will be considered. SDBE Contractor Prequalification Forms are to be submitted to the City of Durham Department of Equal Opportunity/Equity Assurance (EO/EA). The deadline for submitting completed Prequalification Forms is Thursday, December 23, 2010 at 4:00 P.M. Prequalification Forms can be downloaded from the EO/EA web site: http://www.durhamnc.gov/forms/equal_prequalification.pdf.

SDBE Contractor Prequalification Forms are also available in Appendix D of the Project Manual.

Each Bidder must be licensed under Chapter 87 of the North Carolina General Statutes. The City Council of the City of Durham reserves the right to reject any or all of the Bids. All Bids must include a non-collusion affidavit.

To ensure that all Bidders using the Purchasing Division's web site are kept up to date on any Addenda, changes, or information notices, please send an e-mail to byron.brady@durhamnc.gov indicating your intention to prepare a Bid for the Project. Failure to complete this step may render your Bid as non-responsive.

Each Bidder is advised that the Work may be inspected and supervised by an Engineer or firm under the direction of the City of Durham. The Engineer or firm may also be involved in the identification of specific repair areas and the proposed method of repairs for the Site Work.

Contract: SW-26, Project: 2011 Sidewalk Construction

The City of Durham requires the Project to be completed in 365 calendar days from date of Notice to Proceed for Construction.

No Bid shall be considered or accepted unless at the time of its filing the same shall be accompanied by a deposit of cash or a certified or cashier's check drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation (FDIC), in an amount equal to five percent (5%) of the amount of the Bid. The check shall be made payable to the City of Durham. Said deposit shall guarantee that the Contract will be entered into by the successful Bidder if the award is made. Such deposit of cash or certified or cashier's check may be held by the City until the successful Bidder has executed and delivered the Contract Documents, including performance and payment bond, to the City of Durham and returned or kept in accordance with North Carolina General Statute 143-129.

Refer to other Bidding requirements described in Document 00 21 15 and Document 00 31 00.

In lieu of the cash deposit or certified or cashier's check mentioned above, the Bidder may file a Bid bond in the same amount executed by a corporate surety authorized to execute such bonds in North Carolina and conditioned as provided by North Carolina General Statute 143-129 and in the form attached to the Bidding Documents (see Appendix F) or on file with the Engineer. Bid bond forms enclosed as part of the Bidding Documents must be properly executed at the time Bids are submitted before Bid will be considered. Properly executed Power of Attorney of the corporate surety's agent shall accompany such bond and be attached to the page provided therefore in the Bidding Documents.

Bids shall be submitted under a condition of irrevocability, except as required by law, for a period of ninety (90) days after Bid opening.

The City of Durham reserves the right to accept or reject any or all Bids.

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DOCUMENT 00 21 15

INSTRUCTIONS TO BIDDERS - EJCDC

1.1 SUMMARY

A. Document Includes:
1. Defined terms.
2. Copies of Bidding Documents.
3. Qualifications of Bidders.
4. Examination of Bidding Documents, other related data, and Site.
5. Pre-Bid conference.
6. Site and other areas.
7. Interpretations and Addenda.
8. Bid security.
9. Contract Times.
10. Liquidated damages.
11. Substitute and “or-equal” items.
12. Subcontractors, suppliers, and others.
13. Preparation of Bid.
14. Basis of Bid; comparison of Bids.
15. Submittal of Bid.
16. Modification and withdrawal of Bid.
17. Opening of Bids.
18. Bids to remain subject to acceptance.
19. Evaluation of Bids and award of Contract.
20. Contract security and insurance.
21. Signing of Agreement.
22. Sales and use taxes.

B. Related Documents:
1. Document 00 11 16 - Invitation to Bid.
2. Document 00 31 00 - Available Project Information.
3. Document 00 41 43 - Bid Form - Unit Price (Single-Prime Contract).
4. Document 00 72 15 - General Conditions – EJCDC Stipulated Sum (Single-Prime Contract).
5. Bond types and values.

C. Notice of Bidding Documents and Contract Documents Provision Changes and Updates
1. The Bidder is advised that these Bidding Documents and Contract Documents include numerous changes, revisions, and updates from prior City of Durham contracts.

1.2 DEFINED TERMS

A. Refer to Article 1 of the General Conditions.

1.3 COPIES OF BIDDING DOCUMENTS

A. The Bidding Documents are identified as "Project Manual including Bidding Documents, Contract Documents, and Technical Specifications for Contract No. SW-26, Project: 2010 Sidewalk Construction."

B. Bidding Documents are on file in the Department of Public Works, Engineering Division, Third Floor, 101 City Hall Plaza, Durham, North Carolina. Copies of the Bidding Documents and Project Manual may be viewed and downloaded from the City of Durham, Department of Finance, Purchasing Division web site: http://www.durhamnc.gov/departments/purchasing/bids.cfm.

To ensure that all Bidders using the Purchasing Division's web site are kept up to date on any Addenda, changes, or information notices, please send an e-mail to byron.brady@durhamnc.gov indicating your intention to prepare a Bid for the Project. Failure to complete this step may render your Bid as non-responsive.

C. Complete sets of Bidding Documents shall be used in preparing Bids; neither the City of Durham nor the Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

D. Upon receipt of Bidding Documents, Bidder shall verify that the Bidding Documents are complete. The Bidder shall notify the Engineer if they have received incomplete Bidding Documents.

E. The City of Durham and Engineer, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

1.4 QUALIFICATIONS OF BIDDERS

A. The Contractor must be prequalified with the City of Durham at the time of the Bid opening. Bidders must submit the completed Small Disadvantaged Business Enterprise (SDBE) Contractor Prequalification Forms to the City of Durham Department of Equal Opportunity/Equity Assurance (EO/EA), by the deadline for submission of these forms as shown in [Section 00 11 16], in order for City review of such requests to be completed prior to the Bid opening. The SDBE Contractor Prequalification Forms are included in [Appendix D] of this document, and can be found at the EO/EA web site: http://www.durhamnc.gov/forms/equal_prequalification.pdf. All questions concerning Prequalification should be directed to the City of Durham Department of EO/EA, (919) 560-4180.

B. Notice Under the Americans with Disabilities Act (ADA):

1. The City of Durham will not discriminate against qualified individuals with disabilities on the basis of disability. Anyone who requires an auxiliary aid or service for effective communications, or assistance to participate in a City program, service, or activity, should contact:

Attention: Stacey Poston
ADA Coordinator
City of Durham
Department of General Services
Administration Division
101 City Hall Plaza
Durham, North Carolina 27701
Phone: (919) 560-4197
TTY: (919) 560-4809
E-mail: stacey.poston@durhamnc.gov

All such requests should be submitted as soon as possible but no later than forty-eight (48) hours before any scheduled event.

C. The Contractor shall demonstrate the ability to complete a majority of all portions of the Contract using equipment and personnel owned and employed by the Contractor. The Contractor shall include the following information in the Bid in the spaces provided:
1. The number of years the Contractor has been regularly engaged in similar Contract municipal work and a list of projects they have completed with their equipment and personnel.
2. A list of the Contractor's personnel experienced to do the Work including the Superintendent to be in charge of the Work, including the length of their experience with this type of municipal work.
3. A list of the Contractor's equipment in good condition and suitable for completion of the Contract.

D. Miscellaneous
1. If the Contractor fails to demonstrate the ability to complete a majority of all portions of the Contract with equipment and personnel owned and employed by the Contractor, the Bid may be considered non-responsive.
2. The Contractor shall be licensed under Chapter 87 of the North Carolina General Statutes as a General Contractor. The Privilege License of the Contractor shall be included in the Bid.
3. A Privilege License for all Subcontractors of the apparent Successful Bidder, and those Bidders requested by the City of Durham, shall be filed within five (5) days after the Bid opening.
4. City of Durham Privilege Licenses may be obtained from the Department of Finance, Treasury Management Division, located at 101 City Hall Plaza, Durham, North Carolina, (919) 560-4700.

1.5 EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

A. Subsurface and Physical Conditions
1. The General Conditions identify:
a. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that the Engineer has used in preparing the Bidding Documents.

b. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that the Engineer has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in Paragraph 1.5.A.1 will be made available by the City of Durham to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which the Bidder is entitled to rely and have been identified and established as provided in Paragraph 4.02 of the General Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

C. Underground Facilities

1. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to the City of Durham and Engineer by owners of such Underground Facilities, including the City of Durham, or others.

D. Hazardous Environmental Condition

1. The General Conditions identify those reports and drawings related to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.
2. Copies of reports and drawings referenced in Paragraph 1.5.D.1 will be made available by the City of Durham to any Bidder on request. Those reports and drawings are not part of the Contract Documents but the "technical data" contained therein upon which Bidder is entitled to rely and have been identified and established as provided in Paragraph 4.06 of the General Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

E. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in Paragraph 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to Hazardous Environmental Conditions at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Technical Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

F. On request, the City of Durham will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and

utility locates. All requests for access to the Site must be received forty-eight (48) hours prior to the preferred time of access. All Site access requests must be made to and coordinated by the Resident Project Representative Byron Brady at 919-560-4326 ext. 30296. The Bidder may not access any Site without written permission from the City of Durham.

G. Reference is made to Paragraph 7.04 of the General Conditions for the identification of the general nature of other work that is to be performed at the Site by the City of Durham or others (such as utilities and other contractors) that relates to the Work contemplated by these Bidding Documents. On request, the City of Durham will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

H. It is the responsibility of each Bidder before submitting a Bid to:

1. examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
2. visit the Site and become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, and performance of the Work;
3. become familiar with and satisfy Bidder as to all federal, state, and local, Laws and Regulations that may affect cost, progress, and performance of the Work;
4. carefully study all:
   a. reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in Paragraph 4.02 of the General Conditions, and
   b. reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in Paragraph 4.06 of the General Conditions;
5. obtain and carefully study (or accept consequences of not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying and specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
6. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
7. become aware of the general nature of the Work to be performed by the City of Durham and others at the Site that relates to the Work as indicated in the Bidding Documents;

8. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
9. promptly give Engineer written notice of all conflicts, errors, ambiguities, omissions, or discrepancies that Bidder discovered in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
10. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

I. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this Paragraph 1.5, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performing and furnishing of the Work.

1.6 PRE-BID CONFERENCE

A. A pre-Bid conference will be held at 3:00 P.M. Wednesday, December 15, 2010 in the Department of Public Works Conference Room, Third Floor, 101 City Hall Plaza, Durham, North Carolina. Representatives of the City of Durham, Engineer, and the Department of EO/EA will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such agenda as Engineer considers necessary in response to questions arising from the conference. Oral statements may not be relied upon and shall not be binding or legally effective.

B. Bidder questions pertaining to the Work and SDBE participation will be addressed at the pre-Bid conference. Bidders may also identify potential SDBE Subcontractors at the pre-Bid conference.

1.7 SITE AND OTHER AREAS

A. The Site is identified in the Bidding Documents. Right-of-Entry and easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by the City of Durham unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by the Contractor.

1.8 INTERPRETATIONS AND ADDENDA

A. All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. All Addenda will also be posted on the City of Durham, Department of Finance, Purchasing Division web site: http://www.durhamnc.gov/departments/purchasing/bids.cfm. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications shall be without legal effect.

B. Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by the City of Durham or Engineer.

1.9 BID SECURITY

A. No Bid shall be considered or accepted unless at the time of its filing the same shall be accompanied by a deposit of cash or a certified or cashier's check drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation (FDIC), in an amount equal to five percent (5%) of the amount of the Bid. The check shall be made payable to the City of Durham. Said deposit shall guarantee that the Contract shall be entered into by the Successful Bidder if the award is made.

B. In lieu of the cash deposit or certified or cashier’s check mentioned above, the Bidder may file a Bid bond in the same amount executed by a corporate surety authorized to execute such bonds in North Carolina and conditioned as provided by North Carolina General Statute 143-129 and in the form attached to the Bidding Documents or on file with the Engineer. Bid bond forms must be properly executed at the time Bids are submitted before Bid will be considered. Properly executed Power of Attorney of the corporate surety's agent shall accompany such bond and be attached to the page provided therefore in the Contract Documents.

C. The Bid security of the Successful Bidder shall be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice to Award, whereupon the Bid Security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, the City of Durham may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid security of other Bidders whom the City of Durham believes to have a reasonable chance of receiving the award may be retained by the City of Durham until the earlier of seven (7) days after the Effective Date of the Agreement or sixty-one (61) days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

D. Bid security of other Bidders who the City of Durham believes do not have a reasonable chance of receiving the award will be returned within seven (7) days after the Bid opening.

E. In the event the Contract is not awarded, all Bid securities will be returned within seven (7) days after the Bid opening.

1.10 CONTRACT TIMES

A. The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

1.11 LIQUIDATED DAMAGES

A. Provisions for liquidated damages, if any, are set forth in the Agreement.

1.12 SUBSTITUTE AND "OR-EQUAL" ITEMS

A. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by the Contractor if acceptable to the Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement.

1.13 SUBCONTRACTORS, SUPPLIERS, AND OTHERS

A. A Privilege License for all Subcontractors must be filed within five (5) days after the Bid opening.

B. All Bidders are required to complete the SDBE Participation Document form E-101 and submit the completed forms with their Bid.

C. Each Bidder must submit a "Statement of Intent to Perform as a Subcontractor" for each SDBE Subcontractor within five (5) days of the Bid Opening. The "Letter of Intent to Perform as a Subcontractor" form can be found in Appendix A and must be signed by each SDBE Subcontractor. SDBE goal participation is calculated by multiplying the goal percentages by the Bid price. A listing of the City of Durham certified SDBE firms for the Project can be found in Appendix B.

D. All questions regarding SDBE documents or requirements may be directed to the City of Durham, Department of Equal Opportunity/Equity Assurance at (919) 560-4180.

E. The City of Durham reserves the right to reject a proposed Subcontractor for reasonable cause.

F. The General Conditions, Paragraph 6.06, require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to the City of Durham in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five (5) days after Bid opening, submit to the City of Durham a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information

regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by the City of Durham. If the City of Durham or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, the City of Durham may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

G. If apparent Successful Bidder declines to make any such substitution, the City of Durham may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds of forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which the City of Durham or Engineer makes no written objection prior to giving of the Notice of Award will be deemed acceptable to the City of Durham and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

H. Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

1.14 PREPARATION OF BID

A. The approved Bid form is included with the Bidding Documents. Additional copies may be obtained from the Engineer. All Bids must be submitted on the approved Bid form.

B. The unit prices for specific items shall reflect all costs associated with furnishing, installing all items of Work as indicated on the Drawings and Technical Specifications, complete, in place and accepted, per the City of Durham Standards and Specifications, North Carolina Department of Transportation (NCDOT) Standards and Specifications, and the North Carolina Department of Environment and Natural Resources (NCDENR) Erosion and Sediment Control Planning and Design Manual.

C. All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid form. A Bid price shall be indicated for each unit price item listed therein, or the words “No Bid,” “No Change,” or “Not Applicable” entered.

D. The omission of prices for any item on the Bid form, or the tendering of any unbalanced Bid may be the cause for the rejection of the submitted Bid.

E. The estimated quantities contained on the Bid form are for the purpose of comparing Bids. While the quantities are close approximations, they are not guaranteed. Payment will be made on the basis of the Work as actually executed at the unit prices set forth in the executed Agreement and under the provisions of such Agreement.

F. There shall be no additional compensation to the Contractor for materials, equipment, or work that is incidental to the successful completion of the Contract. Incidental costs include the costs inherent to the complete installation of those individual items included on the Bid form. For example, those costs associated with water supply, waste disposal,

temporary electrical services, and storage are incidental and defined within the Technical Specifications of the Bidding Documents.

G. Item values on the Bid form shall be given as figures (i.e. $23,000.00) and in writing (i.e. Twenty-three thousand and no/100's dollars).

H. A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. Insert the corporate officer's capacity under each signature. The corporate address and state of incorporation shall be shown below the signatures.

I. A Bid by a limited liability company shall be executed in the name of the firm by a member in the presence of a witness with signature, and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature. Affix the limited liability company seal adjacent to the signatures.

J. A Bid by an individual or sole proprietorship shall be executed with a signature of the individual/sole proprietor in the presence of a witness with signature. Insert the words "Individual/Sole Proprietor" under the signature and show the Bidder's name and official address. Affix the individual/sole proprietor seal adjacent to the signature.

K. A Bid by a partnership shall be executed in the partnership name and signed by all partners (whose title must appear under the signature) in the presence of a witness with signature, accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signatures. Affix the partnership seal adjacent to the each partner signature.

L. A Bid by a joint venture shall be executed by each party of the joint venture under their respective seals in a manner appropriate to each such party as described above for each party type. Provide a single signature sheet for each party to the joint venture.

M. All names shall be typed or printed in ink below the signatures.

N. The Bid shall contain an acknowledgment of all Addenda, the numbers of which shall be filled in on the Bid form.

O. The address and telephone number for communication regarding the Bid shall be shown.

P. The Bid shall contain evidence of the Bidder's authority and qualification to do business in the State of North Carolina or covenant to obtain such qualification prior to the award of the Contract. Bidder's State of North Carolina contractor license number, if any, shall also be shown on the Bid form.

1.15 BASIS OF BID; COMPARISON OF BIDS

A. Unit Price

1. Bidders shall submit a Bid on a unit price basis for each item of Work listed on the Bid Schedule.
2. The total of all estimated prices will be the sum of the Products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
3. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

B. The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in Paragraph 11.02 of the General Conditions.

C. Bid prices will be compared after adjusting for differences in the time designated by Bidders for Substantial Completion. The adjusting amount will be determined at the rate set forth in the Contract Documents for liquidated damages for failing to achieve Substantial Completion for each day before or after the time allowed as set forth in the Agreement.

1.16 SUBMITTAL OF BID

A. Bidders shall be solely responsible for delivery of Bids in the required manner and time.

B. No Bid shall be accepted or considered unless the complete set of required and executed documents is included with the Contractor’s submittal.

C. With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid form, and, if required, the Bid bond form. The unbound copy of these forms is to be completed and submitted.

D. Each Bid shall include non-collusion affidavits for the Bidder. Affidavits for all Subcontractors of the apparent Successful Bidder, and those Bidders requested by the City of Durham, must be filed within five (5) days after the Bid opening. Blank Non-Collusion Affidavit Forms can be found in Appendix E.

E. A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the following information:

1. Contract: WS-26
2. Project: 2011 Sidewalk Construction
3. Name of Bidder: _____
4. Address of Bidder: _____
   _____
   _____
5. Phone Number of Bidder: _____
6. Contact Person for Bidder: _____
7. Phone Number of Contact: _____
8. Bidder's North Carolina General Contractor's License Number: _____
9. The above-name Bidder has enclosed, and checked as appropriate, the following items in the Bid (check all):
   a. _____ Bid Form
   b. _____ SDBE Forms (E-101)
   c. _____ Non-Collusion Affidavit of Bidder
   d. _____ Privilege License of Bidder
   e. _____ Bid Security
   f. _____ List of Contractor Equipment and Personnel

F. Incorrect information, incomplete information, or irregularities on the Bid envelope may be cause for a Bid to be declared invalid or informal. Invalid or informal Bids will not be opened.

G. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate mailing/delivery envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to:

Attention: Byron E. Brady
City of Durham
Department of Public Works
Engineering Division
101 City Hall Plaza
Durham, North Carolina 27701

H. Bids submitted after the time listed in the Agreement and Invitation to Bid will be returned to the Bidder unopened.

I. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may be declared unacceptable at the City of Durham's discretion.

J. Bid Forms, appendices, and enclosures which are improperly prepared may be declared unacceptable at the City of Durham's discretion.

K. Failure to provide security deposit, bonds, or insurance requirements will invalidate the Bid at the City of Durham's discretion.

1.17 MODIFICATION AND WITHDRAWAL OF BID

A. Amendments to properly submitted Bids will be permitted when received in writing prior to Bid opening and when endorsed by the same party or parties who signed and sealed the Bid.

B. Bidders may withdraw their Bid by written request at any time before Bid opening.

C. No Bidder may withdraw a Bid after Bid opening and prior to the conclusion to the period of time stated in the Bid form except to the extent, if any, that may be required by law.

1.18 OPENING OF BIDS

A. Bids shall be opened, unless obviously non-responsive, at the time and place indicated in the Advertisement or Invitation to Bid and read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

B. Bidders may be present at the opening of Bids.

1.19 BIDS TO REMAIN SUBJECT TO ACCEPTANCE

A. All Bids will remain subject to acceptance for the period of time stated in the Bid form, but the City of Durham may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

1.20 EVALUATION OF BIDS AND AWARD OF CONTRACT

A. The City of Durham reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. The City of Durham further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. The City of Durham may also reject the Bid of any Bidder if the City believes that it would not be in the best interest of the Project to make an award to that Bidder. The City of Durham also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate terms with the Successful Bidder.

B. More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

C. In evaluating Bids, the City of Durham will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid form or prior to the Notice of Award.

D. In evaluating Bidders, the City of Durham will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Supplies, and other individuals or entities must be provided as provided in the General Conditions.

E. The City of Durham may conduct such investigations as the City deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

F. If the Contract is to be awarded, the City of Durham will award the Contract to the Bidder whose Bid is in the best interests of the Project.

1.21 CONTRACT SECURITY AND INSURANCE

A. Article 5 of the General Conditions sets forth the City of Durham's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to the City of Durham, it shall be accompanied by such bonds.

1.22 SIGNING OF AGREEMENT

A. After the City of Durham has identified the Successful Bidder, the Engineer on behalf of the City of Durham, will issue to the Successful Bidder, a written Notice to Award.

B. When the City of Durham gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts to the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within ten (10) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to the City of Durham. Within fifteen (15) days after execution of the Agreement by the Manager, the City of Durham will deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

1.23 SALES AND USE TAXES

The North Carolina General Assembly adopted legislation which required that contractors pay North Carolina Sale and Use Tax on materials, supplies, fixtures, and equipment used by the contractor in the performance of contracts with cities, counties, and towns on contracts dated July 1, 1961 or later.

The North Carolina General Assembly also authorized a refund to cities, counties, and towns of sales and use taxes paid on direct purchases of tangible personal property and construed purchases in the performance of contracts to be direct purchases.

A. The Bidder shall not include North Carolina Sales and Use Tax in unit price Bid. The Contractor will be reimbursed for all North Carolina Sales and Use Tax paid during any preceding month, at the time the monthly estimate is paid, provided the required

submittals are made to the City of Durham. Refer to Paragraph 6.10 of the General Conditions for additional information.

END OF DOCUMENT

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DOCUMENT 00 31 00

AVAILABLE PROJECT INFORMATION

1.1 SUMMARY

A. Document Includes:
1. Project information and location.
2. List of drawings.
3. City of Durham standards.
4. North Carolina Department of Transportation (NCDOT) standards.
5. North Carolina Department of Environment and Natural Resources (NCDENR) standards.

B. Related Documents:
1. 00 21 15 - Instructions to Bidders - EJCDC: Examination of Bidding Documents, other related data, and Site.

1.2 PROJECT INFORMATION AND LOCATION

A. The Work contemplated under the provisions of this Contract includes, but may not be limited to, the installation of sidewalk and curb cut ramp repairs and incidentals required for the specified locations throughout the City of Durham.

1.3 LIST OF DRAWINGS

Contract includes the following drawings:

Page No.	Drawing Title	Issue Date
1-15	2011 Sidewalk Improvements	November 30, 2010

1.4 TOPOGRAPHIC SURVEY

A. The topographic survey is shown on the plans noted above.

B. This survey identifies grade elevations prepared primarily for use of the Engineer in establishing new grades and identifying natural water shed. extent of new versus existing work.

1.5 EXISTING CONDITIONS SURVEY

A. The existing conditions survey is included with these plans as noted and prepared by the City of Durham Public Works Engineering Division.

B. This survey identifies conditions of existing construction prepared primarily for use of the Engineer in establishing extent of new versus existing work.

1.6 CITY OF DURHAM STANDARDS

B. All Work shall conform to City of Durham Standards. City of Durham Street Construction Specifications may be downloaded free of charge at: http://www.durhamnc.gov/departments/works/engineering.cfm. Hard copies of these specifications may be purchased from the City of Durham, Department of Public Works, Third Floor, 101 City Hall Plaza, Durham, North Carolina, 27701, (919) 560-4326.

C. The City of Durham Street Construction Specifications is amended as indicated below.

1. Revise Paragraph 9, Sampling and Testing of Materials and Construction on page 7 as follows:

a. The Contractor is to comply with material submittal and approval requirements as outlined elsewhere in these specifications. The Contractor is responsible for performing the required control testing for this Project to demonstrate compliance with contract requirements as outlined in these specifications or with specifications incorporated into this Contract by reference. The City may perform, or cause to be performed by independent laboratory services, quality assurance testing of the testing that will be performed by the Contractor.

2. Replace in its entirety Paragraph 14B concerning Accident Prevention on page 9 with the following:

a. The Contractor shall be solely responsible for all safety precautions required to complete the work. The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the Site, which occur as a result of his prosecution of the Work. The safety provisions of applicable laws and building and construction codes shall be observed. Machinery, equipment and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws. The Contractor shall

remain responsible for the safety and protection of the Work until the Work is completed and accepted by the City.

3. Replace in its entirety the Section 1 concerning Mobilization and Payment on page 23 with the following:
   a. MOBILIZATION, PROGRESS SCHEDULE AND DE-MOBILIZATION:
      1) The total cost Bid for mobilization, schedule and de-mobilization is not to exceed five percent (5%) of the total Contract Bid. All costs for mobilization and de-mobilization shall be included in the Contract unit price. There shall be no additional compensation for mobilization and no adjustments to the unit prices based on changes in the scope of work, including, but not limited to, any additions to the Work on the Contract. The Contractor will be paid in increments based on the status of the actual mobilization effort. An amount equal to fifteen percent (15%) of the total mobilization cost shall be withheld until the physical completion of the Project and completion of punch-list items and removal of all equipment and temporary construction for project de-mobilization is complete. An amount equal to twenty percent (20%) of the total mobilization cost shall be withheld for payment of the progress schedule development and monthly updates as outlined in this Contract. The breakdown of this bid item is as follows:
         a) Mobilization installments: a total of sixty-five percent (65%)
         b) Schedule submission and updates: a total of twenty percent (20%)
         c) De-mobilization and completion of punch list: a total of fifteen percent (15%)
      2) Any amount that the Contractor has bid in excess of the amounts noted above shall be retained by the City and paid on the final payment estimate.
4. All provisions which are not amended remain in effect.

D. The City of Durham Water and Sewer Construction Specifications are amended as indicated below.
   1. Replace in its entirety Paragraph 17 concerning Public Convenience and Safety, subparagraph A, entitled "Contractor’s Responsibility" on page 2-10 with the following:
      a. The Contractor will handle the construction Work in such a manner as to maintain traffic on the main roads along the construction area and will provide and maintain such warning signs and barricades as may be necessary to protect the Work and the public in their use of the highway itself, and in no case will the City of Durham be responsible for any failure of the Contractor to provide such warnings and precautions. The Contractor shall protect, indemnify, and save harmless the City of Durham from any and all claims, expenses, or damages which might be incurred as a result of accidents. All signs and barricades shall meet the

minimum requirements of and conform to the standard outline in the manual entitled "Manual on Uniform Traffic Control Devices for Streets and Highways Millennium Edition", published by the United States Department of Transportation, Federal Highway Administration, current version. The Contractor shall coordinate traffic control with the North Carolina Department of Transportation and Highway Safety.

2. Replace in its entirety Paragraph 18 concerning Accident Prevention, subparagraph A, on page 2-11 with the following:
   a. The Contractor shall be solely responsible for all safety precautions required to complete the Work. The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the Site, which occur as a result of his prosecution of the Work. The safety provisions of applicable laws and building and construction codes shall be observed. Machinery, equipment and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws. The Contractor shall remain responsible for the safety and protection of the work until the work is completed and accepted by the City.
3. Replace in its entirety Paragraph 31 concerning Sheeting and Bracing on page 2-24 with the following:
   a. All sheeting and bracing shall be done in accordance with the latest applicable "OSHA" Specifications. These minimum standards shall be closely followed. (Federal Register, OSHA Subpart P, 1926.650, 1926.651, 1926.652, 1926.653.) The Contractor or others shall furnish, install and maintain such sheeting, bracing, etc., as may be required to support the sides and/or roof of any excavation to prevent any movement which might injure persons, damage property, or structures, and injure or delay the work.
4. All provisions which are not amended remain in effect.

1.7 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STANDARDS

A. All Work shall conform to the NCDOT Standard Specifications (current version) and applicable revisions, as referenced in the Technical Specifications. The NCDOT Standard Specifications may be downloaded at: http://www.ncdot.org/doh/preconstruct/ps/specifications. Hard copies of these documents may be obtained from the NCDOT and are not provided by the City of Durham.

1.8 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (NCDENR) STANDARDS

A. All work shall conform to the NCDENR Erosion and Sediment Control Planning and Design Manual (current version), as referenced in the Technical Specifications. The NCDENR manual may be downloaded at: http://www.dlr.enr.state.nc.us/pages/publications.html. Hard copies of this document may be obtained from the NCDENR and are not provided by the City of Durham.

DOCUMENT 00 41 43

BID FORM - UNIT PRICE (SINGLE-PRIME CONTRACT)

To: The City of Durham, North Carolina
c/o The City Manager
101 City Hall Plaza
Durham, North Carolina 27701

Date: .....

Contract: SW-26

Project: 2011 SIDEWALK CONSTRUCTION

Sites: Wilderness Road
Hunt Street
Markham Avenue
Lakewood Avenue
Club Boulevard

Name of Bidder: .....

Address of Bidder: .....

.....

.....

Phone Number of Bidder: .....

Contact Person for Bidder: .....

Phone Number of Contact: .....
Bidder's North Carolina General Contractor's License Number: .....

1. OFFER

The undersigned Bidder hereby declares that the names of all persons interested in this Bid as principals appear in the blank spaces hereinafter provided for such purpose, that this Bid is in all respects fair and without collusion, that the Bidder has examined the locations of the proposed Work, the Advertisement, the Instructions to Bidders, the Technical Specifications, SDBE requirements of the Department of EO/EA of the City of Durham, the Contract Documents and bond forms, and the Drawings therein referred to and fully understands the same and agrees and accepts the terms and conditions thereof, that it is understood that the estimated quantities are

approximate only and are given for the purpose of comparing Bids upon a uniform basis, and that said estimate shall in no way affect the unit prices for the Work.

The undersigned Bidder hereby agrees to furnish at the Bidder's cost the expense of all the necessary labor, tools, apparatus, machinery, equipment, transportation, and all other things which may be required to fully and properly perform all the terms, covenants, provisions, and agreements of the annexed Contract.

The undersigned hereby agrees to do said Work and furnish said materials as prescribed in the Contract Documents and Technical Specifications, and, according to the Drawings and requirements of the Engineer under said Contract Documents and Technical Specifications, in a first-class manner and to the best of the undersigned's ability at the following unit prices.

Having examined the Site of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Engineer for the Project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the unit prices listed in this Bid form in lawful money of the United States of America.

We have included the Bid security as required by the Instruction to Bidders.

All applicable federal taxes are included and State of North Carolina taxes are excluded from the unit prices.

All Cash and Contingency Allowances described in Section 01 20 00 - Price and Payment Procedures are included in the Bid Prices.

2. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable, except as required by law, for ninety (90) days from the Bid opening date.

If this Bid is accepted by the City of Durham within the time period stated above, we will:

-Execute the Agreement within ten (10) days of receipt of Notice of Award.

-Furnish the required bonds within ten (10) days of receipt of Notice of Award.

-Commence Work within ten (10) days after receipt of written Notice to Proceed.

If this Bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required bonds, the Bid security shall be forfeited as damages to the City of Durham by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this Bid and the Bid upon which a Contract is signed.

In the event our Bid is not accepted within the time stated above, the required security deposit will be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

3. CONTRACT TIME

If this Bid is accepted, we will:

-Complete the Work in 365 calendar weeks from Notice to Proceed.

4. UNIT PRICES

The following are unit prices for specific portions of the Work as listed. The unit price Bid for items in this Contract are for furnishing, installing all items of Work as indicated on the Drawings and Technical Specifications, complete, in place and accepted, per the City of Durham Standards and Specifications, North Carolina Department of Transportation (NCDOT) Standards and Specifications, and the North Carolina Department of Environment and Natural Resources (NCDENR) Erosion and Sediment Control Planning and Design Manual. The following is the list of unit prices:

Item No.	Item Description	Unit	Qty.	Unit Price	Item Value
1	Construction Surveying and Stakeout	LS	1	$	$
2	Grading Construction Limits	CY	145	$	$
3	Borrow Excavation	CY	500	$	$
4	Borrow Material	CY	500	$	$
5	Remove Concrete Curb & Gutter	LF	1650	$	$
6	Remove Granite Curb and Stockpile	LF	420	$	$
7	Remove Concrete Sidewalk or Driveway	SY	1587	$	$
8	Sawing Concrete or Asphalt	LF	2145	$	$
9	Concrete Curb & Gutter (30")	LF	1648	$	$
10	Concrete Drive & Gutter	SY	780	$	$
11	4" Concrete Sidewalk or Drive	SY	3542	$	$
12	6" Concrete Sidewalk, Drive or Curb Ramp	SY	4303	$	$
13	Truncated Dome Ramp	EA	66	$	$
14	Adjust Water Meter Box	EA	17	$	$
15	Adjust Sewer Service Cleanout	EA	17	$	$
16	Tree Removal (4 Inch To 6 Inch)	EA	3	$	$
17	Tree Removal (19 Inch To 24 Inch)	EA	5	$	$
18	Tree Removal (25 Inch To 36 Inch)	EA	10	$	$
19	Tree Removal (37 Inch To 48 Inch)	EA	5	$	$
20	Landscape Removal and Tree Trimming	LS	1	$	$
21	Stone for Tree Protection (#57)	TN	98	$	$
22	Mulching for Tree Protection (4" - 6" depth)	SY	800	$	$
23	Tree Protection Fencing	LF	180	$	$
24	Striping Removal	LF	140	$	$

25	Pedestrian Crosswalk Striping - Standard 8" Strip	LF	1001	$	$
26	Pedestrian Crosswalk Striping - High Visibility 24" Strip	LF	230	$	$
27	Traffic Control	LS	1	$	$
28	Stone Bedding for RCP (# 57)	TN	21	$	$
29	15" RCP Cut (0 - 6 feet)	LF	60	$	$
30	Type l Basin - Complete (0 - 4 feet)	EA	2	$	$
31	Type l1 Basin - Complete (0 - 4 feet)	EA	1	$	$
32	Extra Depth Catch Basin & Manhole (6" increments)	VF	4	$	$
33	Convert Existing Basin to Manhole	EA	2	$	$
34	Existing Manhole Adjustment (6" Increments)	VF	1	$	$
35	Street Sidewalk Stormwater Flume (4"x 12" x 5")	EA	16	$	$
36	Asphalt Surface Course, Type S9.5B (Roadways)	TN	14	$	$
37	Seeding and Mulching (Type l, yards)	SY	4650	$	$
38	Install Chain Link Fence	LF	40	$	$
39	Remove Fence (wooden and chain link)	LF	225	$	$
40	3 inch Curb Downspout Connection	LF	120	$	$
	SUBTOTAL				$
41	Mobilization (Max 5% of SUBTOTAL)			$	$
TOTAL AMOUNT FOR CONTRACT SW-26				**$**	

We agree to diligently perform the Work in accordance with all Contract Documents, to complete such Work within the period as outlined in the Contract, and to begin Work within ten (10) days after receipt of the Notice to Proceed from the Engineer.

5. ADDENDA

The following Addenda have been received. The modifications to the Bidding Documents noted below have been considered and all costs are included in the Bid.

Addendum No....., Dated..... Addendum No....., Dated.....

Addendum No....., Dated..... Addendum No....., Dated.....

Addendum No....., Dated..... Addendum No....., Dated.....

6. APPENDICES

The following Documents will be submitted to the Issuing Office within five (5) days after the Bid opening:

1. SDBE Form E-105 (see Appendix A for blank form and instructions)

2. Non-Collusion Affidavits of all Subcontractors (see Appendix E for blank affidavits)
3. Privilege Licenses of all Subcontractors (contact the City of Durham, Department of Finance, Treasury Management Division, (919) 560-4700 for information on securing privilege licenses)

The following information is included with Bid submission:

1. Bid Form
2. SDBE Forms E-101 (see Appendix A for blank form and instructions)
3. Non-Collusion Affidavit of Bidder (see Appendix E for blank affidavits)
4. Privilege License of Bidder (contact the City of Durham, Department of Finance, Treasury Management Division, (919) 560-4700 for information on securing privilege licenses)
5. Bid Security (see Appendix F for blank Bid bond forms)
6. List of Contractor Equipment and Personnel

7. CONTRACTOR EXPERIENCE

The undersigned Contractor has regularly engaged in contract work of this class for ……. years, and has executed the following work as principal(s):

……

……

……

……

……

List of Contractor's personnel experienced to do this Work including and designating the Superintendent to be in charge of this Work showing the length of their varied experience with this particular Work. The list shall not include Subcontractor personnel.

Name	Experience	Name	Experience
……	……	……	……
……	……	……	……
……	……	……	……
……	……	……	……
……	……	……	……
……	……	……	……

List of Contractor's equipment in good condition and suitable for completion of this Contract: Contractor must be able to demonstrate ownership of all equipment necessary to complete all portions of the Contract. The list shall not include Subcontractor equipment.

…….	…….
…….	…….
…….	…….
…….	…….
…….	…….
…….	…….

Please attach additional sheets as necessary to complete the items above.

8. BID FORM SIGNATURES

Refer to Document 00 21 15 for specific Bid form signature requirements for corporations, partnerships, limited liability companies, individuals, or sole proprietorships.

CORPORATION

The Corporate Seal of

.....
(Bidder - print the full corporate name of firm)

.....
(President/Vice President/Authorized Corporate Officer)

(Seal)

was hereunto affixed in the presence of:

.....
(Secretary/Assistant Secretary)

(Seal)

Corporate Address:

.....

.....

.....

.....
(State of Incorporation)

LIMITED LIABILITY COMPANY

.....
(Bidder - print the full name of firm)

.....
(Authorized Firm Member)

(Seal)

was hereunto affixed in the presence of:

.....
(Witness)

(Seal)

Firm Address:

.....

.....

.....

.....
(State of Formation)

INDIVIDUAL OR SOLE PROPRIETORSHIP

.....
(Bidder - print the full name of individual or sole proprietorship)

(Seal)

Individual or Sole Proprietorship Address:

.....

.....

.....

PARTNERSHIP

.....
(Bidder - print the full corporate name of partnership)

.....	.....
(Partner and Title)	(Partner and Title)
(Seal)	(Seal)
.....	.....
(Partner and Title)	(Partner and Title)
(Seal)	(Seal)
.....	.....
(Partner and Title)	(Partner and Title)
(Seal)	(Seal)
.....	.....
(Partner and Title)	(Partner and Title)
(Seal)	(Seal)
.....	.....
(Partner and Title)	(Partner and Title)
(Seal)	(Seal)

(All Partners shall sign, additional signatures with titles and seals may be added below.)

was hereunto affixed in the presence of:

.....
(Witness)

(Seal)

Partnership Address:

.....

.....

JOINT VENTURE

If the Bid is a joint venture, add additional forms of execution for each member of the joint venture in the appropriate manner using the forms from above.

DOCUMENT 00 52 15

AGREEMENT FORM - EJCDC STIPULATED SUM (SINGLE-PRIME CONTRACT)

THIS AGREEMENT is by and between the City of Durham (Owner), a North Carolina municipal corporation, and _____ (Contractor).

The City of Durham and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

1.1 WORK

A. Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Sidewalk construction at various locations throughout the City of Durham.

1.2 THE PROJECT

A. The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Contract: SW-26, Project: 2011 Sidewalk Construction

B. Listed below are the Sites, in order of priority, that the Contractor may be instructed to complete construction under this Contract.

Wilderness Road
Hunt Street
Markham Avenue
Lakewood Avenue
Club Boulevard

1.3 ENGINEER

A. The Project has been designed by The City of Durham, Department of Public Works, Engineering Division (Engineer), who is to act as the City of Durham's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

1.4 CONTRACT TIMES

A. Time of the Essence
1. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

B. Days to Achieve Substantial Completion and Final Payment

1. The Work shall be substantially completed within 365 days after the date when the Contract Times commence to run (Notice to Proceed) as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 365 days after the date when the Contract Times commence to run (Notice to Proceed).

C. Liquidated Damages

1. Contractor and the City of Durham recognize that time is of the essence of this Agreement and that the City of Durham will suffer financial loss if the Work is not completed within the times specified in Paragraph 1.4.B.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by the City of Durham if the Work is not completed on time. Accordingly, instead of requiring any such proof, the City of Durham and the Contractor agree that as liquidated damages for the delay (but not as a penalty), Contractor shall pay the City of Durham four hundred dollars ($400.00) for each day that expires after the time specified in Paragraph 1.4.B.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by the City of Durham, Contractor shall pay the City of Durham four hundred dollars ($400.00) for each day that expires after the time specified in Paragraph 1.4.B.1 for completion and readiness for final payment until the Work is completed and ready for final payment.
2. Failure of the Contractor to commence construction within ten (10) days of the Notice to Proceed shall begin a daily penalty to the Contractor at a rate of fifty percent (50%) of the daily liquidated damages specified in Paragraph 1.4.C.1.

D. Weather Related Delays

1. The Contractor may request for an extension of Contract Times for delays related to adverse weather as described in the General Conditions, Paragraph 12.02A.

1.5 CONTRACT PRICE

A. The City of Durham shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amount determined pursuant to Paragraphs 1.5.A.1 and 1.5.A.2 below:

1. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in this Paragraph 1.5.A.2:

   As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by the Engineer as provided in Paragraph 9.07 of the General Conditions. Unit prices have been computed as provided in Paragraph 11.03 of the General Conditions.

UNIT PRICE WORK

Item No.	Item Description	Unit	Qty.	Unit Price	Item Value
1	Construction Surveying and Stakeout	LS	1	$	$
2	Grading Construction Limits	CY	145	$	$
3	Borrow Excavation	CY	500	$	$
4	Borrow Material	CY	500	$	$
5	Remove Concrete Curb & Gutter	LF	1650	$	$
6	Remove Granite Curb and Stockpile	LF	420	$	$
7	Remove Concrete Sidewalk or Driveway	SY	1587	$	$
8	Sawing Concrete or Asphalt	LF	2145	$	$
9	Concrete Curb & Gutter (30")	LF	1648	$	$
10	Concrete Drive & Gutter	SY	780	$	$
11	4" Concrete Sidewalk or Drive	SY	3542	$	$
12	6" Concrete Sidewalk, Drive or Curb Ramp	EA	4303	$	$
13	Truncated Dome Ramp	EA	66	$	$
14	Adjust Water Meter Box	EA	17	$	$
15	Adjust Sewer Service Cleanout	EA	17	$	$
16	Tree Removal (4 Inch To 6 Inch)	EA	3	$	$
17	Tree Removal (19 Inch To 24 Inch)	EA	5	$	$
18	Tree Removal (25 Inch To 36 Inch)	EA	10	$	$
19	Tree Removal (37 Inch To 48 Inch)	EA	5	$	$
20	Landscape Removal and Tree Trimming	LS	1	$	$
21	Stone for Tree Protection (#57)	TN	98	$	$
22	Mulching for Tree Protection (4" - 6" depth)	SY	800	$	$
23	Tree Protection Fencing	LF	180	$	$
24	Striping Removal	LF	140	$	$
25	Pedestrian Crosswalk Striping - Standard 8" Strip	LF	1001	$	$
26	Pedestrian Crosswalk Striping - High Visibility 24" Strip	LF	230	$	$
27	Traffic Control	LS	1	$	$
28	Stone Bedding for RCP (# 57)	TN	21	$	$
29	15" RCP Cut (0 - 6 feet)	LF	60	$	$
30	Type l Basin - Complete (0 - 4 feet)	EA	2	$	$
31	Type l1 Basin - Complete (0 - 4 feet)	EA	1	$	$
32	Extra Depth Catch Basin & Manhole (6"	VF	4	$	$

	increments)				
33	Convert Existing Basin to Manhole	EA	2	$	$
34	Existing Manhole Adjustment (6" Increments)	VF	1	$	$
35	Street Sidewalk Stormwater Flume (4"x 12" x 5")	EA	16	$	$
36	Asphalt Surface Course, Type S9.5B (Roadways)	TN	14	$	$
37	Seeding and Mulching (Type l, yards)	SY	4650	$	$
38	Install Chain Link Fence	LF	40	$	$
39	Remove Fence (wooden and chain link)	LF	225	$	$
40	3 Inch Curb Downspout Connection	LF	120	$	$
	SUBTOTAL				$
41	Mobilization (Max 5% of SUBTOTAL)	EA	1	$	$
TOTAL AMOUNT FOR CONTRACT SW-26				**$**	

1.6 PAYMENT PROCEDURES

A. Submittal and Processing of Payments

1. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

B. Progress Payments; Retainage

1. The City of Durham shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the last day of each month during performance of the Work as provided in Paragraphs 1.6.B.1.a and 1.6.B.1.b below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

   a. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amount as Engineer may determine or the City of Durham may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:

   b. The City of Durham will retain two and one-half (2.5%) percent of the amount of each estimate until Work covered by the Contract is one hundred (100) percent complete.

   c. Notwithstanding any of the retainage provisions described herein, there shall be no retainage on periodic or final payments for Contracts having a total project cost less than $100,000.00, and, in addition to the retainage amounts allowed to be held by the City of Durham, the City shall also retain all rights allowed under this Agreement to withhold payment to the

Contractor in accordance with [Article 14 of the General Conditions] and for unsatisfactory job progress, defective or nonconforming construction not remedied, disputed Work, or third-party claims filed against the City of Durham or reasonable evidence that a third-party claim will be filed.

d. Within 60 days of receipt by the City of (1) a pay request and (2) written consent of the surety, and after the City has either (1) received a certificate of substantial completion, or (2) received beneficial occupancy or use of the project (if applicable), the City of Durham shall pay an amount sufficient to increase total payment to Contractor to the Contract Price, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less up to two hundred and fifty percent (250%) of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

C. Final Payment

1. Prior to issuing final payment, the Contractor will furnish to the City of Durham certification that: All Subcontractors and vendors associated with this Contract have been paid; no liens and/or lawsuits have been placed against the Contractor for this Work; and the total dollar amount has been paid to all Subcontractors, Suppliers, and others associated with this project.
2. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, the City of Durham shall pay the remainder of the Contract price as recommended by Engineer as provided in said Paragraph 14.07.

1.7 CONTRACTOR'S REPRESENTATIONS

A. In order to induce the City of Durham to enter into this Agreement Contractor makes the following representations:

1. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
2. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and regulations that may affect cost, progress, and performance of the Work.
4. Contractor has carefully studied all:
   a. Reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in Paragraph 4.02 of the General Conditions; and
   b. Reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in Paragraph 4.06 of the General Conditions.
5. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all additional and supplementary examinations, investigations,

explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by the Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

6. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
7. Contractor is aware of the general nature of work to be performed by the City of Durham and others at the Site that relates to the Work as indicated in the Contract Documents.
8. Contractor has correlated the information known to the Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

1.8 MISCELLANEOUS

A. Terms
1. Terms used in this Agreement will have the meanings stated in the General Conditions.

B. Assignment of Contract
1. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

C. Successors and Assigns
1. The City of Durham and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

D. Severability

1. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the City of Durham and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

E. Notices and Communications

1. All notices and other communications required or permitted by Contract shall be in writing and shall be given by personal delivery, fax, or certified United States mail (return receipt requested) addressed/faxed as follows:

   To the City of Durham (Owner):
   Attention: Byron E. Brady
   City of Durham
   Department of Public Works
   Engineering Division
   101 City Hall Plaza
   Durham, North Carolina 27701
   Fax: (919) 560-4316

   To the Contractor:
   Attention:_____
   Firm Name
   Street Address
   City, State Zip Code
   Fax Number

2. A change of address, fax number, or person to receive notices or communications may be made by either party by notice given to the other party. Any notices or communications under Contract shall be deemed given at the time of actual delivery, if it is personally delivered or faxed. If the notices or communications are sent by United States mail, it shall be deemed given upon the third calendar day following the day on which the notices or communications were postmarked, or upon actual delivery, whichever first occurs.

F. Other Provisions

1. Finish Work
   a. The Contractor shall be responsible for all finish work. Any work that is defaced, scarred, or vandalized prior to acceptance must be corrected within thirty (30) days time from the date notice is given by the City of Durham.

G. Technical Data and Other Work

1. Subsurface and Physical Conditions
   a. No reports of explorations or tests of subsurface conditions at or contiguous to the Site are known to the City of Durham or Engineer.
2. Hazardous Environmental Condition

a. No reports or drawings related to Hazardous Environmental Condition are known to the City of Durham or Engineer.

3. Other Work

a. The City of Durham and Engineer are unaware of any other work on the Site at the time of Notice to Proceed

H. Contractor's Liability Insurance

Contractor shall maintain insurance not less than the following:

Commercial General Liability, covering

- premises/operations
- products/completed operations
- broad form property damage
- explosion, collapse, and underground hazards if the hazards exist in the performance of this contract
- contractual liability
- independent contractors, if any are used in the performance of this contract
- City of Durham must be named additional insured, and <u>an original of the endorsement to effect the coverage must be attached to the certificate (if by blanket endorsement, then agent may so indicate in the GL section of the certificate, in lieu of an original endorsement)</u>
- combined single limit not less than $1,000,000 per occurrence; aggregate limit not less than $2,000,000 per year

<u>Automobile Liability Insurance</u>, covering

- owned, hired, or borrowed vehicles
- employee vehicles, if used in performance of this contract
- City of Durham must be named additional insured, and <u>an original of the endorsement to effect the coverage must be attached to the certificate (if by blanket endorsement, then agent may so indicate in the GL section of the certificate, in lieu of an original endorsement)</u>
- combined single limit not less than $1,000,000 per occurrence; aggregate limit not less than $2,000,000 per year

<u>Workers' Compensation Insurance</u>, covering

- statutory benefits;
- covering employees; covering owners partners, officers, (who work on this contract)
- employers' liability, $1,000,000.

<u>Insurance shall be provided by</u>:

- companies authorized to do business in the State of North Carolina
- companies with Best rating of A-VIII. Anything less requires written approval from the client.

<u>Insurance shall be evidenced by a certificate</u>:

- providing notice to the City of not less than 30 days prior to cancellation or reduction of coverage
- certificates shall be addressed to:

  City of Durham, North Carolina
  attention: Finance Director
  101 City Hall Plaza
  Durham, NC 27701
- both the insurance certificate and the additional insured endorsement must be originals and must be approved by the City's Finance Director before Contractor can begin any work under this contract.

CERTIFICATE OF FINANCE OFFICER

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

This …… day of ……., ……

……
FINANCE OFFICE, CITY OF DURHAM

NON-COLLUSION STATEMENT BY CONTRACTOR

The City of Durham prohibits collusion, which is defined as a secret agreement for a deceitful or fraudulent purpose.

I, ……, affirm that I have not engaged in collusion with any City employee(s), other person, corporations, or firms relating to this Bid, proposals, or quotations. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.

……
CONTRACTOR

IN TESTIMONY WHEREOF, the City of Durham has caused these presents to be signed in its name by the City Manager or the Deputy City Manager and its corporate seal to be hereto affixed and attested by the City Clerk, all by order of the City Council and the City of Durham; and the Contractor's officers, having been duly authorized by resolution of its Board of Directors, hereby execute this Contract under the seal of and on behalf of Contractor.

IN WITNESS WHEREOF, the City of Durham and Contractor have signed this Agreement in duplicate. One counterpart each has been delivered to the City of Durham and the Contractor. All portions of the Contract Documents have been signed or identified by the City of Durham and Contractor or on their behalf.

This Agreement will be effect on _____, _____ (date, year) (which is the Effective Date of the Agreement).

OWNER:

CITY OF DURHAM

By: .....
CITY MANAGER or
DEPUTY CITY MANAGER

(CORPORATE SEAL)

Attest: .....
CITY CLERK

(CORPORATE SEAL)

Address for giving notices:

Attention: Byron E. Brady
City of Durham - Department of Public Works
Engineering Division
101 City Hall Plaza
Durham, North Carolina 27701

Phone No.: (919) 560-4326 ext. 30296

Fax No.: (919) 560-4316

CONTRACTOR (CORPORATION):

.....

By: .....

Title: .....

(CORPORATE SEAL)

Attest: .....

Title: .....

(CORPORATE SEAL)

Address for giving notices:

.....

.....

.....

Phone No.: ……...

Fax No.: ……...

License No.: .....

Agent for service or process: ….....

……..…

(If Contractor is a corporation or partnership, attach evidence of authority to sign.)

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DOCUMENT 00 72 15

GENERAL CONDITIONS - EJCDC STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 SUMMARY

A. Document Includes:
   1. General Conditions.

B. Related Documents:
   1. Document 00 52 15 - Agreement Form - EJCDC Stipulated Sum (Single-Prime Contract).

1.2 GENERAL CONDITIONS

A. EJCDC No. C-700 (2002 Edition) - Standard General Conditions of the Construction Contract, is the General Conditions of the Contract.

END OF DOCUMENT

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Engineers Joint Documents Committee
Design and Construction Related Documents
Instructions and License Agreement

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4. Also note the instruction in the License Agreement about the EJCDC copyright.

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The license is effective until terminated. You may terminate it at any time by destroying **EJCDC Design and Construction Related Documents** altogether with all copies, modifications and merged portions in any form. It will also terminate upon conditions set forth elsewhere in this Agreement or if you fail to comply with any term or condition of this Agreement. You agree upon such termination to destroy **EJCDC Design and Construction Related Documents** along with all copies, modifications and merged portions in any form.

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EJCDC warrants the CDs and diskettes on which **EJCDC Design and Construction Related Documents** is furnished to be free from defects in materials and

workmanship under normal use for a period of ninety (90) days from the date of delivery to you as evidenced by a copy of your receipt.

There is no other warranty of any kind, either expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Some states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

EJCDC does not warrant that the functions contained in **EJCDC Design and Construction Related Documents** will meet your requirements or that the operation of **EJCDC Design and Construction Related Documents** will be uninterrupted or error free.

Limitations of Remedies:

EJCDC's entire liability and your exclusive remedy shall be:

1. the replacement of any document not meeting EJCDC's "Limited Warranty" which is returned to EJCDC's selling agent with a copy of your receipt, or

2. if EJCDC's selling agent is unable to deliver a replacement CD or diskette which is free of defects in materials and workmanship, you may terminate this Agreement by returning EJCDC Document and your money will be refunded.

In no event will EJCDC be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use **EJCDC Design and Construction Related Documents** even if EJCDC has been advised of the possibility of such damages, or for any claim by any other party.

Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

General:

You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement. Any attempt otherwise to sublicense, assign, or transfer any of the rights, duties, or obligations hereunder is void.

This Agreement shall be governed by the laws of the State of Virginia. Should you have any questions concerning this Agreement, you may contact EJCDC by writing to:

Arthur Schwartz, Esq.
General Counsel
National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314

Phone: (703) 684-2845
Fax: (703) 836-4875
e-mail: aschwartz@nspe.org

You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the agreement between us which supersedes any proposal or prior agreement, oral or written, and any other communications between us relating to the subject matter of this agreement.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

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American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400

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City of Durham, Department of Public Works
101 City Hall Plaza, Durham, NC 27701

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

9A. *City*--The City of Durham, North Carolina.

9B. *City Council*--The City Council of the City of Durham, North Carolina.

9C. *City Manager*—The City Manager of the City of Durham, North Carolina.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

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17A. *Document*--A specific section of the Project Manual or a reference to a specific section of the Project Manual as noted with the accompanying numeric reference.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

23A. *Issuing Office*--The office from which the Bidding Documents are to be issued and where the Bidding procedures are to be administered.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed. The Owner is the City of Durham, North Carolina. The City Manager is hereby designated as Owner's representative. The City Manager is the only individual authorized to act on Owner's behalf under or in connection with the Contract Documents, unless the City Manager designates a new representative in writing. The authority of the City Manager and designated representative(s), if any, includes terminating or suspending Work under Article 15 and executing changes in the Work under Article 10.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

31A. *Products*--Means, materials, and equipment that Contractor furnishes and provides, other than labor and services.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

34A. *Property Owner*--The individual, partnership, co-partnership, limited liability corporation, firm, company, corporation, unincorporated association, organization, joint stock company, trust, estate, institution, governmental entity, or any other entity that owns the property, or controls management or activities of the property where Work or a portion of the Work is performed.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

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36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof to make any and all inspections of the Work performed, acting under direct supervision of the Engineer.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer and approved by Owner, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be lawfully utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

46A. *Superintendent*--The authorized representative of the Contractor who is assigned to oversee the work forces responsible for performing the Work in accordance with the Contract Documents.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order

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following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents, or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or

c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

G. *Include*

1. The word "include" in its various forms and derivatives shall mean 'without limitation' unless the context otherwise requires.

H. *Persistently Fails*

1. The expression 'persistently fails' and other similar expressions, as used in reference to the Contractor, shall mean any act or omission which causes Owner or Engineer to reasonably conclude that Contractor will not complete the Work within the Contract Times or Contract Price, or in substantial compliance with the requirements of the Contract Documents.

I. *Pronouns, Numbers, and Titles*

1. Unless the context otherwise requires, all personal pronouns used in the Contract Documents shall include all other genders, and the singular shall include the plural and vice versa. Titles and headings of articles, paragraphs, subparagraphs, sections, subsections, parts, subparts, etc., in the Contract Documents are for convenience only, and neither limit nor amplify the provisions.

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2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in~~ the Supplementary Conditions~~ Article 5, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

~~A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.~~

A. The City of Durham shall furnish to Contractor one (1) printed or hard copy of the drawings and Project Manual and one (1) set in electronic format. Additional copies will be furnished upon request. The cost of reproduction will be charged to the requestor.

2.03 *Commencement of Contract Times; Notice to Proceed*

~~A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.~~

A. The Contract Times will commence to run on the thirtieth (30th) day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the thirtieth (30th) day after the execution of the Contract by the City of Durham, Office of the City Manager.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review**:**

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

B. *Priority List of Sites:* The priority list of Sites for the Project shall be approved by the Engineer or Resident Project Representative. The City of Durham reserves the right to alter the priority list of Sites. The Contractor shall be given notice in writing of any change in the priority list of Sites.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the

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Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

D. The General Requirements govern the execution of the Work of all sections of the Technical Specifications of the Contract Documents.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work*: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

a. The accuracy or exactness of grades, elevations, dimension, or locations given on any Drawings or the Work installed by other contractors, is not guaranteed by Owner.

b. Included under Contractor's duty under the first sentence of Paragraph 3.03.A.1 are:

1) to satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations, and

2) in all cases of interconnection of the Work to be done by Contractor with the rest of the Project, it shall verify at the Site all dimensions needed to make proper interconnections.

c. Contractor shall promptly rectify all errors due to its failure to so verify all such grades, elevations, locations, or dimensions without additional cost to Owner. No extra charge or compensation shall be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings.

d. Contractor acknowledges:

1) the Contract Documents are sufficient to determine the cost of the Work;

2) it has had sufficient opportunity to visit the Site and to examine all conditions, including subsurface and physical conditions, affecting the Work;

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3) it has had a sufficient opportunity to examine the Contract Documents for errors, inconsistencies, and omissions;

4) the Contract Documents and complete and unambiguous;

5) the Contract Times are reasonable and sufficient to complete the Work.

e. If the statements in Paragraph 3.03.A.1.d are not accurate, Contractor accepts any risk in connection with making them.

f. Contractor shall evaluate and satisfy itself as to the conditions and limitations under which the Work is to be performed, including (to the extent they are pertinent):

1) the location, condition, layout, and nature of the Site and surrounding areas,

2) generally prevailing climatic condition,

3) anticipated labor supply and costs,

4) availability and cost of materials, tools, and equipment, and

5) other similar issues.

g. To the extent that it may be appropriate for the proper execution of its subcontract, Contractor shall cause each Subcontractor to do the evaluation described in Paragraph 3.03.A.1.f.

h. Owner shall not be required to make any adjustment in with the Contract Times or the Contract Price in connection with any failure by Contractor to comply with Paragraph 3.03.A.

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof or unless otherwise provided in the Contract Documents, or by Laws or Regulations or common law.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

2. Owner and Contractor shall do all acts, and shall make, execute, and deliver such written instruments, as shall from time to time be reasonably required to carry out the provisions of the Contract Documents. If inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, specifications, manuals, or Laws or Regulations cannot be resolved by use of provisions of the Contract Documents as described in Paragraph 3.03.B.1, Contractor shall:

a. provide the better quality or greater quantity of Work or

b. comply with the more stringent requirement.

3. Paragraph 3.03.B.2 shall not relieve the Contractor of any obligations otherwise imposed on it.

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

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3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

D. The City of Durham shall obtain a right-of entry for each Site located on private property. No work shall commence on a private property Site until the Contractor has been given a copy of the executed right-of entry for that Site and the Contractor has been given permission to begin work on the Site from the Engineer or Resident Project Representative. The City of Durham is solely responsible for obtaining rights-of-entry.

E. The Contractor shall have no more than one (1) uncompleted Site ongoing at any time, unless authorized by the Engineer or Resident Project Representative. Prior to moving to the next Site, the Contractor shall receive permission from the Engineer or Resident Project Representative.

F. The City of Durham shall obtain all encroachment agreements necessary for the completion of the Work. The Contractor shall become familiarized with all the provisions of the encroachment agreements, if any, required for Contract. The Engineer or Resident Project Representative will provide copies of the encroachment agreements. The City of Durham is solely responsible for obtaining encroachment agreements.

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G. *Public Notice and Advisory*: The Contractor shall notify individuals or entities anticipated to be affected by the Work. Notice shall be written and provided to the recipient no less than two (2) days prior to commencing Site construction. Notice shall be delivered in person, door knob hanger, or letter and shall include the following information:

1. nature and schedule of the Work;

2. name and telephone number of a contact person; and

3. any additional necessary information or instructions.

H. The Engineer or Resident Project Representative shall approve any notice prior to commencement of construction.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The ~~Supplementary Conditions identify~~ Agreement, Paragraph 1.10.G.1 identifies:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

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2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in ~~the Supplementary Conditions~~ Article 4:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

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4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the ~~Supplementary Conditions~~ Agreement, Paragraph 1.10.G.2, for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

~~G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~

G. Nothing in this Paragraph 4.06 is intended to reduce Owner's duties under the Contract Documents, including Article 8.

~~H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,~~

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~~attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~

H. Nothing in this Paragraph 4.06 is intended to reduce Contractor's duties under the Contract Documents, including Article 6.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act. Furnish Performance and Payment Bonds on the bond forms included in Appendix G. Performance and Payment Bonds shall be executed by a surety licensed to do business in the State of North Carolina.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within ~~20~~ five (5) days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in ~~the Supplementary Conditions~~ Article 5.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in ~~the Supplementary Conditions~~ Article 5, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

~~B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.~~

B. Certificates of insurance shall be addressed to the City of Durham, North Carolina, Attention: Finance Director, 101 City Hall Plaza, Durham, North Carolina 27701.

C. Both the certificates of insurance and additional insured endorsement must be originals and must be approved by the City of Durham's Finance Director before Contract can begin any Work under this Contract.

D. Failure of the City of Durham to demand such certificates or other evidence of full compliance with these insurance requirements or failure of the City of Durham to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

E. By requiring such insurance and insurance limits herein, the City of Durham does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under the indemnities granted to the City of Durham in the Contract Documents.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain ~~such liability and other~~ commercial general liability insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which

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may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

a. Workers compensation insurance shall cover statutory benefits.

b. Workers compensation insurance shall cover employees; cover Contractor's partners, officers, and relatives (who work on this Contract).

c. Workers compensation insurance shall cover employers' liability in the amount stipulated by the Agreement, Paragraph 1.10.H.1.

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

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

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

a. Automobile liability insurance shall cover owned, hired, or borrowed vehicles.

b. Automobile liability insurance shall cover employee vehicles, if used in performance of this Contract.

c. Automobile liability insurance limits shall be as stipulated in the Agreement, Paragraph 1.10.H.2.

7. claims for damages related to premises/operations.

8. claims for damages related to products/completed operations.

9. claims for damages related to broad form property damage.

10. claims for damages related to explosion, collapse, and underground hazards if the hazards exist in the performance of this Contract.

11. claims for damages related to contractual liability.

12. claims for damages related to independent contractors, if any are used in the performance of this Contract.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through ~~5.04.A.6~~ 5.04.A.12 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in ~~the Supplementary Conditions~~ Article 5, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

a. City of Durham must be named additional insured, and an original of the endorsement to effect the coverage must be attached to the certificate (if by blanket endorsement, then agent may so indicate in the General Liability section of the certificate, in lieu of an original endorsement).

2. include at least the specific coverages and be written for not less than the limits of liability provided in ~~the Supplementary Conditions~~ Article 5 or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in ~~the Supplementary Conditions~~ Article 5 to whom a certificate

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of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in ~~the Supplementary Conditions~~ Article 5, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

8. have a combined single limit and aggregate limit as stipulated in the Agreement, Paragraph 1.10.H.3.

9. be provided by companies authorized to do business in the State of North Carolina.

10. be provided by companies with Best rating A-VIII. Anything less requires written approval from the Owner.

C. In the event that claims in excess of the insured amounts provided herein are filed by reason of any operations under the Contract, the amount of excess of such claims, or any portion thereof, may be withheld from payment due or to become due the Contractor until such time as the Contractor shall furnish such additional security covering such claims as may be determined by the Owner.

D. All policies and certificates of insurance of the Contractor shall contain the following clauses:

1. Insurers shall have no right of recovery or subrogation against the Owner and its agents and agencies and the Engineer, it being the intention of the parties that the insurance policies so affected shall protect both parties and be primary coverage for any and all losses covered by the above described insurance.

2. The clause "other insurance provisions" in a policy in which the Owner and its agents and agencies and the Engineer is named as an insured, shall not apply to these parties.

3. The insurance companies issuing the policy or policies shall have no recourse against the Owner and its agents and agencies and the Engineer, for the payment of any premiums or for assessments under any form of policy.

4. Any and all deductibles in the above described insurance policies shall be assumed by and be for the amount of, and at the sole risk of the Contractor.

~~5.05 *Owner's Liability Insurance*~~

~~A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.~~

~~5.06 *Property Insurance*~~

~~A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:~~

~~1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;~~

~~2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;~~

~~3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);~~

~~4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;~~

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5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

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~~5.08 *Receipt and Application of Insurance Proceeds*~~

~~A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.~~

~~B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.~~

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B, but failure to give such notice does not waive any rights. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

~~5.10 *Partial Utilization, Acknowledgment of Property Insurer*~~

~~A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.~~

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

C. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, Owner and Contractor shall communicate through Engineer. Communications by and with Engineer's consultants shall be through Engineer.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written

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consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. Engineer may reject any material and equipment delivered to the Site without the approval of satisfactory evidence required by the Contract Documents.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

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c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2. The procedure for payment of expenses shall be similar to that provided in Paragraph 6.05.A.1.b.1.

C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement*: Engineer will record Engineer's costs in evaluating and implementing a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating and implementing each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

G. Any materials and equipment required to be approved by the Engineer that is installed on the Project without such approval is subject to removal, disposal, and replacement by the Contractor at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including

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those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection. However, if the Contract Documents specify any item, process, or the like that is available only from an Subcontractor or Supplier against whom Contractor has an objection, the preceding sentence does not apply as to that particular Subcontractor or Supplier.

B. If the Supplementary Conditions Article 6 requires the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions Article 6, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate written agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer,, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same. Where appropriate, Contractor shall require each Subcontractor or Supplier to enter into similar agreements with persons and firms that Subcontractor or Supplier has contracted with for any part of the Work.

H. *Furnishing Subcontractor Documents:* At any time after the Agreement is executed, whether or not notice of termination has been given, Contractor shall upon request of the Owner promptly give the Owner a copy of the entire text of all agreements, (including attachments and exhibits) with Subcontractors, together with all other documents by which any services, materials, equipment, or other goods were ordered by the Contractor, including documents showing the cost, delivery dates, and all terms and conditions (including those relating to ordering and canceling).

I. *Partial Requirements of Subcontracts:* All subcontracts shall include substantially the following Paragraphs 6.06.I.1 and 6.06.I.2. Upon Owner's request, Contractor shall demonstrate compliance with this Paragraph.

1. Paragraph 6.06.G of the General Conditions of the Construction Contract between Owner (City of Durham) and Contractor is incorporated by reference into

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this subcontract. To the extent of the Work to be performed by the Subcontractor, the rights of Owner and Engineer under the Owner-Contractor Agreement with respect to the Work to be performed by the Subcontractor are preserved and shall be protected so that subcontracting shall not prejudice those rights. Owner (City of Durham) is an intended third party beneficiary of this subcontract.

2. If Contractor is terminated by Owner, and even if Contractor defaults in such a way which would give the Subcontractor the right to terminate this subcontract, the Subcontractor hereby agrees that, upon written request (by Owner, or a contractor substituted in place of the original Contractor, or any surety obligated under bond relating to the Owner-Contractor Agreement), the Subcontractor will continue to perform its obligations under this subcontract (on the same terms and conditions as apply to this subcontract) for and on account of Owner, such substitute contractor, or the surety. If requested by Owner or surety, the Subcontractor shall execute a separate document to show its commitment to continue performance pursuant to this subcontract. Assignment is subject to the prior rights of the surety. Owner shall be responsible to the subcontractor only for those obligations of Contractor that accrue after Owner exercises any rights under this Paragraph.

J. The Contractor shall comply with all applicable provisions of Sections 18-50 through 18-54 of the City of Durham Code (Ordinance to Promote Equal Business Opportunities in City Contracting), as amended from time to time. Failure of Contractor to comply with these provisions shall be a material breach of Contract which may result in the rescission or termination of Contract and/or appropriate remedies in accordance with the provisions of the ordinance, Contract, and State law. Section 18-58.f of the ordinance provides, in part, "If the City Manager determines that the Contractor has failed to comply with the provisions of the Contract, the City Manager shall notify the Contractor in writing of the deficiencies. The Contractor shall have fourteen (14) days, or such time as specified in the Contract, to cure the deficiencies or establish that there are no deficiencies. If the deficiencies are not cured, the City shall have the right to take all lawful actions." These provisions apply only to alleged Contractor violations of Sections 18-50 through 18-54 of the City Code.

K. The Contractor shall meet all City of Durham requirements for affirmative action and Small Disadvantaged Business Enterprises (SDBE) participation. These requirements are detailed in Appendix A, SDBE Requirements and Construction Forms.

1. The Contractor shall submit form E-105 "Statement of Intent to Perform as Subcontractor" within five (5) days of the Bid opening for each Subcontractor intended to be counted towards the SDBE goals of the Contract.

2. All questions regarding SDBE documents or requirements may be directed to the City of Durham, Department of Equal Opportunity/Equity Assurance at (919) 560-4180.

L. A Privilege License for all Subcontractors shall be filed within five (5) days after the Bid opening. The Contractor and all Subcontractors shall obtain a City of Durham Privilege License from the Department of Finance, Treasury Management Division, located at 101 City Hall Plaza, Durham, North Carolina, (919) 560-4700.

M. The City of Durham or Engineer may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by a particular Subcontractor or Supplier.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights, trade secrets, proprietary information, or copyrights held by others, whether or not a particular invention, design, process, Product, or device is specified in the Contract Documents for use in the performance of the Work, and whether or not Engineer, or Owner, or the consultants, contractors, agents, and employees of either of them are aware of such patent rights, trade secrets, proprietary information, and copyrights. ~~If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.~~

~~B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.~~

6.08 *Permits*

A. Unless otherwise provided in ~~the Supplementary Conditions~~ Article 6, Contractor shall obtain and

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pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. ~~However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.~~

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

B. The Contractor will be reimbursed for all North Carolina Sales and Use Tax paid during any preceding month, at the time the monthly estimate is paid, provided they submit a sworn notarized statement itemizing the tax, showing each amount and to whom paid, and certifying that the articles purchased were used in Work performed for the City of Durham. State tax and County tax must be separated. Group amounts by County and provide a subtotal for each County. Amounts for items purchased outside of Durham County and delivered on-Site shall be grouped by County. One copy of all receipts/invoices must be provided for these amounts.

C. Reimbursable sales taxes as described below are to be excluded from unit prices.

1. Sales taxes are reimbursable if they were originally paid on purchases of building materials, fixtures, and equipment that become part of or annexed to any building or structure that is owned or leased by the City of Durham and is being erected, altered, or repaired for use by the City of Durham. Infrastructure (streets, sidewalks, sewer pipes, and water lines, etc.) is generally held to be "structure" so as to allow reimbursement for sales taxes paid on materials and fixtures that become a part of or are annexed to it. Examples of sales taxes that cannot be reimbursed include those paid for purchases such as scaffolding, tools, equipment repair parts, equipment rentals, forms for concrete, or fuel to operate machinery or equipment.

E. The Contractor may seek reimbursement at the same time as, or subsequent to, the Application for Payment is made for the properties that were taxed. The Contractor shall not file for reimbursement for sales taxes before the Contractor has the right to file an Application for Payment for properties that were taxed.

F. Sales taxes paid by Subcontractors should be detailed on the form "Reimbursable Sales and Use Tax Statement by Subcontractor" (see Appendix H). The Subcontractor completes and signs the form and provides the form to the Contractor. The Contractor submits all sales tax forms with the Contractor's pay application for the properties listed on that form. The City of Durham will make the reimbursement payable to the Contractor. Except for the differences listed above, the answers to all questions on this page still apply whether the Subcontractor or the Contractor completes and signs the form.

G. Contractor shall include all requests for reimbursement of North Carolina Sales and Use with Applications for Payment. No Sales or Use taxes shall be reimbursed to the Contractor after Owner issues final payment.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

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1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

~~3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.~~

3. As used in this Paragraph 6.11, 'occupant' includes any person, firm, or corporation, whether present as a licensee, invitee, lessee, or sublessee of any tier or level.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger ~~it~~ the Work or adjacent property.

E. Where the Site is located on private property, Contractor shall take special care to restore the Site after construction is completed. All costs for this private property restoration shall be included in itemized unit prices. Restoration may include, but is not limited to, returning the Site to its original condition. Additional effort may be required to restore the Site. The Engineer or Resident Project Representative shall determine whether a Site has been adequately restored.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or

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entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

E. *Existing Utilities*

1. The City of Durham and Engineer have, to the best of their ability, shown the existing utilities and obstructions (water, sewer, electrical, gas, telephone, storm drainage, etc.) that may affect the Work. City of Durham Water & Sewer Construction Specifications require that Contractor shall, at Contractor's expense, locate all existing utilities that may be encountered during the Work. Contractor shall make every effort to avoid damage or disruption of services during the Work.

2. Contractor shall contact the North Carolina One Call Center to coordinate existing utility location prior to commencement of any Work.

a. North Carolina One Call Center, (800) 632-4949, www.ncocc.org.

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued. Contractor shall promptly report in writing to Owner and Engineer all accidents or incidents arising out of or in connection with the Work which cause death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injury, or serious property damage is caused, Contractor shall report the accident or incident immediately by telephone or messenger to Owner and Engineer. Contractor shall give Owner and Engineer reasonable advance notice before using or placing explosives or other hazardous materials or equipment on the Site.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:* Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review

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and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a prominent specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall prominently direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner, whether or not a Claim is pending. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, whether or not a Claim is pending, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

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C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 *Indemnification*

~~A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.~~

A. To the maximum extent allowed by Laws and Regulations, Contractor shall defend, indemnify, and save harmless Indemnities from and against all Charges that arise in any manner from, in connection with, or out of, performance of the Work as a result of acts or omissions of Contractor, any Subcontractor, any Supplier, or any person or organization directly or indirectly employed by any of them or any entity for whose acts any of them may be liable. In performing its duties under this Paragraph 6.20.A, Contractor shall at its sole expense defend Indemnitees with legal counsel reasonably acceptable to Owner.

~~B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.~~

B. *Definitions:* As used in Paragraph 6.20.A above and Paragraphs 6.20.C and 6.20.D below:

1. 'Charges' means claims, judgments, costs, damages, losses, demands, liabilities, obligations, fines, penalties, royalties, settlements, and expenses. Included within 'Charges' are:

a. interest and reasonable attorneys' fees assessed as part of any such item;

b. amounts for alleged violations of sedimentation pollution or other environmental or pollution laws and regulations -- including any such alleged violation that arises out of the handling, transportation, deposit, or delivery of the items or materials that are involved in performance of the Work;

c. amounts related to Hazardous Environmental Conditions; and

d. amounts related to alleged infringement of patent rights, trade secrets, proprietary information, or copyrights.

2. 'Indemnitees' means Owner and Engineer and the officers, officials, independent contractors, agents, and employees of Owner and Engineer, but does not include Contractor.

~~C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:~~

~~1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or~~

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~~2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.~~

C. *Limitations of Contractor's Obligation:* Neither Paragraph 6.20.A nor any other provision of the Contract Documents shall be construed to require Contractor to indemnify or hold harmless Indemnitees against liability for damages arising out of bodily injury to persons or damage to property proximately caused by or resulting from the negligence, in whole or in part, of Indemnitees.

D. Nothing in Paragraphs 6.20.A, 6.20.B, or 6.20.C shall affect any warranties in favor of the Owner. This Paragraph 6.20.D is in addition to, and Paragraphs 6.20.A and 6.20.B above shall be construed separately from, any other indemnification provisions that may be in the Contract Documents. This Paragraph 6.20 shall remain in force despite termination of this Agreement (whether by expiration of the term or otherwise) and termination of the services of the Contractor under this Contract, but this sentence does not imply that other provisions in the Contract Documents do not survive termination.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 *Related Work at Site*

~~A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:~~

~~1. written notice thereof will be given to Contractor prior to starting any such other work; and~~

~~2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.~~

A. Owner may perform other work at or affecting the Site by Owner's own forces or let other direct contracts therefor, or have other work performed at or affecting the Site by utility owners.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

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C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies not reasonably discoverable by said inspection in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in ~~Supplementary Conditions~~ Article 7:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in ~~the Supplementary Conditions~~ Article 7, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

7.04 *Other Work*

A. The Agreement, Paragraph 1.10.H.3, stipulates any other work on the Site at the time of Notice to Proceed known to the City of Durham and the Engineer.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

~~8.01 *Communications to Contractor*~~

~~A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.~~

8.02 *Replacement of Engineer*

~~A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.~~

A. If Owner appoints a substitute Engineer, the substitute Engineer shall have the same status under the Contract Documents as the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

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8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in ~~the Supplementary Conditions~~ Article 8.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in ~~the Supplementary Conditions~~ Article 9, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in ~~the Supplementary Conditions~~ Article 9.

B. The Resident Project Representative will serve as Engineer's liaison with Contractor, working principally through Contractor's Superintendent to assist such Superintendent in understanding the intent of the Contract Documents.

C. The Resident Project Representative shall have the following authority, to the extent that Engineer has such authority: to conduct on-site observations of the Work in progress to confirm that it is proceeding in accordance with the Contract Documents; to verify that tests, equipment, and systems start-ups and maintenance instructions are conducted as required by the Contract Documents; and to disapprove and reject defective Work in accordance with the Contract Documents, including Article 13. No approval, inspection, failure to reject, or other action or failure to act by the Resident Project Representative shall reduce or waive Owner's right to non-defective Work that meets the requirements of the Contract Documents.

D. Except upon written instructions of Engineer and Owner, the Resident Project Representative shall not:

1. authorize any deviation from the Contract Documents or approve any substitute materials or equipment;

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2. exceed limitations of Engineer's authority as set forth in the Contract Documents;

3. undertake any of the responsibilities of Contractor, Subcontractors, or Contractor's Superintendent, or expedite the Work;

4. advise on or issue directions relative to any aspect of the means, methods, sequences, techniques, or procedures of construction unless such is specifically called for in the Contract; or

5. advise on or issue directions as to safety precautions and programs in connection with the Work.

E. Paragraph 9.03.D shall not be construed to expand the Resident Project Representative's authority.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or

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performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

C. The unit prices included in the Agreement shall be applied to all additions, deletions, or revisions. The total price for all proposed additions, deletions, or revisions shall not exceed in cost fifty percent (50%) of the original Contract Price.

D. The Contractor shall perform emergency Work as required by the City of Durham. In such instances, the Engineer or Resident Project Representative shall give written notice to the Contractor for each instance of emergency Work. The Contractor shall perform all emergency Work within seventy-two (72) hours of the written notice. The City may perform (or engage another contractor to perform) emergency Work, at the Contractor's expense, if the Contractor fails to perform emergency Work within the time limit. If the City performs (or engages another contractor to perform) the following conditions apply:

1. if emergency Work is not a Unit Price Work item, the City shall charge all costs and expenses of the emergency Work, plus the City's then-current overhead charge to the Contractor and deduct those amounts from any money due to Contractor on the then-current or then-future Applications for Payment; and

2. if the emergency Work is a Unit Price Work Item, the City will charge all applicable emergency Work unit costs, plus an administrative and overhead charge of one hundred dollars ($100.00) per instance to the Contractor and deduct those amounts from any money due to Contractor on the then-current or then-future Applications for Payment.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in the Contract Documents, including Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually

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performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required*: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer or Owner allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer or Owner allows additional time).

C. *Engineer's Action*: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor:

1. invokes the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial, or

2. if the dispute resolution procedures set forth in Article 16 are not invoked and the appealing party institutes a formal proceeding, within 30 days of such action or denial, in a forum of competent jurisdiction (allowed under the Contract) to exercise such rights or remedies as the appealing party may have with respect to the Engineer's decision, unless otherwise agreed in writing by Owner and Contractor. The City Manager has authority to enter into a written agreement extending the time period during which either party may institute such a formal proceeding.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

G. *Mitigation of Damages:* Once a party recognizes that it has grounds for a Claim, dispute, or other matter that may be submitted to Engineer (whether or not it may also be submitted to the other party), it shall use its best efforts to furnish Engineer and the other party, as expeditiously as possible, with notice of the potential Claim, dispute, or other matter. The potential claimant shall cooperate with Engineer and the party against whom the potential Claim, dispute, or other matter may be made in an effort to mitigate damages, delay, and other adverse consequences arising out of the condition which is the cause of the potential claim, dispute, or other matter. This duty to mitigate continues after the notice of Claim, dispute, or other matter is actually delivered.

H. These requirements, including as to time, are of the essence of the Contract Documents. No course of conduct or dealings between the parties, no express or

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implied acceptance of alterations or additions to the Work, and no assertion that the Owner has been unjustly enriched by any alteration or addition to the Work shall be the basis for any Claim to an increase in the Contract Price. In addition, all of Paragraphs 9.08.C and 9.08.D shall apply to those claims.

10.06 *Change Orders*

A. Unless the Contract Documents or the Change Order provides otherwise, agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including all direct and indirect costs associated with such change and any and all adjustments to the Contract Price and the construction schedule. If a Change Order increases the Contract Price, Contractor shall include the Work covered by such Change Orders in Applications for Payment.

ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of overtime or of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

~~4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.~~

5. Supplemental costs including the following:

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

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

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. These rates shall include all fuel, lubricants, insurance, etc. Equipment rental charges shall not exceed the prorated monthly rental rates listed in the edition of the 'Compilation of Rental Rates for Construction Equipment', as published by the Associated Equipment Distributors, which is current when

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the equipment rental begins. Charges per hour shall be determined by dividing the monthly rates by 176. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

~~f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.~~

g. The cost of utilities, fuel, and sanitary facilities at the Site.

~~h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.~~

~~i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.~~

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

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

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

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting and in accordance with Owner's and Engineer's instructions practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data. The Owner and Engineer may specify additional or different requirements in accordance with the preceding sentence, but unless they so specify, the following is required in order to support a determination of cost of Work pursuant to Paragraph 11.01:

1. For costs under Paragraph 11.01.A.1, for each person who worked on the additional Work: a statement showing his or her job title, hourly rate paid or other method of compensation, other amounts described under Paragraph 11.01.A.1 that were paid, and the net change in the number of hours worked attributable to the change in the Work.

2. For costs under Paragraph 11.01.A.2, dated receipts from the Subcontractors and/or Sub-subcontractors. The receipts must acknowledge the Contractor's payment, identify the materials, supplies, equipment and show the name of the Owner's Project.

3. For costs under Paragraph 11.01.A.5.c, dated receipts from the rental the Subcontractors and/or Sub-

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subcontractors. The receipts must acknowledge the Contractor's payment, identify the machinery and equipment, and show the name of the Owner's Project, the rental rate, and the number of hours, days, miles, or other basis of the charge. If the Contractor supplies the machinery or equipment, the statement must show the rental rate and the number of hours, days, miles, or other basis of the charge, and the rental rate must not exceed the market rental rate.

4. For costs under Paragraph 11.01.A.5.i, written proof of a net change in the amount paid by the Contractor attributable to the change in the Work. For bonds, the proof must include the invoice or statement from the surety or its agent showing that it is attributable to the change in the Work.

11.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation , overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. If Owner changes any estimate of quantity before the Agreement is executed, it may substitute the new estimated quantity in those calculations. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead, ~~and~~ profit, and cost for coordinating the Work with the City of Durham for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement (provided that if the Contract Documents give a range of quantities for any item of Unit Price Work, any quantity within that range is agreed not to materially differ from the estimated quantity, and provided further that a twenty percent (20%) difference, plus or minus, of a specific estimated quantity is agreed not to materially differ from the estimated quantity); and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

E. Each unit price shall be deemed to include an amount considered by the Contractor to be adequate to cover all construction surveying and existing utility location required to complete the Work as specified, or as directed by the Engineer, for each separately identified item.

F. This Paragraph 11.03.F applies except to the extent if any that the Bidding Documents specify otherwise.

1. Unit prices, if any, shall apply to Work done pursuant to Change Orders and to Work Change Directives.

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2. In addition to Paragraph 11.03.F.1, it is agreed:

a. If unit price items are included in the Contract Documents for Work other than Work done pursuant to Change Orders and to Work Change Directives, it is also agreed that the Contract Price was calculated on the assumption that certain estimated quantities of unit price items will be used in the Work. Those estimated quantities are stated in the Contract Documents. The unit price multiplied by the quantity is referred to as the 'extension.'

b. If the actual extension of a unit price item is less than the estimated extension, the Contract Price shall be reduced accordingly.

c. The actual extension of each unit price item shall not exceed the estimated extension for that item unless the Contractor has received advance written approval from the Engineer to exceed the estimated quantity for that item. That approval may be limited in the Engineer's discretion. If that approval is given, the Contract Price shall be adjusted as follows:

1) If the actual quantity of a unit price item is more than the estimated quantity, the Contract Price shall be increased to reflect the difference between the actual and the estimated quantities.

2) If approval is not given, the Contractor shall not be obligated to use the quantity of that unit price item that exceeds the approved quantity, and a Change Order or Work Change Directive shall be executed to reflect the changes in the Work resulting from the actual quantity of the item that is used.

3) If the Contract Documents explicitly and clearly state that no further approval from the Engineer or the Owner is required for the Contractor to exceed the estimated quantity of specified unit price items, then it is agreed that the Contract Price shall be adjusted to reflect the actual quantities of those items without the necessity of further approval.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be ~~15 percent~~ ten percent (10%) and shall not be applied to payroll taxes, social security contributions, or unemployment taxes;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of ~~15 percent~~ ten percent (10%) of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 (excluding payroll taxes, social security contributions, and unemployment taxes) and that ~~any higher~~ the next higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

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d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

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

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God. Nothing in Article 12 or any other provision of the Contract Documents is intended to forbid or limit compensable damages for delays caused solely by the Owner or the Owner's agent, and any provision to the contrary shall be construed to comply with this Paragraph 12.03.A. For purposes of this Paragraph 12.03.A, 'Owner' or the 'Owner's agent' does not include prime contractors or subcontractors.

B. If Owner or Owner's agent~~, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible,~~ delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the ~~Contract Price or the~~ Contract Times~~, or both~~. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C. Except to the extent, if any, that it may otherwise be provided in the Contract Documents, Contractor's sole remedy for any of the following:

1. delay in the commencement, prosecution, or completion of the Work,

2. hindrance or obstruction in the performance of the Work,

3. loss of productivity, or

4. other similar delays and losses (said 1, 2, 3, and 4 being collectively referred to in this Paragraph 12.03 as 'Such Delays').

Whether or not Such Delays are foreseeable, shall be an extension of the Contract Times if permitted and granted under this Article 12. To the extent allowed by the Contract Documents, Contractor shall be entitled to no other compensation or recovery of any damages in connection with any Such Delays, including consequential damages, lost opportunity costs, impact damages, or other similar remuneration. To the extent of conflict, the Contract or Agreement as signed by the Owner and Contractor shall control this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

F. Adjustment of Contract Times for weather related delays shall be as stipulated in the Agreement, Paragraph 1.4.D.

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ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

~~A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.~~

A. Contractor shall employ and pay for all inspections and testing services required by the Contract Documents, except those for which the Contract Documents specifically call for Owner to employ and pay.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform ~~all~~ the inspections, tests, or approvals required by the Contract Documents. ~~except:~~

~~1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;~~

~~2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and~~

~~3. as otherwise specifically provided in the Contract Documents.~~

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

G. The City of Durham may engage an independent consultant for the direct inspection and administration of any or all of the Work to be performed in the Contract. This consultant shall act on the behalf of the City of Durham.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, or contrary to the Contract Documents, or before required inspections, tests, or approvals, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Contractor shall not be entitled to any increase in Contract Times because of the time involved in such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction; and Owner shall be entitled to an

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appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05. However, if such Work had been prematurely covered, the preceding sentence shall not apply, and Contractor shall have no such rights.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, or persistently fails to carry out the Work in accordance with the Contract Documents, or if the Work interferes with the operation of the existing facility, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others). Engineer and Owner may reject any defective Work, even if inspected and paid for, except to the extent accepted under Paragraph 13.08. A failure to disapprove or reject such defective Work does not constitute an acceptance.

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly (but in any event, commencing within thirty (30) days after receipt of said instructions and proceeding promptly to completion), without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly (but in any event, commencing within 30 days after receipt of said instructions and proceeding promptly to completion) comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications. If prior to the date of Substantial Completion, Contractor or any entity for which Contractor is responsible uses or damages any portion of the Work, then Contractor, at no expense to Owner, shall cause such portion, system, device, or item to be restored (whether by replacement, repair, or otherwise) to the condition the item was required to be in, if such use or damage had not occurred. Nothing herein shall reduce the duty of Contractor with respect to such item in order to obtain a final payment.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction

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period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

F. Establishment of the one (1) year periods in this Paragraph 13.07 relates only to the specific obligation of Contractor to take certain actions relating to defective Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

B. An acceptance of defective Work is not effective as an acceptance unless it specifically describes the condition that is defective and contains substantially the following statement: 'The Owner accepts [such condition] despite its being defective.'

13.09 *Owner May Correct Defective Work*

A. If Contractor fails ~~within a reasonable time~~ after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work some or all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow and provide Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site and storage locations referred to in the preceding sentence to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

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1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein including the transportation to the Work Site, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

4. The Contractor shall submit the Subcontractor Monthly Record of Payment Report form with each Application for Payment, with two (2) exceptions. No monthly report is required with the initial and final Application for Payment. The Contractor shall submit the Final Subcontracting Report form with the final Application for Payment. Both subcontractor forms are located in Appendix C. Failure to submit the required forms indicated herein may be a basis for denying an Application for Payment.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

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d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. ~~the Work is defective~~ any of the Work, whether or not paid for, is defective, except to the extent accepted under Paragraph 13.08, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; ~~or~~

d. Engineer has actual knowledge of or reasonable grounds to believe in the occurrence of any of the events enumerated in Paragraph 15.02.A.

e. there are reasonable grounds to believe that the Work cannot be completed for the unpaid balance of the Contract Price; or

f. Contractor is anticipated to owe damages or other amounts to Owner.

C. *Payment Becomes Due*

1. ~~Ten~~ Thirty (30) days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off, including any cost or expense related to defective Work, against the amount recommended; ~~or~~

d. Owner has actual knowledge of or reasonable grounds to believe in the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

e. any of the property and casualty insurance requirements enumerated in Article 5 are not complied with at their renewal dates.

f. there are reasonable grounds to believe that the Work cannot be completed for the unpaid balance of the Contract Price; or

g. Contractor is anticipated to owe damages or other amounts to Owner.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld, as determined in a competent jurisdiction having binding authority, shall be treated as an amount due as determined by Paragraph 14.02.C.1.

4. Failure of Owner to refuse to make payment does not waive Owner's rights under the Contract Documents.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

B. The Application for Payment shall be accompanied by such data, satisfactory to Owner, as will establish Owner's title to the material and equipment and protect his interest therein, including applicable insurance. Each subsequent Application for Payment shall include an Affidavit of Contractor stating that all previous progress

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payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Applications for Payment.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected), including the time within which each of those items shall be completed or corrected, reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

~~4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.~~

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

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1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

2. Without extra charge to Contractor, Engineer will make only two (2) such inspections to determine final completion. If Engineer is not able to make the representations and findings required to recommend final payment, successive inspections requested by Contractor shall be charged to Contractor.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. ~~a waiver of all Claims by Owner against Contractor, except~~ no waiver of any claims, or the right to make any claims, by Owner against Contractor, including Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

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2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

14.10 *Prompt Payment to Subcontractors*

A. Within seven (7) days of receipt by Contractor of each payment from the City of Durham under this Contract, the Contractor shall pay all Subcontractors (including Suppliers and others) based on work completed or service provided under the subcontract. Should any payment to the Subcontractor be delayed by more than seven (7) days after receipt of payment by the Contractor from the City under this Contract, the Contractor shall pay the Subcontractor interest, beginning on the eighth (8th) day, at the rate of one percent (1%) per month or fraction thereof on such unpaid balance as may be due. By appropriate litigation, Subcontractors shall have the right to enforce this Paragraph 14.10.A directly against the Contractor, but not against the City of Durham. If the Engineer determines that it is appropriate to enforce this Paragraph 14.10.A, the City of Durham may withhold the sums estimated by the Engineer to be sufficient to pay this interest from progress or final payments to the Contractor.

B. Nothing in this Paragraph 14.10 shall prevent the Contractor at the time of invoicing, application, and certification to the City from withholding invoicing, application, and certification to the City for payment to the Subcontractor for unsatisfactory job progress; defective goods, services, or construction not remedied; disputed work; third-party claims filed or reasonable evidence that such a claim will be filed; failure of the Subcontractor to make timely payments for labor, equipment, and materials; damage to the Contractor or another Subcontractor; reasonable evidence that the subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage consistent with the Agreement.

C. The Engineer may require, as a prerequisite to making progress or final payments, that the Contractor provide statements from any Subcontractors designated by the Engineer regarding the status of their accounts with the Contractor. The statements shall be in such format as the Engineer reasonably requires, including notarization if so specified.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which, or the event after which, Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05. No adjustment shall be made to the extent that performance is, was, or would have been suspended, delayed, or interrupted directly or indirectly by Contractor or any Entity for which Contractor is responsible. The Contract Price shall not be adjusted except to the extent that the total of such suspensions exceeds thirty (30) days and after excluding such thirty day period.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and

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other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination~~, including fair and reasonable sums for overhead and profit on such Work~~ as determined in Article 11;

2. expenses sustained prior to the effective date of termination in~~ performing services and furnishing labor,~~ ordering materials~~, or equipment~~ as required by the Contract Documents in connection with uncompleted Work,~~ plus fair and reasonable sums for overhead and profit on such expenses;~~, the Owner shall have the options detailed in Paragraphs 15.03.A.2.a through 15.03.A.2.d;

a. Upon seven (7) days of receipt of the notice of termination for convenience Contractor shall provide evidence of materials ordered as described in Paragraph 15.03.A.2 including an itemized list, cost, order and delivery dates, and all terms or conditions (including ordering, canceling, or restocking charges).

b. Owner may direct the Contractor to cancel any one or more orders, in which case the Owner shall be liable for cancellation and restocking charges and other charges properly attributable to the cancellation; or

c. Owner may direct the Contractor to keep any one or more orders in effect and/or to assign any one or more orders to the Owner, in which case the Owner shall be responsible for bearing the costs of the order.

d. Within ten (10) days of the Owner's receiving the evidence described in Paragraph 15.03.A.2.a, the Owner shall give the Contractor notice of which options it exercises under Paragraphs 15.03.A.2.b or 15.03.A.2.c.

~~3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and~~

3. The Owner shall pay the Contractor a termination fee of one hundred dollars ($100.00) in addition to other amounts due pursuant to this Paragraph 15.03.

~~4. reasonable expenses directly attributable to termination.~~

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice

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to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

15.05 *Protection and Preservation of the Work*

A. Upon suspension (Paragraph 15.01), termination (Paragraphs 15.02, 15.03, and 15.04), or stopping Work (Paragraph 15.04):

1. Contractor shall take actions necessary for the protection and preservation of the Work, and Site, including those actions required by the Contract, except to the extent otherwise directed by the Engineer; and

2. Contractor shall erect and leave in place barricades, lights, and other safety devices as are appropriate for the protection of the public, including those devices required by the Contract, except to the extent otherwise directed by the Engineer.

B. If the Contractor performs work pursuant to directions given by the Engineer as described in Paragraph 15.05.A for the protection and preservation of the Work or of the public, Owner shall pay the Contractor for such protection and preservation work to the extent that it is greater than the Contractor would have done during or at the end of a work day had the contract not been suspended or terminated or the Work stopped.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

~~A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.~~

A. Any party allowed to use the dispute resolution process adopted by the State Building Commission pursuant to G. S. 143-135.26(11) and G. S. 143-128(F1) may participate in mediation pursuant to the dispute resolution process as a precondition to initiating litigation concerning the dispute. The amount of $15,000 or more must be at issue before a party may require other parties to participate in the dispute resolution process. The costs of the dispute resolution process shall be divided between the parties to the dispute with at least one-third of the cost to be paid by the Owner, if the Owner is a party to the dispute.

~~B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.~~

~~C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:~~

~~1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or~~

~~2. agrees with the other party to submit the Claim to another dispute resolution process, or~~

~~3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.~~

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered by facsimile or in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

B. If a party is notified of a replacement person for purpose of getting notice, then notices afterwards shall be directed to the replacement person. Written notices shall be deemed to have been duly served, made, and received, and receipt thereof completed, if:

1. delivered in person to the individual or to that individual's receptionist; or

2. mailed by registered or certified mail to the last business address known to the party giving notice; or

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3. faxed to the last fax number known to the party giving notice, provided that the fax transmission must be completed.

C. Written notices to the Owner must be directed to the Owner's representative, provided that if no individual is designated as the Owner's representative, then written notices must be directed to the City Manager. As used in this Paragraph 17.01, the word 'notice' includes 'request.'

D. The notice will be deemed served, made, and received, and receipt thereof completed, on the earlier of:

1. the date delivered in person; or

2. three (3) days after placing in the custody of the U. S. Postal Service; or

3. the date the fax transmission was completed.

E. *Address of Surety:* Unless the surety provides a different address as provided in Paragraph 17.01, notice to a surety may be sent to the address shown on the performance bond; if no address for the surety is shown on the performance bond, the surety's address provided by the N. C. Department of Insurance shall suffice; and if the Department of Insurance lacks an address, the last-known address of the attorney-in-fact who signed the performance bond shall suffice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation. As used in the preceding sentence, a 'legal holiday by the law of the applicable jurisdiction' is a holiday observed by city government of the City of Durham. See City Code Section 42-16 for information on such holidays.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

17.07 *Effect on Other Rights*

A. The Contract Documents shall not be construed to create a cause of action against Owner and in favor of any person, firm, or corporation, other than Contractor. The Contract Documents shall not be construed to create a cause of action against Engineer and in favor of any person, firm, or corporation, other than Owner. The Contract Documents are not intended to create a defense, except by Contractor, to any cause of action that may be brought by Owner. The recitation of duties, or limitations of duties, in the Contract Documents (e.g., Paragraph 9.09) of Engineer or Engineer's consultants, representatives, and assistants, shall not be construed to reduce Owner's rights against Engineer or to reduce Engineer's duties to Owner. No action or failure to act by Owner shall constitute a waiver of a right except to the extent specifically agreed in writing. If Owner waives a right, that waiver shall not imply other waivers of that right. If liquidated damages are assessable against the Contractor, Owner may, in its discretion, waive the imposition of some or all of the liquidated damages against the Contractor. That waiver shall be valid only if done by a writing signed by the City Manager or an Assistant City Manager, and the waiver must refer specifically to 'liquidated damages.' That waiver shall not constitute an extension of the Contract Time.

B. The Agreement represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations and representations. Except as specifically otherwise provided, the Agreement is not intended to benefit, or to create a cause of action in favor of, any person, firm, or corporation, other than Owner and Contractor. Oral statements by anyone, including Owner's employees, agents, and Engineer, whether made before or after the execution of the Agreement, shall not be binding on Owner and shall not reduce Owner's rights under the Contract Documents.

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17.08 *Place of Project*

A. *Choice of Law and Forum:* The place of the Project is North Carolina. This Contract shall be deemed made in Durham, North Carolina. This Contract shall be governed by and construed in accordance with the laws of North Carolina. The exclusive forum and venue for all actions arising out of this Contract shall be the North Carolina General Court of Justice, in Durham County. Such actions shall neither be commenced in nor removed to federal court. This Paragraph shall not apply to subsequent actions to enforce a judgment entered in actions heard pursuant to this Paragraph.

17.09 *Equal Employment Opportunity (EEO)*

A. During the performance of this Contract the Contractor agrees as follows:

1. Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. Contractor shall take affirmative action to insure that applicants are employed and that employees are treated equally during employment, without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. Such action shall include but not be limited to the following: employment, upgrading, demotion, transfer, recruitment or advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth these EEO provisions;

2. Contractor shall in all solicitations or advertisement for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap;

3. Contractor shall send a copy of the EEO provisions to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding;

4. in the event of Contractor's noncompliance with these EEO provisions, the City of Durham may cancel, terminate, or suspend this contract, in whole or in part, and the City may declare the Contractor ineligible for further City contracts; and

5. unless exempted by the City Council of the City of Durham, Contractor shall include these EEO provisions in every purchase order for goods to be used in performing this Contract and in every subcontract related to this Contract so that these EEO provisions will be binding upon such Subcontractors and Suppliers.

B. *City Policy:* The City of Durham opposes discrimination on the basis of race and sex and urges all of its contractors to provide a fair opportunity for minorities and women to participate in their work force and as subcontractors and suppliers under City contracts.

17.10 *Americans with Disabilities Act (ADA)*

A. The City of Durham will not discriminate against qualified individuals with disabilities on the basis of disability. Anyone who requires an auxiliary aid or service for effective communications, or assistance to participate in a City program, service, or activity, should contact the office of Stacey Poston, ADA Coordinator, Voice: (919) 560-4197, ext. 254, TTY: (919) 560-4809; Stacey.Poston@durhamnc.gov, as soon as possible but no later than forty-eight (48) hours before the scheduled event.

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SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

1.1 SUMMARY

A. Section Includes
1. Contingency allowances.
2. Schedule of values.
3. Applications for payment.
4. Change procedures.
5. Defect assessment.
6. Unit prices.
7. Alternates.

B. Related Sections:
1. Section 01 33 00 - Submittal Procedures.
2. Section 01 40 00 - Quality Requirements.
3. Section 01 60 00 - Product Requirements.
4. Section 01 70 00 – Execution and Closeout Requirements.

1.2 CONTINGENCY ALLOWANCES

A. The City of Durham shall include in the Contract, a stipulated rate of 15% of the awarded contract bid for use upon City of Durham’s instruction.

B. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.

C. Funds will be drawn from Contingency Allowance only by Change Order.

1.3 SCHEDULE OF VALUES

A. Refer to Appendix J.

1.4 APPLICATIONS FOR PAYMENT

A. Refer to Appendix J.

1.5 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The Engineer will advise of minor changes in the Work not involving adjustment to Contract Price or Contract Time by issuing supplemental instructions.

C. The Engineer may issue a Notice of Change including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change.

D. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors. Document requested substitutions in accordance with Section 01 60 00 - Product Requirements.

E. Stipulated Price Change Order: Based on Notice of Change and Contractor's estimated price quotation or Contractor's request for Change Order as approved by Engineer.

F. Unit Price Change Order: For Contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of Work which are not pre-determined, execute Work under Work Directive Change. Changes in Contract Price or Contract Time will be computed as specified for Change Order.

G. Work Directive Change: Engineer may issue directive, on EJCDC 1910-8-F Work Directive Change signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Price or Contract Time. Promptly execute change.

H. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

I. Correlation Of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Price.
   2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of Work affected by the change, and resubmit.
   3. Promptly enter changes in Project record documents.

1.6 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit price will be adjusted to new price at discretion of Engineer.

D. Defective Work will be partially repaired to instructions of Engineer, and unit price will be adjusted to new price at discretion of Engineer.

E. Individual specification sections may modify these options or may identify specific formula or percentage price reduction.

F. Authority of Engineer to assess defects and identify payment adjustments is final.

G. Non-Payment For Rejected Products: Payment will not be made for rejected Products for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected Products.

1.7 UNIT PRICES

A. Authority: Measurement methods are delineated in individual specification sections.

B. Measurement methods delineated in individual specification sections complement criteria of this section. In event of conflict, requirements of individual specification section govern.

C. Take measurements and compute quantities. Engineer will verify measurements and quantities.

D. Unit Quantities: Quantities and measurements indicated in Bid Form are for Contract purposes only. Quantities and measurements supplied or placed in the Work shall determine payment.
1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at unit prices contracted.
2. When actual Work requires twenty-five percent (25%) or greater change in quantity than those quantities indicated, Owner or Contractor may claim for Contract Price adjustment.

E. Payment Includes: Full compensation for required labor, Products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit price for Work incorporated in or made necessary by the Work.

G. Measurement Of Quantities:
   1. Weigh Scales: Inspected, tested and certified by the North Carolina Department of Agriculture, Standards Division, Measurement Section within past year.
   2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
   3. Metering Devices: Inspected, tested and certified by North Carolina Department of Agriculture, Standards Division, Measurement Section within past year.
   4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
   5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
   6. Measurement by Area: Measured by square dimension using mean length and width or radius.
   7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
   8. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

1.1 SUMMARY

A. Section Includes
1. Coordination and project conditions.
2. Preconstruction meeting.
3. Site mobilization meeting.
4. Neighborhood meetings
5. Progress meetings.
6. Pre-installation meetings.
7. Special procedures.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Property Owner's partial use.

C. After Property Owner occupancy of Site, coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Property Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Engineer will schedule meeting after Notice of Award.

B. Attendance Required: Representative of the City of Durham, Engineer, and Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
5. Designation of personnel representing parties in Contract and Engineer.

6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, estimate request, Change Orders, and Contract closeout procedures.
7. Scheduling.
8. Scheduling activities of Geotechnical Engineer.

D. Record minutes and distribute copies within two (2) days after meeting to participants, with two (2) copies to Engineer, City of Durham Representative, and those affected by decisions made.

1.4 SITE MOBILIZATION MEETING

A. Engineer will schedule meeting at Site prior to Contractor occupancy.

B. Attendance Required: Representative of the City of Durham, Engineer, Special Consultants, Property Owner, Contractor, Contractor's Superintendent, and major Subcontractors.

C. Agenda:
1. Use of premises by City of Durham, Property Owner, and Contractor.
2. Property Owner's requirements and partial use.
3. Construction facilities and controls provided by City of Durham/Property Owner.
4. Temporary utilities provided by the City of Durham/Property Owner.
5. Survey and construction layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record Documents.
11. Inspection and acceptance of equipment put into service during construction period.

D. Record minutes and distribute copies within two (2) days after meeting to participants, with two (2) copies to Engineer, City of Durham Representative, Property Owner and those affected by decisions made.

1.5 NEIGHBORHOOD MEETINGS

A. A neighborhood Meeting will be held onsite approximately two weeks prior to construction of each street sidewalk to inform the residents of the upcoming construction. Representatives of the City and the Contractor shall be in attendance.

1.6 THE THREE-STREET RULE

A. The Contractor shall not be allowed to work on more than three streets (sidewalks) at any given time. Before the fourth street (sidewalk) project can begin, one of the previous streets (sidewalks) shall have been closed out. This close out includes a final inspection by City of Durham inspectors and digital as-builts submitted to and approved by the Public Works Department’s Engineering Division.

1.7 PROGRESS MEETINGS

A. Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

B. Attendance Required: Job superintendent, Representative of the City of Durham, Engineer, as appropriate to agenda topics for each meeting.

C. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

D. Record minutes and distribute copies within two (2) days after meeting to participants, with two (2) copies to Engineer, City of Durham Representative, and those affected by decisions made.

1.8 PRE-INSTALLATION MEETINGS

A. When required in individual specification sections, convene pre-installation meetings at Site prior to commencing Work of specific section.

B. Require attendance of parties directly affecting, or affected by, Work of specific section.

C. Notify Engineer four (4) days in advance of meeting date.

D. Prepare agenda and preside at meeting:
1. Review conditions of installation, preparation and installation procedures.
2. Review coordination with related work.

E. Record minutes and distribute copies within two (2) days after meeting to participants, with two (2) copies to Engineer, and those affected by decisions made.

1.9 SPECIAL PROCEDURES

A. Materials: As specified in Product sections; match existing with new Products and salvaged Products for patching and extending Work.

B. Employ skilled and experienced installer to perform alteration Work.

C. Cut, move, or remove items as necessary for access to Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to permit installation of new Work and finishes.

G. Remove, cut, and patch Work in manner to minimize damage and to permit restoring Products and finishes to original or specified condition.

H. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

I. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

J. Finish surfaces as specified in individual Product sections.

1.10 EXISTING GRANITE CURB

A. Any existing granite curb removed during this construction project shall be stockpiled on the construction site. The Contractor shall contact the Engineer for the Public Works Operations Center to pick up. The Contractor shall not sell this granite curb nor shall the Contractor give this granite curb to anyone not associated with the City of Durham. The contract unit bid price for this item includes removal and stockpiling.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

1.1 SUMMARY

A. Section Includes
1. Types of Submittals
2. Submittal procedures.
3. Submittal manager.
4. Submittal classification.
5. Submittal register.
6. Construction progress schedules.
7. Proposed Products list.
8. Product data.
9. Shop drawings.
10. Samples.
11. Design data.
12. Test reports.
13. Certificates.
14. Manufacturer's instructions.
15. Manufacturer's field reports.
16. Preconstruction video.
17. Withholding of payment, Work stoppage, and delays.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 40 00 - Quality Requirements.
3. Section 01 60 00 - Product Requirements.
4. Section 01 70 00 – Execution and Closeout Requirements.

1.2 TYPES OF SUBMITTALS

A. The types of submittal items required to be provided are identified as, but not limited to, the following:
1. Schedules
2. Certifications
3. Job Mix Formulas
4. Mix Designs
5. Submittal Register
6. Quality Control Plan
7. Test reports
8. Construction Video in DVD format

1.3 SUBMITTAL PROCEDURES

A. Submittals are to be made as outlined under this section, the Technical Specifications, and as noted in the Contract Documents. The Engineer may request additional submittals beyond those detailed herein.

B. Transmit each submittal through the Contract and Project Management System Primavera. Refer to Appendix J.

C. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

D. Identify Project, Contractor, Subcontractor and supplier; pertinent Drawing and detail number, and specification section number, appropriate to submittal.

E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

F. Schedule submittals to expedite Project, and submit through the Contract and Project Management System. Refer to Appendix J

G. For each submittal for review, allow fifteen (15) days. Two (2) copies of the Engineer/City reviewed submittal shall be returned to the Contractor.

H. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of completed Work.

I. Allow space on submittals for Contractor and Engineer review stamps.

J. When revised for resubmission, identify changes made since previous submission.

K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

L. Submittals not requested will not be recognized or processed.

Contractor: _____

Project: _____

_____ Approved – No exceptions noted
_____ Approved with corrections as noted
on the submittal data or attachments
(Re-submittal not required)

Signed: _____
Contractor Submittal Manager

Date: _____

1.4 SUBMITTAL MANAGER

A. The Contractor shall designate in writing a competent and qualified individual to review and approve submittals for the Contractor and all Subcontractors. The submittal manager shall ensure all submittals meet Contract requirements prior to submission.

1.5 SUBMITTAL CLASSIFICATION

A. All submittals shall be designated as one of the following:
   1. "Information Only": Submittals required by the Technical Specifications to be submitted to the Engineer. Engineer's approval is not necessary.
   2. "Engineer Approval": Submittals required by the Technical Specifications to be submitted to the Engineer for approval.
   3. "City of Durham Approval": Submittals required by the Technical Specifications to be submitted to the City of Durham for approval.

1.6 SUBMITTAL REGISTER

A. Submit the initial submittal register and a letter designating the Contractor submittal manager within fifteen (15) days after date established in Notice to Proceed. The Engineer will review the submittal register and approve or request revisions within ten (10) days after receipt. After review, resubmit required revised data within ten (10) days.

B. A blank copy of the submittal register can be found in Appendix I.

C. The submittal register will be used to manage and control the flow of submittals and re-submittals for the Contract.

D. Instructions for Completing Submittal Register
   1. Complete a separate submittal register form for each individual section of the Technical Specifications.
   2. Column (a), Item No.: Number items sequentially (i.e. 1, 2, 3, etc.)
   3. Column (b), Transmittal No.: The transmittal number shall be formatted A-B.C, where:
      a. A is the Technical Specifications section number (i.e. 01 33 00).
      b. B is a sequential number for the section beginning with 1 (i.e. 1, 2, 3, etc.).
      c. C is a number identifying re-submittals that is sequential beginning with 1 (i.e. 1, 2, 3, etc.).
      d. Example Transmittal Numbers:
         1) 01 33 00-1: First submittal in section 01 33 00.
         2) 01 33 00-2: Second submittal in section 01 33 00.
         3) 01 33 00-1.1: First re-submittal of first submittal in section 01 33 00.
   4. Column (c), Submittal Classification: Enter an abbreviation for the classification of submittal from the following:
      a. Enter IO for "Information Only."

b. Enter EA for "Engineer Approval."
c. Enter CA for "City of Durham Approval."

5. See Paragraph 1.4 for definitions of the submittal classifications.
6. Column (d), Description: Enter a general description for the item.
7. Column (e), Drawing No. or Specification Section: Enter the Drawing number or Technical Specification paragraph number.
8. Column (f), Submittal Code: Enter an abbreviation for the type of submittal from the following:
   a. SCH: Schedule
   b. PRO: Product Data
   c. SD: Shop Drawing
   d. SAM: Sample
   e. DTA: Design Data
   f. RPT: Test Report
   g. CRT: Certificate
   h. INS: Manufacturer Instructions/Field Reports
   i. REC: Record Drawing
   j. VID: Preconstruction Video
9. Column (g), Construction Activity: Enter the activity number as shown on the construction schedule that requires the item to be submitted. Where a single item applies to multiple activities, enter the earliest activity number.
10. Column (h), Planned Activity Start Date: Enter the planned activity start date for the Work in which the item is included.
11. Column (i), Review Period (Days): Enter the minimum number of days allowed for review, typically fifteen (15) days.
12. Column (j), Requested Date for Approval: Enter the date the Contractor requests the review/approval for a submittal is needed in order to have materials ordered and delivered for the planned activity start date.
13. Column (k), Product Purchase Period: Enter the lead time necessary to procure Products. Coordinate with manufacturers and supplier for accurate time period assessment.
14. Column (l), Scheduled Date of Submittal: Enter the scheduled date for submission to the Engineer/City of Durham. Contractor shall coordinate this date with the Planned Activity Start Date, Column (h).
15. Column (m), Actual Date of Submittal: Enter the actual date of the submittal to the Engineer/City of Durham.
16. Column (n), Review/Approval Action Code: Enter the Engineer/City of Durham approval action code.
17. Column (o), Date of Review/Approval: Enter the date the Engineer/City of Durham review is completed.
18. Column (p), Comments, Remarks, Follow-up: Enter any comments or required actions.

1.7 CONSTRUCTION PROGRESS SCHEDULES (SCH)

A. The Contract and Project Management System will be used to transfer all submittals and distributions. Refer to Appendix J.

B. Submit initial schedules within fifteen (15) days after date established in Notice to Proceed. The Engineer will review the submitted schedule and approve or request revisions within ten (10) days after receipt. After review, resubmit required revised data within ten (10) days

C. Submit revised Progress Schedules with each Application for Payment.

D. The Contractor's scheduler shall have a minimum of five (5) years experience in scheduling construction work similar to the Project.

E. Distribute copies of reviewed schedules to Engineer, Resident Project Representative, Project Site file, Subcontractors, suppliers, and other concerned parties.

F. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

G. Submit computer generated horizontal bar chart with separate line for each section of Work, identifying first work day of each week. Schedule shall be in electronic format and prepared utilizing an industry accepted scheduling software. Schedule text font size shall be ten (10) or larger.

H. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.

I. Include Project title, Contract number, Contractor's name, submittal date, scheduler name and signature with the schedule.

J. Indicate estimated percentage of completion for each item of Work at each submission.

K. Submit separate schedule of submittal dates for shop drawings, Product data, and samples, and dates reviewed submittals will be required from Engineer.

L. Revisions To Schedules:
   1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
   2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
   3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

M. Failure to provide construction progress schedules may result in progress payments being withheld or suitable monies retained to protect the City's of Durham interest until such time as the schedule is provided.

N. Submit all schedules through Contract and Project Management System. Refer to Appendix J. specified in this section.

O. The review and acceptance by the Engineer of the Contractor's schedule shall in no way relieve the Contractor of the responsibility to complete the Work with the Contract Time, adjusted in accordance with the provisions of the Contract.

1.8 PROPOSED PRODUCTS LIST

A. Within fifteen (15) days after date of Notice to Proceed, submit list of major Products proposed for use, with name of manufacturer, trade name, and model number of each Product.

B. For Products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.9 PRODUCT DATA (PRO)

A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit number of copies Contractor requires, plus two (2) copies Engineer will retain.

C. Mark each copy to identify applicable Products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in.

1.10 SHOP DRAWINGS (SD)

A. Shop Drawings: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
   1. Include signed and sealed calculations to support design.
   2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
   3. Make revisions and provide additional information when required by authorities having jurisdiction.

C. Submit in form of one reproducible transparency.

D. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.11 SAMPLES (SAM)

A. Samples: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples For Selection as Specified in Product Sections:
   1. Submit to Engineer for aesthetic, color, or finish selection.
   2. Submit samples of finishes from full range of manufacturers' standard colors, in custom colors selected, textures, and patterns for Engineer selection.

C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample, with full Project information.

E. Submit number of samples specified in individual specification sections; Engineer will retain one (1) sample.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

G. Samples will not be used for testing purposes unless specifically stated in specification section.

H. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01 70 00 - Execution and Closeout Requirements.

1.12 DESIGN DATA (DTA)

A. Submit for Engineer's knowledge as contract administrator or for City of Durham.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 TEST REPORTS (RPT)

A. Submit for Engineer's knowledge as Contract administrator or for City of Durham.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.14 CERTIFICATES (CRT)

A. When specified in individual specification sections, submit certification by manufacturer, installation/application Subcontractor, or Contractor to Engineer, in quantities specified for Product Data.

B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

D. Any certificates provided to verify compliance with Contract requirements shall contain the following information:
1. Supplier/manufacturer/laboratory letterhead including address.
2. City of Durham Contract number and Site location.
3. Name and address of Contractor.
4. Date of certificate.
5. Product description.
6. Technical Specification reference to certificate requirement.
7. Specific Product test results or reports.
8. Title and signature of official authorized to certify on behalf of firm.

1.15 MANUFACTURER'S INSTRUCTIONS (INS)

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to City of Durham in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.16 MANUFACTURER'S FIELD REPORTS (INS)

A. Submit reports for Engineer's benefit as Contract administrator or for City of Durham.

B. Submit report in duplicate within five (5) days of observation to Engineer for information.

C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.17 RECORD DRAWINGS (REC)

A. Submit drawings for Engineer's benefit as Contract administrator or for City of Durham.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

C. Data indicating inappropriate or unacceptable Work may be subject to action by Engineer or City of Durham.

1.18 PRECONSTRUCTION VIDEO (VID)

A. The Contractor will be required to videotape each city street project along the entire route of each project utilizing the DVD format.

B. The original copy of the DVD shall be given to the Engineer prior to beginning construction activities.

C. The DVD shall clearly identify all existing above ground site conditions prior to starting work.

D. An index of the DVD shall be provided that identifies the beginning and end of each area. The Contractor will need to walk while filming the area and provide an audible commentary.

1.19 WITHHOLDING OF PAYMENT, WORK STOPPAGE, AND DELAYS

A. Failure to provide required submittals and information will result in progress payments being withheld or suitable monies being retained to protect the City of Durham's interest until such time as the required information is submitted per the Technical Specifications. Payment for materials incorporated into the Work will not be made until required submittal information has been approved.

B. Work on a specific item shall not be allowed to proceed without approved submittals for that item except at the risk of the Contractor. If Work is done with material that is not approved and subsequently does not gain approval, the Contractor shall remove and replace the material at no additional cost to the City of Durham.

C. Failure of the Contractor to provide adequate time for review and approval in the schedule for submittals shall not constitute a delay caused by the Engineer or City of Durham.

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SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes
1. Quality control and control of installation.
2. Tolerances.
3. References.
4. Labeling.
5. Traffic Controls and Signalization and Paving Markings
6. Testing and inspection services.
7. Manufacturers' field services.
8. Contractor Quality Control

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 70 00 – Execution and Closeout Requirements.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, Site conditions, and workmanship, to produce Work of specified quality.

B. Comply with the Contractor Quality Control Plan (See Article 1.7), Contract Specifications, City of Durham Specifications, and North Carolina Department of Transportation Standards, including each step in sequence.

C. Comply with manufacturers' instructions, including each step in sequence.

D. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

E. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

F. Perform Work by persons qualified to produce required and specified quality.

G. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

1.3 TOLERANCES

A. Monitor utility and placement tolerance control of manhole and valve box adjustments and asphalt to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with specified tolerances as spelled out in the Contract, the City of Durham Specifications and North Carolina Department of Transportation Standards. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust manhole and valve boxes to appropriate elevations to allow 1.5” of asphalt overlay before securing in place.

D. Production of Asphalt Mix shall comply with specified tolerances as spelled out in the Contract, the City of Durham Specifications and North Carolina Department of Transportation Standards.

E. The Asphalt laydown operation shall comply with specified tolerances as spelled out in the Contract, the City of Durham Specifications and North Carolina Department of Transportation Standards.

1.4 REFERENCES

A. All work is to be performed in accordance with the Contract, City of Durham Street Construction and Water & Sewer Specifications and the North Carolina Department of Transportation Standard Specifications. Copies of Contract Specifications, City of Durham Street Construction and Water & Sewer Specifications may be downloaded at:

B. http://www.durhamnc.gov/departments/works/engineering.cfm

C. All Work shall conform to the following standards per Section 00 31 00 – Available Project Information:
   1. City of Durham Standards - City of Durham Street Construction Specifications and Specifications, and Water and Sewer Construction Specifications Paragraph 1.7.
   2. North Carolina Department of Transportation (NCDOT) Standard Specifications, Paragraph 1.8.
   3. North Carolina Department of Environment and Natural Resources (NCDENR) Standards, Paragraph 1.9.

D. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only and refer to requirements for use of laboratory services.
   1. North Carolina Department of Transportation’s HMA/QMS Manual. It may be downloaded at: http://www.ncdot.org/doh/operations/dpchiefeng/constructionunit/paveconst/AsphaltMgmt/
   2. American Association of State Highway and Transportation Officials (AASHTO)
   3. American Society For Testing and Materials (ASTM)

4. ASTM D 3740: Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
5. ASTM E 329: Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

E. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.

F. Obtain copies of standards where required by Product specification sections.

G. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

H. Neither contractual relationships, duties, responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 LABELING

A. Attach label from agency approved by authority having jurisdiction for Products, assemblies, and systems required to be labeled by the Technical Specifications or applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
1. Model number.
2. Serial number.
3. Performance characteristics.

1.6 TRAFFIC CONTROLS AND SIGNALIZATION AND PAVEMENT MARKINGS

A. Contact City of Durham 48 hours in advance of work if traffic control devices to include signals, loops and/or pavement markings will be affected by work.

B. The points of contact are City of Durham Traffic Engineer, Phil Loziuk (560-4366, Ext. 302) and /or Street Superintendent, Michael Balzarano (560-4312). The advance notice will allow for temporary traffic controls or markings to be implemented.

C. The Contractor shall provide assistance to the City of Durham Traffic Engineer to identify the control wiring and to provide reasonable means to preserve and protect the existing wiring and controls where feasible. The Contractor is not responsible for providing new control wiring in the new pavement for those intersections and traffic signalization devices that may be affected by this contract.

D. The advance notification on pavement markings will allow for identification of existing pavement markings prior to being covered by the resurfacing work. The Contractor is not responsible for remarking or re-stripping the streets. The Contractor shall notify the City of Durham Street Superintendent immediately upon completion of the resurfacing operation for a particular street so the remarking and re-stripping can be scheduled. The remarking and re-stripping operation will be performed by the City of Durham forces.

1.7 TESTING AND INSPECTION SERVICES

A. The Contractor shall have employees on staff or pay for the services of an independent testing agency or laboratory, acceptable to City of Durham, North Carolina Department of Transportation and the Engineer, to perform Quality Control specified testing described in the General Conditions, Section C-700, Paragraph 13.03.

1. Prior to start of Work, submit documentation that the testing laboratory has been certified by North Carolina Department of Transportation, address, and telephone number, and names of full time personnel are currently certified QMS Level I & II Plant Technicians and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

B. The Contractor shall develop and implement a Contractor QC system in accordance with North Carolina Department of Transportation's HMA/QMS program, to ensure the work is performed per contract requirements.

1. Prior to start of Work, submit documentation that the testing laboratory has been certified by North Carolina Department of Transportation, address, and telephone number, and names of full time personnel are currently certified QMS Level I & II Plant Technicians and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

C. The Engineer will hire and pay for an Independent Firm to perform QA tests, inspections and other services in accordance with North Carolina Department of Transportation's HMA/QMS program, and as required by Engineer and the City of Durham.

1. Laboratory: The testing laboratory shall be certified by North Carolina Department of Transportation for QA testing.
2. Laboratory Staff: Maintain full time currently certified QMS Level I & II Plant Technicians and a registered engineer on staff to review services.
3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

D. Testing, inspections and source QC may occur on or off Project Site. Perform off-site testing as required by the Independent Firm (Representing the Department) or City of Durham.

E. Reports will be submitted by the Contractor to the Independent Firm (Representing the Department) and authority having jurisdiction, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
   1. Submit final report indicating correction of Work previously reported as non-compliant.

F. Cooperate with the Independent Firm (Representing the Department); furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
   1. Notify Engineer and Independent Firm (Representing the Department) twenty-four (24) hours prior to expected time for operations requiring services.

G. QC Testing performed by Contractor's employees or employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

H. QC re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by Contractor's employees or employment of testing agency or laboratory on instructions by Independent Firm (Representing the Department). No payment will be made for re-testing or re-inspection because it will be considered incidental to the various items in the Contract.

I. QA Testing by Independent Firm (Representing the Department) Responsibilities:
   1. Test samples of mixes submitted by Contractor.
   2. Provide qualified personnel at Site. Cooperate with the City of Durham and Contractor in performance of services.
   3. Perform specified sampling and testing of Products in accordance with specified standards.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   5. Promptly notify City of Durham and Contractor of observed irregularities or non-conformance of Work or Products.
   6. Perform additional tests required by City of Durham.
   7. Attend preconstruction meetings and conduct progress meetings.

J. QC testing performed by Contractor's employees or employment of testing agency or laboratory: After each test, promptly submit two copies of report to Independent Firm (Representing the Department), Contractor, and authority having jurisdiction. When requested by Independent Firm (Representing the Department) or the City of Durham, provide interpretation of test results. Include the following:
   1. Date issued.
   2. Project title and number.
   3. Name of inspector.
   4. Date and time of sampling or inspection.
   5. Identification of Product and specifications section.
   6. Location in Project.
   7. Type of inspection or test.
   8. Date of test.
   9. Results of tests.

10. Conformance with Contract Documents.

K. Independent Firm (Representing the Department) Authority:
1. Independent Firm (Representing the Department) may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Independent Firm (Representing the Department) has the authority to approve or accept any portion of the Work.
3. Independent Firm (Representing the Department) may not assume duties of Contractor.
4. Independent Firm (Representing the Department) has authority to stop the Work.

1.8 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Engineer thirty (30) days in advance of required observations. Observer subject to approval of Engineer.

C. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, MANUFACTURERS' FIELD REPORTS article.

1.9 CONTRACTOR’S QC REQUIREMENTS

A. The Contractor shall develop and implement a Contractor quality Control System in accordance with North Carolina Department of Transportation’s HMA/QMS program. The quality control system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The Contractor’s project superintendent, quality control manager or other designated individual will be held responsible for the quality of work on the job.

B. Quality Control Plan: The Contractor shall furnish for review by the City, not later than fifteen (15) days after receipt of Notice to Proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of this specification. The plan shall identify personnel, control procedures, instructions, test records, and forms to be used. The plan shall be in accordance with North Carolina Department of Transportation’s HMA/QMS program. Construction will be permitted to begin only after acceptance of the QC Plan (including approval of the QC Manager) or acceptance of an interim plan applicable to the particular features of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a QC Plan or another interim plan containing the additional features of work to be started.

C. Content of the QC Plan: The QC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by Subcontractors, suppliers, and purchasing agents:

1. A description of the quality control organization, including a chart showing lines of authority and responsibilities including authority to stop work which does not comply with the subcontract.
2. The name, professional qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a QC function.
3. Testing and inspection plan that corresponds to the testing and inspection requirements of the specifications and any other applicable codes, requirements, or standards.
4. The following procedures that are applicable to the work:
   a. Shop inspection and testing of fabricated equipment.
   b. Evaluation and pre-qualification of vendor supplied material and equipment.
   c. Evaluation and pre-qualification of all Subcontractors.
   d. Receiving, inspection, and storage of materials.
   e. In process testing and inspection.
   f. Final testing and inspection.
   g. Calibration of inspection, measuring, and testing equipment.
   h. Control of non-conforming work.
   i. Document control and reporting.

D. Acceptance of Plan: Acceptance of the Contractor's plan and quality control manager is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during construction. The City reserves the right to require the Contractor to make changes in its QC Plan and/or personnel.

1. Notification of Changes: After acceptance of the QC Plan, the Contractor shall notify the City in writing of any proposed changes prior to implementation. Proposed changes are subject to acceptance by the City.

E. Coordination Meeting: After the pre-construction conference and prior to the start of construction, the Contractor shall meet with the, Independent Firm (Representing the Department) and the City to discuss the Contractor's quality control system. The final QC Plan shall be submitted for review a minimum of five calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the QC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of the Contractor's management and Independent Firm (Representing the Department) control with quality assurance. Minutes of the meeting shall be prepared by the City or Independent Firm (Representing the Department) and signed by both the Contractor and the City. The minutes shall become part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the QC system or procedures that may require corrective action by the Contractor.

F. Quality Control Organization: The requirements for the QC organization are a QC System Manager who shall be at the site at all times during progress of work and with complete authority from the Contractor to take any action necessary to ensure compliance with the contract. This person shall have a minimum of ten years experience on work of the complexity and magnitude of the type of work similar to this project, and must be employed by the Contractor. The QC System Manager may have other assigned duties; however, he/she will be responsible for all matters concerning contractor quality control. The QC System Manager shall be subject to acceptance by City and approval is conditioned upon satisfactory performance.

G. Control and Inspection of Work: Contractor Quality Control is the means by which the Contractor ensures the construction, to include that of Subcontractors and suppliers, complies with requirements of the contract. At least three phases of control shall be conducted by the Contractor and the QC System Manager for each feature of work as follows.

H. Pre-work and Preparation Phase: This phase shall be performed prior to beginning work on each feature of work and shall include:

1. PUBLIC ADVISORY NOTICE - Prior to the prosecution of work, the Contractor shall provide a seven calendar day advance written notice to all individuals, homeowners, business owners, utilities, and others along the line of construction who may be affected by any aspect of the work that is contemplated. Such notice may be delivered by door contact, door knob hanger, or letter and shall briefly describe the nature and estimated timetable of the work and shall provide any additional information or instructions that may be desirable or necessary. The notice shall also include the name and telephone number of the contact person for further information related to the project. A proposed draft of the written notice shall be submitted by the Contractor to the Engineer for his approval prior to the initiation of any work.
2. A review of each paragraph of applicable specifications.
3. A review of the contract drawings and sketches.
4. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
5. Review of provisions that have been made to provide required control inspection and testing.
6. Examination of the work area to assure that all required preliminary work has been completed and complies with the contract. Prior to resurfacing, Department and/or Independent Firm (Acting on behalf of the Department) have to accept repair and/or prep work.
7. A physical examination of required materials, equipment, and sample work to assure they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
8. A review of the appropriate activity hazards associated with the work to assure safety requirements are met.
9. Discuss traffic control with Independent Firm (Representing the Department), and the City. Notification for traffic signals, signal loops and/or pavement markings if affected by work. (See Article 1.6 above)

10. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
11. The City shall be notified in writing at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the Independent Firm (Representing the Department), QA personnel (as applicable), QC System Manager, project superintendent, and the foreman responsible for the work. The results of the preparatory phase actions shall be documented by the Independent Firm (Representing the Department) Lead Field Inspector on the daily report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet subcontract specifications.

I. Initial Phase: This phase shall be accomplished at the beginning of a definable feature of work. This phase is used to ensure the specifications are being met and to establish procedures for quality and workmanship. The following shall be accomplished:
1. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting as necessary.
2. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
3. Establish level of workmanship and verify that it meets acceptable workmanship standards. Compare with required sample panels as appropriate.
4. Resolve all differences.
5. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
6. The City shall be notified at least 24 hours in advance of beginning the initial phase. Separate notes or minutes of this phase shall be prepared by the QC System Manager and attached to the daily report. Exact location of initial phase work samples shall be indicated for future reference and comparison with follow-up phases.
7. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

J. Follow-up Phase: Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with subcontract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the QC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work, which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work. Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable QC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

K. QC Testing and Inspection:
1. QC Inspection and Testing: The Contractor shall have employees on staff or pay an independent test agency to perform specified quality control services when so indicated in the technical specifications. The Contractor may utilize their own technicians and equipment to perform the specified quality control services

provided their plans, personnel, equipment and procedures are in compliance with the required technical specifications and in accordance with North Carolina Department of Transportation's HMA/QMS program. Contractor facilities shall also comply with the requirements below. Costs for all such testing services shall be included in the contract price bid and no separate payment shall be provided.

2. Qualification for QC Inspection and Testing: Each asphalt plant shall have at a minimum a Level I Technician, with a Level II Technician readily available at the plant at all times when producing asphalt mix for the project. They shall be currently certified by North Carolina Department of Transportation's HMA/QMS program. Each of the Contractor's paving crews shall have at least one certified Roadway Technician and a Nuclear Density Gauge Operator at all times during the laydown operation. They shall be currently certified by North Carolina Department of Transportation's HMA/QMS program. The City reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.
3. Reporting Requirements: The Contractor's quality control manager shall submit certified written reports of each inspection, test, or similar service to the Independent Firm (Representing the Department), who will forward the report to the City. The written reports shall include, but not be limited to:
   a. Date of issue.
   b. Project title and number.
   c. Name, address, and telephone number of testing agency.
   d. Dates and locations of samples and test or inspections.
   e. Names of individuals making the inspection or test.
   f. Designation of the work or test method.
   g. Identification of product and Specification Section.
   h. Complete inspection or test data.
   i. Test results and an interpretation of test results.
   j. Ambient conditions at the time of sample taking and testing.
   k. Comments or professional opinion as to whether inspected or tested work complies with contract document requirements and/or applicable codes.
   l. Name and signature of laboratory inspector.
   m. Recommendations on retesting.
4. General Testing Procedures: The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product that conforms to contract requirements. Upon request, the Contractor shall furnish to the Independent Firm (Representing the Department) duplicate samples of test specimens for possible testing. Testing includes operation and/or acceptance tests when specified. The Contractor shall perform the following activities and record and provide the following data:
   a. Verify that testing procedures comply with contract requirements.
   b. Verify that facilities and testing equipment are available and comply with testing standards.
   c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing, will be recorded on the QC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test will be given. If approved by the City, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility will be provided directly to the Independent Firm (Representing the Department). Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this subcontract.

L. Completion Inspection

1. Pre-Final Inspection: At the completion of all work or any increment thereof established by a completion time or stated elsewhere in the specifications, the Independent Firm (Representing the Department) shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the QA documentation, as required by sub-paragraph K, Documentation, below, and shall include the estimated date by which deficiencies will be corrected. Once this is accomplished, the Contractor shall notify the Independent Firm (Representing the Department) in writing that the work is complete and is ready for "Pre-final" inspection. The Independent Firm (Representing the Department) will perform this inspection to verify the work is complete and acceptable. A City "Pre-final Punch List" will be developed by the Independent Firm (Representing the Department), because of this inspection. The QC System Manager shall ensure that all items on this list have been corrected and so notify the Independent Firm (Representing the Department) so that a "Final" inspection can be scheduled. Any items noted on the "Final" inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph will be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

2. Final Acceptance Inspection: The Contractor's Quality Control Inspection personnel, its superintendent or other primary management person, Independent Firm (Representing the Department) and a City representative will be in attendance at this inspection. Additional personnel may also be in attendance. The final acceptance inspection will be formally scheduled by the Independent Firm (Representing the Department) based on notice from the Contractor. This notice will be given to the Independent Firm (Representing the Department) at least 14 days prior to the final acceptance inspection and must include the Contractor's assurance that all specific items previously identified to the Contractor as being acceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

M. Documentation: The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. The following quality assurance records are required to be prepared and maintained by the Contractor as applicable:
   1. Contractor Quality Control Plan.
   2. Coordination Meeting Minutes.
   3. Submittal Register.
   4. Material Test Reports.
   5. Daily and Phase Inspection Reports.
   6. Material Deficiency Reports.
   7. Corrective Action Reports.
   8. Calibration Reports.
   9. Qualification Reports.

N. Notification of Noncompliance: The Independent Firm (Representing the Department) will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Independent Firm (Representing the Department) may issue an order stopping all or part of the work until satisfactory corrective action has been taken. A Corrective Action Report (CAR) will be completed upon correction of non-compliant work. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

PART 2 EXECUTION

2.1 EXAMINATION

A. Verify existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

2.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

1.1 SUMMARY

A. Section Includes:
   1. Temporary Utilities:
      a. Temporary sanitary facilities.
   2. Construction Work Zone:
      a. Public Advisory
      b. Towing Vehicles in Work Zone
      c. Vehicular access.
      d. Progress cleaning and waste removal.
      e. Traffic regulation.
   3. Temporary Controls:
      a. Work Zone Signs.
      b. Barriers.
      c. Security.
      d. Dust control.
      e. Erosion and sediment control.
      f. Noise control.
      g. Pollution control.
   4. Removal of utilities, facilities, and controls.

B. Related Sections:
   1. Section 32 12 16 - Asphalt Paving.
   2. Section 32 13 13 – Concrete Paving.
   3. Section 32 92 19 - Seeding and Mulching.

1.2 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide facilities at time of project mobilization.

1.3 TRAFFIC CONTROL

A. Maintain traffic through work zones in accordance with Specifications included in this Project Manual, Plans, the MUTCD, and NCDOT requirements.
   1. Basis of Payment: By lump sum.
   2. Basis of Payment: Traffic Control (LS) will be measured and paid for as a lump sum over the life of the project where traffic flow has been altered by shifting traffic by way of cones, barricades, etc., or closing a lane of travel, or using flaggers for more than two hours.

1.4 PUBLIC ADVISORY

A. Prior to the prosecution of work, the Contractor shall provide a advance written notice of seven (7) calendar days to all individuals, homeowners, business owners, utilities, and others along the line of construction who may be affected by any aspect of the work that is contemplated. Such notice may be delivered by door contact, door knob hanger, or letter and shall briefly describe the nature and estimated timetable of the work and shall provide any additional information or instructions that may be desirable or necessary. The notice shall also include the name and telephone number of the contact person for further information related to the project and state that any vehicle that is not removed from the construction area within the ten-day time frame will be towed away by the Contractor or the City of Durham. A proposed draft of the written notice shall be submitted by the Contractor to the Engineer for his approval prior to the initiation on any work.

1.5 TOWING VEHICLES IN WORK ZONE

A. Any vehicle that has not been removed from the area of construction within the ten-day time limit as stated in the Public Advisory Notice may be towed away. The cost of this towing shall be paid for under miscellaneous cost for the actual cost of the towing. The invoices from the towing company shall be submitted for payment.

1.6 VEHICULAR ACCESS

A. Permanent Pavements And Parking Facilities:
   1. Prior to Substantial Completion, bases for permanent roads and parking areas may be used for construction traffic.
   2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.

B. Maintenance:
   1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
   2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

C. Removal, Repair:
   1. Remove temporary materials and construction when permanent paving is usable.
   2. Repair existing facilities damaged by use, to original specified condition.

D. Mud from Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.7 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

B. Collect and remove waste materials, debris, and rubbish from site daily and dispose off-site.

1.8 TRAFFIC REGULATION

A. All work related to traffic control and maintenance of traffic shall be paid for as a lump sum for this project.

B. Properly ballasted cones may be used instead of drums for lane closures during daylight hours. The stationary work zone shall be a maximum of 3 miles in length at any given time unless otherwise directed by the Engineer.

C. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

D. A "pilot vehicle" operation may be used in conjunction with flaggers and the appropriate pilot vehicle warning signing as directed by the Engineer. During periods of construction inactivity, return the traffic pattern to the existing alignment and remove temporary construction signs.

E. When personnel and/or equipment are working within a lane of travel of an undivided or divided facility, close the lane according to the traffic control plans, roadway standard drawings or as directed by the Engineer. Conduct the work so that all personnel and/or equipment remain within the closed travel lane. Do not work simultaneously, on both sides of an open travel way, within the same location, on a two-lane, two-way road.

F. The maximum acceptable difference in elevation between open lanes of travel is 1.5 inches. The maximum acceptable edge of pavement drop-off is 2 inches. Backfill at a 6:1 slope up to the edge and elevation of existing pavement in areas adjacent to an open travel lane if the drop-off exceeds 2 inches at no expense to the Department.

G. Notify the Engineer forty eight (48) hours before milling, patching and/or resurfacing if the work will interfere with existing traffic control devices such as signal loops and pavement markings. Loops may need to be placed in milled surface before resurfacing occurs. Markings may need to be identified for re-stripping after resurfacing is complete. Coordinate all affected traffic control devices with the City Traffic Engineer. (See Section 01 40 00 TRAFFIC CONTROLS AND SIGNALIZATION AND PAVEMENT STRIPPING for contact information)

H. The following options are acceptable during Resurfacing/milling operations on two-way, two-lane facilities when the entire roadway or entire lane is to be milled:
   1. Mill a single lane and pave back by the end of each work day
   2. Mill the entire width of roadway and pave back within 72 hours

I. Remove existing pavement markers in preparation for paving. Repair any pavement damage due to existing pavement marker removal before resurfacing. Dispose of existing pavement markers as directed by the Engineer

J. Signs, Signals, And Devices:

1. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by the City.
2. Automatic Traffic Control Signals: As approved by the City.
3. Traffic Cones and Drums, Flares and Lights: As approved by the City.
4. Flagperson Equipment: As required by the City.

K. Flares and Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

L. Traffic Signs And Signals:
1. Provide signs at approaches to site and on site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
2. Relocate as Work progresses, to maintain effective traffic control.

M. Removal:
1. Remove equipment and devices when no longer required at substantial completion.
2. Repair damage caused by installation.
3. Remove post settings to depth of 2 feet.

1.9 WORK ZONE SIGNS

A. All work related to signage and maintenance of signage shall be incidental to the project.

B. Rigid sign retro reflective sheeting requirements for Types VII, VIII and IX (prismatic) fluorescent are described in Tables 1089-A, 1089-B and 1089-C. Cover the entire sign face of the sign substrate with NCDOT approved Type VII, VIII or IX (prismatic) fluorescent orange reflective sheeting. Apply the reflective sheeting in a workmanlike manner so that there are no bubbles or wrinkles in the material.

C. Work Zones Signs (Stationary) - Use Type VII, VIII or IX (prismatic) fluorescent orange retro reflective sheeting that meets the following reflective requirements in Tables 1089-A, 1089-B or 1089-C respectively. Use approved composite or aluminum for sign backing. Signs and sign supports must meet or exceed NCHRP 350 requirements for Breakaway Devices.

D. Work Zones Signs (Barricade Mounted) - Use approved composite or roll-up signs for barricade mounted sign substrates. Approved composite barricade mounted warning signs (black on orange) must be Type VII, VIII or IX sheeting which meet the retro reflective requirements of Table 1089-A, 1089-B or 1089-C. Roll-up mounted barricade warning signs (black on orange) must meet the retro reflective requirements in Table 1089-D. Sign and barricade assembly must meet or exceed the requirements of NCHRP 350 for Work Zone Category II Devices.

E. Work Zones Signs (Portable) - Use approved composite or roll-up sign substrates on portable sign stands.
1. Composite - Use Type VII, VIII or IX (prismatic) fluorescent orange retro reflective sheeting that meets the following reflective requirements in Tables

1089-A, 1089-B or 1089-C. Signs and sign supports must meet or exceed NCHRP 350 requirements for Breakaway Devices.

2. Roll-up Signs - Use fluorescent orange retro reflective roll-up signs that meet the following reflective requirements:
   a. Use roll up signs that have a minimum 3/16” x 1 1/4” horizontal rib and 38” x 1 1/4” vertical rib and has been crash test to meet NCHRP 350 requirements and Traffic Control qualified by the Work Zone Traffic Control Unit. Roll-up sign retro reflective requirements are described in Table 1089-D

Table 1089-A
Minimum Coefficient of Retro reflection R_A for
TYPE VII Fluorescent Orange Sheeting
(Candelas per lux per square meter)

Observation Angle	Entrance Angle	
	-4°	30°
0.1°	300	170
0.2°	230	130
0.5°	72	41

Table 1089-B
Minimum Coefficient of Retro reflection R_A for
TYPE VIII Fluorescent Orange Sheeting
(Candelas per lux per square meter)

Observation Angle	Entrance Angle	
	-4°	30°
0.1°	300	135
0.2°	210	95
0.5°	75	35

Table 1089-C
Minimum Coefficient of Retro reflection R_A for
TYPE IX Fluorescent Orange Sheeting
(Candelas per lux per square meter)

Observation Angle	Entrance Angle	
	-4°	30°
0.1°	200	110
0.2°	115	65
0.5°	72	41
1.0°	24	14

Table 1089-D
Minimum Coefficient of Retro reflection R_A for Fluorescent Orange Roll-Up Signs
(Candelas per lux per square meter)

Observation Angle	Entrance Angle	
	-4°	30°
0.1°	300	120
0.2°	200	80
0.5°	90	34

1.10 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction area and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide protection for plants designated to remain. Replace damaged plants.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.11 SECURITY

A. Security Program:
1. Protect existing premises and from vandalism.
2. Maintain program throughout construction period until directed by the Engineer.

1.12 DUST CONTROL

A. Execute Work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.13 EROSION AND SEDIMENT CONTROL

A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

B. Minimize surface area of bare soil exposed at one time.

C. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

1.14 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.15 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

B. Comply with pollution and environmental control requirements of the City of Durham and the NC Department of Environment and Natural Resources.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, and materials, prior to Final Application for Payment inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing and permanent facilities used during construction to original condition.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

1.1 SUMMARY

A. Section Includes:
1. Products.
2. Product delivery requirements.
3. Product storage and handling requirements.
4. Product options.
5. Product substitution procedures.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Engineer will consider requests for Substitutions only within 10 days after date established in Notice to Proceed.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that Contractor:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for Substitution as for specified product.
   3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension which may subsequently become apparent.
   5. Will reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

F. Substitution Submittal Procedure:
   1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
   2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
   3. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

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SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

1.1 SUMMARY

A. Section Includes:
1. Closeout procedures.
2. Final cleaning.
3. Protecting installed construction.
4. Project record documents.
5. Operation and maintenance data.
6. Manual for materials and finishes.
7. Product warranties and product bonds.
8. Maintenance service.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.

1.2 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's review.

B. Provide submittals to Engineer required by authorities having jurisdiction.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean site; sweep paved areas, rake clean landscaped surfaces.

C. Remove waste and surplus materials, rubbish, and construction facilities from site.

D. Execute start-up under supervision of applicable manufacturer's representative Contractors' personnel in accordance with manufacturers' instructions. TESTING, ADJUSTING AND BALANCING

E. Owner will appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing.

F. Reports will be submitted by independent firm to Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

1.4 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

D. Prohibit traffic from landscaped areas.

1.5 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings, Product Data, and Samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured depths of foundations in relation to finish first main floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

G. Submit documents to Engineer with claim for final Application for Payment.

1.6 OPERATION AND MAINTENANCE DATA

A. Submit data through the Project Management System, as referenced in Appendix J

B. Prepare cover with title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter, when multiple volumes are required.

C. Internally subdivide contents with permanent page dividers, logically organized as described below; with tab titling clearly marked.

D. Drawings: Provide through the Project Management System, as referenced in Appendix J

E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
2. Part 2: Operation and maintenance instructions arranged by system process flow and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
   a. Significant design criteria.
   b. List of equipment.
   c. Parts list for each component.
   d. Operating instructions.
   e. Maintenance instructions for equipment and systems.
   f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
3. Part 3: Project documents and certificates, including the following:
   a. Shop drawings and product data.
   b. Air and water balance reports.
   c. Certificates.
   d. Originals Photocopies of warranties and bonds.

1.7 MANUAL FOR MATERIALS AND FINISHES

A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

D. Submit two sets of revised final volumes in final form within 10 days after final inspection.

E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.

F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

H. Additional Requirements: As specified in individual product specification sections.

I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.8 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Include Table of Contents and assemble in three D side ring binder with durable plastic cloth cover.

F. Submit prior to final Application for Payment.

G. Time Of Submittals:
1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

END OF SECTION

SECTION 30 10 00

CONSTRUCTION SURVEYING AND STAKEOUT

GENERAL

1.1 SUMMARY

A. The WORK under this Section includes providing all labor, materials, tools, and equipment necessary to perform all surveying and staking necessary for the completion of the Contract in conformance with the Drawings and Specifications. The WORK shall conform to standard engineering and surveying practices in the City of Durham and State of North Carolina specifically NCGS 47-30 NCGS 55B and NCGS 89C. The Contractor shall furnish all stakes, templates, straightedges, and other devices necessary for establishing, checking and maintaining the required points, lines and grades.

B. The Contractor shall assume full responsibility for the layout and subsequent stakeout based on the information provided on the construction drawings.

C. The printed drawings contain all of the necessary survey information and shall take precedence. The City will provide electronic drawing files in AutoCad format as well as data files of control points and pertinent information in the drawings. These files and data are provided as a resource to enable the project to proceed efficiently; however, the City does warrant the accuracy of the drawing files or data.

1. In the case of a discrepancy, or an error or omission between the printed drawings and the computer files, the Contractor shall notify the City staff verbally and in writing (e-mail is acceptable), and the City staff shall advise the Contractor on how to proceed.
2. The City shall neither accept any claims nor financial responsibility for any discrepancies, or errors or omissions.
3. The City will not be responsible for any damages or claims resulting from work stoppages due to any discrepancies, or errors or omissions.

D. The WORK shall include staking, referencing and other actions such as surveying and engineering computations.

E. The WORK shall include any actions as may be required to preserve and restore land monuments which are situated within the Project areas of the Contract, and to re-establish monuments, references and survey control as shown on the Drawings.

F. In the event that the Contractor does not replace the survey monuments and property corners disturbed by the Contractor’s operations, the City may, after first notifying the Contractor, replace the monuments in question. The cost of such replacements shall be deducted from payments to the Contractor

G. The WORK shall include the submittal of calculations, field notes and drawings prior to construction as defined in these specifications.

H. The WORK shall include the submittal of close-out documents consisting of as-built drawings and data in both electronic and printed format as defined in these specifications.

I. All WORK shall be performed under the direction of, and in the responsible charge of, a North Carolina Professional Land Surveyor or a North Carolina Professional Engineer as appropriate.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Unless otherwise negotiated, construction surveying and stakeout services shall be paid as a lump sum for the entire project.
   1. The City will pay 75% of the lump sum fee divided by the number of streets where new sidewalks are constructed.
   2. The City will pay the remaining 25% upon receipt of acceptable closeout submittals.

B. Alternately, the contractor can propose a different payment schedule for surveying and stakeout services for consideration by the City. The City shall have the sole discretion to accept or reject any proposed alternate pay schedules. In any event, the City will retain 25% of the total fee, until the close-out documents are accepted by the City Staff.

1.3 REFERENCES

A. Drawings and general provisions of the Contract, including General Supplementary Conditions apply to this specification.

B. Electronic project data files provided by the City of Durham. In the case of a discrepancy between the Drawings and General Provisions described in a) above, and the electronic project data files the information in the Drawings and General Provisions will prevail. In either case, the City will be the sole judge in the interpretation of the discrepancy, and is not responsible for the content or use of the electronic data files by the Contractor.

C. The City of Durham Public Works “Reference Guide for Development”. The Reference Guide is available on the City’s web site.

1.4 DEFINITIONS

For the purposes of this specification, the following definitions refer to terminology used by the Engineers, Surveyors and Inspectors of the City of Durham.

A. GENERAL
   1. **Alignment Data**: The path of a design object such as a street centerline, or a sewer outfall, generally described both horizontally and vertically by line work annotated with distances and bearings. Often there will be an table on the drawing, called a Table of PI’s (points of intersection), that has the coordinates and curve data used to describe an alignment in the project
   2. **NAD83:** North American Datum 1983, CORS Adjustment
   3. **S.I.P.:** Railroad spike in telephone or power pole.

4. **Design Engineer:** The person or firm responsible for the design of a project
5. **N.C.G.S.:** North Carolina Geodetic Survey
6. **TN** or **Trav. Nail** (Traverse Nail): Nail or hub with tack used in a traverse for horizontal control, and sometimes ~~but not always~~ vertical control.
7. **TBM:** ~~Topographic~~ Temporary bench mark
8. **VBM:** Vertical bench mark
9. **Offset Alignment:** Perpendicular distance from an alignment. Left is negative and right is positive.
10. **Offset Stakes:** A stake that is offset from another stake a distance that is written on the offset stake. Offset stakes always occur in pairs that are usually 10-20 feet apart (usually in 5' intervals) so that the original stake (that was set by a survey instrument) can be re-established in the field with a tape measure. Offset stakes are almost always placed with a tape measure. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. All three stakes, the original plus the two offsets, are co-linear. Each offset stake has a description which is written on it, the description includes a distance and a reference to purpose of the original stake. The description is always written on the wide flat face of the stake, and the description on the offset stakes always points in the direction of the original stake. The first offset stake may be 15 feet from the stake set by survey, and, as an example if it were referencing a water meter to be installed, it would have written on it "15' OFF Water Meter". The second stake may be 25 feet from the stake set by survey, and if it were referencing the water meter to be installed, it would have written on it "25' OFF Water Meter". Then if the original stake set by survey got knocked out or missing, it could be replaced using a tape measure by pulling a straight line between the two offsets and measuring 15 feet from the first stake.
11. **Hub:** Usually a 2"x2" short wooden stake driven flush with the ground and suitable for holding a tack for horizontal and stable enough for vertical control
12. **Monument:** Survey marker made of concrete or stone and holding a metallic disk, rebar or permanent nail
13. **E.I.P.:** Existing Iron Pin or Pipe normally representing a property corner.
14. **Computed Point:** A point shown on a plat, map or design drawing which only exists on paper and has not been set or found in the field.
15. **Local Coordinate System:** An assumed coordinate system only intended to be used for the project it is referenced.
16. **Local Grid Coordinate System:** For Durham the local grid system has been derived from the NC State Plane Grid by choosing a point on the local project to localize about and using the combined scale factor scale the grid distances/coordinates from the sea level datum to the local surface elevation of the project.
17. **State Plane Coordinate System:** Defined by the North Carolina Geodetic Survey as NAD83/CORS Adjustment.
18. ~~**Shop Drawing Submittal:**~~
19. **ASCII :** Text file read or created by a simple text editor. (American Standard Code for Information Interchange)
20. **GIS :** Geographic Information System.
21. **CSV File Format:** Comma Separated Value (delimited) ASCII file

22. **CD Computer Media**: A small optical disk on which data such as music, text, or graphic images is digitally encoded.
23. **DVD Computer Media:** A high-density compact disk for storing large amounts of data, especially high-resolution audio-visual material.
24. **Stormwater Structure:** Any entrance or exist for a closed conduit piped system designed to collect and transport surface water.
25. **PDF : (**Portable Document Format) A universal computer file format that preserves all the fonts, formatting, colors, and graphics of any source document, regardless of the application and platform used to create it; the open de facto standard for electronic document distribution worldwide.
26. **DWF : (D**esign **W**eb **F**ormat) A highly compressed format for 2D and 3D drawings from Autodesk designed for distributing and viewing CAD drawings. Free software for creating DWF files from major CAD applications as well as viewing them is available from Autodesk (www.autodesk.com). DWF Composer lets designers mark up the drawings
27. **AutoCad Drawing File:** A computer file that contains lines, text and other objects drawn with a computer program known as AutoCad. AutoCad is a product of AutoDesk, Inc. (www.autodesk.com). Drawing files provided to the City as "Submittals" shall conform to the City's standards. The City standards for AutoCad drawing files specify layer names to be used, drawing conventions for each of the graphical entities (lines, polylines, arcs, circles, text, etc.), as well as standards for plotting and display attributes. The City's standards are published on the City's web site at (<url>), a drawing is available on the web site that is preloaded with layers, linetypes, text styles, and blocks that comprise the City's standards. A plotter CTB file is also available on the website.
28. **North Carolina Professional Land Surveyor:** A person duly registered by the North Carolina Board of Examiners for Engineers and Surveyors (www.ncbels.org) to practice land surveying in the State of North Carolina.
29. **North Carolina Professional Engineer:** A person duly registered by the North Carolina Board of Examiners for Engineers and Surveyors (www.ncbels.org) to practice Civil Engineering in the State of North Carolina.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. The Contractor shall provide the City with the submittals as discussed in the following paragraphs.

C. Prior to the award of the Contract, the Contractor shall provide the names and license numbers of the Professional Land Surveyors and Professional Engineers that will be in responsible charge of the project. The professionals shall be licensed in the State of North Carolina, and the licensees shall be in good standing and their registrations shall be current.

D. Prior to stakeout for the construction of each proposed improvement; the Contractor shall provide to the City an itemized list of the features to be staked, and a schedule of the days on which the work will be performed.

1.6 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. After construction is complete, and the work has been inspected and approved, the Contractor shall provide as-built record drawings and data for each Project in the Contract prior to the final payment.

C. The content and requirements of the as-built drawings shall be consistent with the requirements described in Section 4 of the "Reference Guide for Development" and the requirements of this section. In the case of a conflict between the "Reference Guide for Development" and the requirements specified herein, these specifications shall prevail

D. The as-built drawings and data shall be provided both in hard copy format and electronic format as described in this section. All hard copy shall be signed and sealed by the Professional Land Surveyor of record, and a Professional Engineer if the elevation(s) or alignment(s) of the as-built infrastructure varies from that specified in the contract drawings. The distances, elevations, grades, locations and content of the as-built plans shall be based on actual measurements and observations. The Professional Land Surveyor shall place the following certificate on each as-built drawing;

1. Surveyors Certificate I, certify that the all of the as-built data noted on this drawing was drawn under my supervision from an actual field survey made under my supervision. The level of precision for horizontal distances and coordinates is greater than or equal to 0.10' +/- feet, and that the level of precision for vertical elevations is greater than or equal to 0.10' +/- feet, or as otherwise specified in the contract documents. Witness my original signature, registration number and seal this day of, 200x.

E. The City reserves the right to reject any as-built submittal that either does not conform to the standards, or has erroneous or inaccurate information.

F. As-Built Plan and Profile Drawings – The contractor shall provide one set of as-built mylar plan and profiles drawings for each street in the project. The as-built drawings shall be prepared as described below;

1. The base drawings shall be the sheets as originally provided by the City with the contract documents, including any addendum's that added or modified previously published sheets. The contractor shall have these drawings printed on mylar for subsequent markup with as-built data as described below.
2. The as-built drawings shall reflect the as-built locations, grades, and elevations of the infrastructure that constructed for the project.
3. The as-built data shall be noted on the mylar by crossing out the proposed locations, grades, and elevations, and by neatly writing the as-built information. The legibility of the as-built annotations is of extreme importance, any as-built drawings that contain illegible or ambiguous information or data, at the sole discretion of the City staff, shell be rejected.
4. It is suggested that the contractor evaluate using a PDF annotation tool such as Adobe Acrobat Professional, or a DWF annotation tool such as the one offered by AutoDesk as a means of marking up the plan and profile sheets with as-built data. If the contractor elects the DWF process the City will assist by providing

DWF files of the plan and profile sheets. If the contractor elects to use either of these processes, the software will provide the ability to add legible color coded as-built text on top of the base PDF (or DWF). Once complete, the marked up sheet can be plotted on mylar satisfying the requirement.

G. **Media Requirements for Computer Data** – The drawings and data files as described further below shall be submitted on a CD or DVD computer media, subject to the following requirements;

1. Each street project shall be in a separate folder. The folder names shall be the name of the street, i.e Castlerock, Belgreen, Obie, etc. Within each street project the drawing files shall be in a separate folder from the data files. The folders shall be named "Drawings" and "Data", respectively.

2. The CD (or DVD) shall be have a permanent label which contains the information listed below. The label shall be computer generated and the information shall be typeset. Hand written labels will not be accepted due the issues regarding legibility.

a. "City Street Project ST-227"
b. The Contract Date.
c. Name of the firm which prepared the data.
d. Name of the Contractor who constructed the project.
e. Seal and signature of the Professional Land Surveyor of Record.
f. Date the CD (or DVD) was prepared.

H. **AutoCad Drawing File:** The contractor shall submit one AutoCad Drawing File for each street project in the "Drawings" folders as discussed in Section G above. The AutoCad drawing file shall contain the infrastructure that was constructed by the contractor during the project, as well as all other pertinent reference lines, project information, and survey control data established and/or used for the project. The infrastructure shall be drawn in the file at the as-built locations as surveyed and certified by the Professional Land Surveyor. The AutoCad drawing shall be prepared using the layering conventions and symbols as contained in the drawing files provided by the City for each of the street projects. The coordinate system for the drawing file, and the digital submissions as discussed in the following paragraph, shall be consistent the coordinate system of the horizontal and vertical control initially provided by the City for each street project.

I. **Digital Submission Requirements** – This section specifies the requirements to provide as-built data for direct import into the City's Geographic Information System (GIS). This data shall consist of files in an ASCII Comma Separated Value (CSV) file format. The coordinate system for the digitally submitted data as described below shall be the same as horizontal and vertical control for each street in the project as contained in the original data files provided by the City. Some of the streets have drawing files that are organized on an assumed coordinate system and azimuth, other streets have drawing files that are based on the NCGS coordinate system.

1. **Survey Control Data –** The file shall be named "SurveyControl" and the data in each line of the file shall correspond to each survey control point in the AutoCad drawing file discussed in Section H above. Specifically each line of the file shall contain the following information;

a. PointID,Easting,Northing,Elevation
b. Where;

1) PointID – is a unique number assigned to each survey control point
2) Easting – East coordinate value (precision: tenth +/- of a foot)
3) Northing – North coordinate value (precision: tenth +/- of a foot)
4) Elevation – Elevation (precision:-tenth +/- of a foot)

2. **Water Line Location Data –** The file shall be named "WaterLines" and the data in each line of the file shall correspond to each station staked out as described in Section 3.2.F of this specification. Specifically each line of the file shall contain the following information;
   a. PipeID,Easting,Northing,Elevation,Diameter,InstallDate, Manufacturer, ASTMClass,Description,ConnectingPipeID1,ConnectingPipeID2, ConnectingPipeID3 (all on one line in the file)
   b. Where;
      1) PipeID – is a unique number assigned to each section of pipe and noted on the as-built plan and profile sheets. The PipeID changes at each tee, cross, or transition.
      2) Easting – East coordinate value (precision: tenth +/- of a foot)
      3) Northing – North coordinate value (precision: : tenth +/- of a foot)
      4) Elevation – Approximate elevation at the bottom of the pipe diameter – The diameter of the pipe
      5) InstallDate – Date installed
      6) Manufacturer – Manufacturer of the pipe
      7) ASTMClass – The ASTM Classification of the Pipe
      8) Type – The type of the record for the line of data as follows
         a) If the location is waterline then this data field contains "WL".
         b) If the location is a tee (or cross) then this data field contains the text "TEE" or "CROSS".
         c) If the location is a 45° degree bend then this data field contains the text "45 BEND". If another degree bend is being installed the appropriate angle would be substituted in the example shown above.
         d) If the location is a blowoff then this data field contains the text "BO".
         e) If the location is a transition such as a 8" by 4" reducer, then this data field contains the text "8x4 RED".
      9) If the Type above is tee, cross or transition, then the PipeID's of the other pipes that connect to the item are listed separated by commas.

3. **Water Valves** – The file shall be named "WaterValves" and shall contain the following data. There is one line of data for each valve installed. All valves are to be listed, including hydrant valves.
   a. ValveID,Easting,Northing,Elevation,Access,InstallDate, Manufacturer,Operation,Diameter,Type (all on one line in the file)
   b. Where;
      1) ValveID – is as shown on the as-built drawings (ie "V-1")
      2) Easting – East coordinate value (precision: : tenth +/- of a foot)

3) Northing – North coordinate value (precision: : tenth +/- of a foot)
4) Elevation – Elevation at the center of the access (precision: : tenth +/- of a foot)
5) Access – Type of access either “Valve Box” or “Manhole”
6) InstallDate – Date installed
7) Manufacturer – Manufacturer of the valve
8) Operation – Right-hand or Left-hand
9) Diameter – The pipe diameter of the water valve
10) Type – Type of valve “Gate”, “Butterfly” etc.

4. **Hydrants** – The file shall be named “Hydrants” and shall contain the following data. There is one line of data for each hydrant installed.

a. HydrantID,Easting,Northing,Elevation,InstallDate, Manufacturer,Model (all on one line in the file)

b. Where;

1) HydrantID – is as shown on the as-built drawings (ie “Hyd-1”)
2) Easting – East coordinate value (precision: tenth +/- of a foot)
3) Northing – North coordinate value (precision: tenth +/- of a foot)
4) Elevation – Ground elevation at the base of the hydrant (precision: tenth +/- of a foot)
5) InstallDate – Date installed
6) Manufacturer – Manufacturer of the hydrant
7) Model – Model number of the hydrant

5. **Water Meter Boxes** – The file shall be named “WaterMeters” and shall contain the following data. There is one line of data for each water meter installed.

a. MeterID,Easting,Northing,Elevation,Access,InstallDate,ServiceSize, ServiceType (all on one line in the file)

b. Where;

1) MeterID – Lot Number or Street Address (ie “Lot10”, or “123StreetName”)
2) Easting – East coordinate value (precision: tenth +/- of a foot)
3) Northing – North coordinate value (precision: tenth +/- of a foot)
4) Elevation – Elevation at the center of the top of meter box (precision: tenth +/- of a foot)
5) Access – Type of meter box “Standard” or “Vault”
6) InstallDate – Date installed
7) ServiceSize – Diameter of the water line
8) Type – Service Type “Residetial”, “Irrigation”, “Commercial”.

6. **Sewer Manholes** – The file shall be named “SewerManholes” and shall contain the following data. There is one line of data for each sewer manhole.

a. ManholeID,Easting,Northing,Elevation,Diameter,InstallDate, Manufacturer,Material,InvertOutElevation,InvertOutDiameter, InvertInElevation-1,InvertInDiameter-1,Type-1 … InvertInElevation-n, InvertInDiameter-n,Type-n (all on one line in the file)

b. Where;

1) ManholeID – Manhole number as shown on the as-built drawings (ie “MH-1”)

2) Easting – East coordinate value (precision: tenth +/- of a foot)
3) Northing – North coordinate value (precision: tenth +/- of a foot)
4) Elevation – Rim elevation at the center of cover (precision: tenth +/- of a foot)
5) Diameter – Interior diameter
6) InstallDate – Date installed
7) Manufacturer – Manhole manufacturer
8) Material – Construction Material ie "RC","HPDE","Brick")
9) InvertOutElevation – Elevation of the Invert Out (precision – tenth +/- of a foot)
10) InvertOutDiameter – Diameter of the pipe for the invert out.
11) InvertInElevation-1 – Elevation of the first invert in (precision – tenth +/- of a foot)
12) InvertInDiameter-1 – Diameter of the pipe for the first invert in
13) Type-1 – The type of invert of the first pipe in (ie "Base", "DropBase-1","DropUpper-1"
14) ….
15) InvertInElevation-n – Elevation of the nth invert in (precision – tenth +/- of a foot)
16) InvertInDiameter-n – Diameter of the pipe for the nth invert in
17) Type-n – The type of invert of the nth pipe in (ie "Base", "DropBase-n","DropUpper-n"

7. **Sewer Pipes** – The file shall be named "SewerPipes" and shall contain the following data. There is one line of data for each sewer pipe.

a. PipeID,Diameter,InstallDate,Manufacturer,Material, UpstreamManhole,DownstreamManhole UpstreamInvertElevation,DownstreamInvertElevation, (all on one line in the file)

b. Where;

1) PipeID – A sequential pipe number as noted on the as-built drawings (ie "SSP-1")
2) Diameter – Pipe Diameter (Inches)
3) InstallDate – Date installed
4) Manufacturer – Pipe manufacturer
5) Material – Pipe Material (ie "DI","PVC","DI-401")
6) UpstreamManhole – Upstream manhole number as shown on the as-built drawings (is MH-1)
7) DownstreamManhole - Downstream manhole number as shown on the as-built drawings (is MH-2)
8) UpstreamInvertElevation – Invert elevation at the upstream end (precision –tenth +/- of a foot)
9) DownstreamInvertElevation – Invert elevation at the downstream end (precision –tenth +/- of a foot)

8. **Sewer Cleanouts** – The file shall be named "SewerCleanouts" and shall contain the following data. There is one line of data for each sewer cleanout.

a. CleanoutID,Easting,Northing,Elevation,Diameter,InstallDate,Material (all on one line in the file)

b. Where;

1) CleanoutID – Lot Number or Street Address (ie “Lot10”, or “123StreetName”)
2) Easting – East coordinate value (precision: tenth +/- of a foot)
3) Northing – North coordinate value (precision: tenth +/- of a foot)
4) Elevation – Ground elevation at the cleanout (precision: tenth +/- of a foot)
5) Diameter – Diameter of the cleanout
6) InstallDate – Date installed
7) Material – Cleanout material (is “CastIron”, “PVC”)

9. **Stormwater Structures** – The file shall be named “StormwaterStructures” and shall contain the following data. There is one line of data for each stormwater structure. A stormwater structure is either a manhole, curb inlet, yard inlet (solid concrete cover, supported on the corners with side flow entry, or a drop inlet (cast iron grate cover with slotted openings).

a. SWStructureID,Easting,Northing,Elevation,InstallDate,Manufacturer, StructureType, Dimension1,Dimension2,Material, InvertOutElevation,InvertOutDiameter, InvertInElevation-1,InvertInDiameter-1, … InvertInElevation-n, InvertInDiameter-n (all on one line in the file)

b. Where;

1) SWStructureID – Structure number as shown on the as-built drawings (ie “SWMH-1”, “CB-2”, “YI-4”,”DI-3”))
2) Easting – East coordinate value (precision: tenth +/- of a foot)
3) Northing – North coordinate value (precision: tenth +/- of a foot)
4) Elevation – Rim elevation at; (precision: tenth +/- of a foot)
   a) If a manhole, the center of the cover
   b) If a curb inlet, the back of curb at the center of the box
   c) If a yard inlet, the flow line (ditch) elevation at the rim
   d) If a drop inlet, the center of the cast iron grate
5) InstallDate – Date installed
6) Manufacturer – Manufacturer if pre-fabricated
7) StructureType – Type of stormwater structure
   a) If a manhole, “Manhole” or “Junction Box”
   b) If a curb inlet, “Type-1” or “Type2”
   c) If a yard inlet, “Yard Inlet”
   d) If a drop inlet, “Drop Inlet”
8) Dimension1 – The first interior dimension of a rectangular box, or the diameter if a circular manhole.
9) Dimension2 – The second interior dimension of a rectangular box, or empty field if a circular manhole
10) Material – Construction Material ie “RC”,”HPDE”,”Brick”)
11) InvertOutElevation – Elevation of the Invert Out (precision – tenth +/- of a foot)
12)
13) InvertOutDiameter – Diameter of the pipe for the invert out.
14) InvertInElevation-1 – Elevation of the first invert in (precision – tenth +/- of a foot)

15) InvertInDiameter-1 – Diameter of the pipe for the first invert in
16) InvertInElevation-n – Elevation of the nth invert in (precision – tenth +/- of a foot)
17) InvertInDiameter-n – Diameter of the pipe for the nth invert

10. **Stormwater Pipes** – The file shall be named "StormwaterPipes" and shall contain the following data. There is one line of data for each stormwater pipe.

a. PipeID,Diameter,InstallDate,Manufacturer,Material, UpstreamStructrure,DownstreamStructure UpstreamInvertElevation,DownstreamInvertElevation, (all on one line in the file)

b. Where;

1) PipeID – A sequential pipe number as noted on the as-built drawings (ie "SWP-1")
2) Diameter – Pipe Diameter (Inches)
3) InstallDate – Date installed
4) Manufacturer – Pipe manufacturer
5) Material – Pipe Material (ie "RCP","PVC","HDPE")
6) UpstreamStructure – Upstream structure number as shown on the as-built drawings (is SWMH-1)
7) DownstreamStructure - Downstream structure number as shown on the as-built drawings (is CB-2)
8) UpstreamInvertElevation – Invert elevation at the upstream end
9) DownstreamInvertElevation – Invert elevation at the downstream end

11. **Stormwater End Sections** – The file shall be named "StormwaterEndSections" and shall contain the following data. There is one line of data for each stormwater pipe.

a. EndSecID,Diameter,InstallDate,Manufacturer,Material, UpstreamStructrure,DownstreamStructure UpstreamInvertElevation,DownstreamInvertElevation, (all on one line in the file)

b. Where;

1) EndSecID – A sequential end section number as noted on the as-built drawings (ie "FES-1")
2) Diameter – Pipe Diameter (Inches)
3) InstallDate – Date installed
4) Manufacturer – Manufacturer
5) Material – Pipe Material (ie "RCP","PVC","HDPE")
6) UpstreamStructure – Upstream pipe number as shown on the as-built drawings (ie "SWP-1")

1.7 QUALIFICATIONS

A. The contractor must have a North Carolina Professional Land Surveyor (PLS) either as an employee or as a subcontractor at all times. The PLS shall at all times be "In responsible charge" of all surveying, layout, calculations, stakeout, and other related field work performed in the Contract.

B. If there is any change of PLS during the course of the Contract, the Contractor shall notify the City in advance.

C. The Contractor shall use competent, qualified personnel and suitable equipment for the surveying, calculations and layout work performed in this Contract.

1.8 PRE-CONSTRUCTION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. The contractor's North Carolina Professional Land Surveyor shall attend the pre-construction meetings.

PART 2 PRODUCTS

2.1 WOODEN STAKES – Wooden stakes shall be of the length as specified in the various sections of Part 3 of this specification, and shall have nominal dimensions of 2" wide by 1" thick. The stakes shall mostly free from knots and shall have machined surfaces (planed or sanded) that are easy to write annotation on with a felt tip marker. The stakes shall have symmetrical saw formed points to ensure all sides are equal so the stakes can drive straight.

2.2 MARKING (PIN) FLAGS – The marking or pin flags shall as manufactured by Presco or equivalent. The staffs shall be a minimum of 18" in length and shall be 16 gauge steel or heavier. The flag shall be glued to the staff and shall be colorful and highly visible, durable, long-lasting and rated for outdoor use. The flag area shall be sufficient for the intended use and of an appropriate size so as to allow annotation to be written legibly and at a size that is easily read for a distance.

2.3 PROPERTY IRONS – Any property irons that are restored as a result of disturbance or removal shall be made of standard ¾" bright galvanized water pipe with a nominal length of at least 20"

2.4 WOODEN HUBS - Wooden stakes shall be 6" to 9" long and shall have nominal dimensions of 2" by 2". The hubs shall mostly free from knots and shall have machined surfaces. (planed or sanded) with a symmetrical saw formed point to ensure all sides are equal so the hubs can drive straight.

2.5 FLAGGING – The flagging shall be as manufactured by Presco or equivalent. The flagging shall be colorful and highly visible, durable, high tensile strength, long-lasting and rated for outdoor use.

PART 3 EXECUTION

3.1 GENERAL

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. The Contractor shall perform all staking necessary to delineate clearing and/or grubbing limits; all slope staking; all staking of culverts and drainage structures; all curb and gutter; water lines; sewer lines and manholes; the staking of right-of-way and easements; the staking, referencing and other actions as may be required to preserve or restore land monuments and property corners; and all other staking required for the project.

C. The Contractor shall provide the City with 24 hours notice when the staking is complete for each element of the project, prior to construction to allow the City staff to inspect and approve the stakes for construction. If the City staff does not inspect the stakes within 24 hours of notification, the Contractor may proceed with construction

D. If the City staff determines that the stakes are not in accordance with the plans and/or the specifications, the staff may direct the Contractor to re-stake prior to approving the stakeout for construction.

E. The construction stakes and survey control shall be placed in locations that do not interfere with the use or enjoyment of private or public property. Examples of places where ***not*** to place stakes and/or survey control are; a) landscape beds, b) driveways and sidewalks, c) maintained lawns, d) within fenced areas, e) areas to be disturbed by construction, etc.

F. The construction stakes and survey control shall be placed in locations where they will be safe from construction activities and vandalism, as well as vehicular, and bicycle and pedestrian traffic. The City shall neither accept any claims nor financial responsibility responsible for missing, vandalized or compromised construction stakes or survey control.

G. Field notes shall be kept in standard bound notebooks in a clear, orderly and neat manner, consistent with standard engineering and surveying practices. The Contractors field books shall be available for inspection by the City at any time.

H. All field survey notes, including those which become source documentations from which quantities for payment are computed, shall be recorded by a note keeper furnished by the Contractor. The note keeper shall be thoroughly familiar with generally accepted standards of good survey note keeping practice.

3.2 STAKEOUT METHODS

A. **General Discussion:** The stake-out methods required will depend on the type of project, and site specific land features and constraints. These specifications for stake-out methods cover the following types of construction projects; 1) Street construction (including storm water improvements), 2) Water distribution system improvements and extensions, 3) Sewer system improvements and extensions, 4) Storm water improvements and extensions, and 5) Sidewalk installation, replacement and improvements. In the sub-sections which follow, the typical staking requirements for each type of project are listed. These are provided as a guide and reference, not every project will require all of the stake-out listed. Some projects may require stake-out that is not identified in the lists which follow. It is the Contractor's responsibility to identify the staking required in order to construct a project, and to provide the staking for the project in accordance with these

specifications. Where a specification may not exist, or if a Contractor wants to propose a different methodology, the Contractor shall prepare a submittal to the City for review and approval (prior to stake-out) that specifies the methods proposed for the stakeout.

B. **Clearing/Disturbed Area Limits:** Prior to the beginning any construction what so ever, the clearing limits (or disturbed area, or cut/fill slope limits) shall be staked. Three (3) foot tall stakes with a green ribbon shall be used at 25' foot intervals, or if approved by the City in advance 50' intervals. The stake shall say "Clearing Limit" and shall have a location designation that ties it to a station along an alignment. A clearing limit stake shall also be placed at every location along the project corridor where the alignment changes direction

C. **Slope Stakes: S**lope stakes are used in street construction and shall be set at 25' stations along the alignment unless otherwise directed by the City staff. The slope stakes shall also be set at the PC's and PT's of the horizontal curves. If a PC or PT is within 10' of a 25' station, the stake for the 25' station may be omitted. The slope stakes shall be placed as shown in Figure S-1 on the following page. The Figure shows a slope stake on one side because of space limitations; however, slope stakes are to be placed on both the right and left sides at each station. If flagging is used to increase the visibility of the stakes, typically the color pink is chosen. At each station the slope stakes shall consist of the following;

1. **Slope Stake 36"**: These stakes are placed by survey at the locations where the slopes from the proposed street cross-section tie into the existing grade. The primary offset stake shall, as a minimum, have the following information, written from the top down as follows;
   a. The first item written on the stake identifies the stake as a slope stake. This shall be written as "SLOPE"
   b. The second item written on the stake is the station. In the example shown in the Figure, the station would be written as "6+25".
   c. The next item written on the slope stake is the distance from the stake to the centerline. The distance shall be written as "xx.x' OFF", where xx.x is the distance to the nearest tenth. The distance in the example shown in the Figure is 33.9'.
   d. The next item on the stake is the cut (or fill) to the finished grade (asphalt) at the street centerline from the ground elevation at the base of the stake. The ground elevation at the base of the slope stake is determined by survey at the time it is placed. The cut (or fill) shall be written as "CUT x.x C/L" or "FILL x.x C/L", where x.x is the vertical distance to the nearest tenth. The cut for the right-hand-side of the example shown in the Figure is 5.1'.
   e. The next item written on the slope stake is the distance from the stake to the toe of the cut (or fill) slope at the back of the sidewalk area. The distance shall be written as "xx.x' OFF TOE", where xx.x is the distance to the toe to the nearest tenth. The distance in the example shown in the Figure is 8.9'.
   f. The next item on the stake is the cut (or fill) to the grade at the toe of the cut (or fill) slope at the back of the sidewalk area from the ground elevation at the base of the stake. The cut (or fill) shall be written as

"CUT x.x C/L" or "FILL x.x C/L", where x.x is the vertical distance to the nearest tenth. The cut for the right-hand-side of the example shown in the Figure is 4.7'.

2. **Primary Offset Stake 36"**: The stake shall be placed at distance, measured with a tape, away from the slope stake in a direction that will remain undisturbed during construction. The center of the offset stake serves as the place to measure the distance back to the slope stake. The distance it is placed is usually 10',15', or 20' feet away from the slope stake, and the distance is almost always measures at 5' intervals. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. The primary offset stake shall, as a minimum, have the following information, written from the top down as follows;
   a. The first item written on the stake is the offset distance from the slope stake. The distance shall be written as "xx' OFF", where xx is the distance. In the example in the Figure this distance is 20'.
   b. … the next six items written on the offset stake are the same information as written on the slope stake beginning with "SLOPE" as listed above.
   c. …. station.
   d. …. distance from the slope stake to the centerline.
   e. …. the cut (or fill) to the finished grade (asphalt) at the street centerline from the ground elevation at the base of the slope stake.
   f. … distance from the slope stake to the toe of the cut (or fill) slope at the back of the sidewalk area.
   g. …. the cut (or fill) to the grade at the toe of the cut (or fill) slope at the back of the sidewalk area from the ground elevation at the base of the slope stake.
   h. The last item written on the offset stake is the cut (or fill) of the existing grade at the base of the offset stake, to the original undisturbed grade at the base of the slope stake. The cut (or fill) shall be written as "CUT x.x SS" or "FILL x.x SS", where x.x is the vertical distance to the nearest tenth. The item for the right-hand-side slope stake in the example shown in the Figure is 5.1' would be written as "CUT 2.0 SS".
3. **Secondary Offset Stake 36":** The last stake is the secondary offset, it is set with a tape measure so that it is co-linear with the slope stake and the primary offset stake, and it spaced 5', 10', or 15' behind the primary offset stake away from the slope stake. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. The secondary offset stake shall, as a minimum, have the following information, written from the top down as follows;
   a. The first item written on the stake is the offset Distance from the slope stake to the location stake. The distance shall be written as "xx' OFF", where xx is the distance. In the example in the Figure this distance is 25'.
   b. The next item written on the stake is the on the stake identifies is as an offset for the slope stake. This shall be written as "SLOPE".
   c. The last item written on the offset stake is the station. In the example shown in the Figure, the station would be written as "6+25".

D. **Manhole or Drainage Structure:** Each manhole or drainage structure shall be staked as shown in Figure S-2. If flagging is used to increase the visibility of the stakes, typically the color red is chosen for sewer manholes, blue is chosen for mainline water valve manholes, and the color pink is chosen for storm water structures. At each manhole or drainage structure location the stakes shall consist of the following;

1. **An 18" location stake**: This stake is placed by survey at the location the structure is to be placed. For sewer, water valve and storm water manholes and yard inlets that location shall be the center of the base of the structure. For curb inlet drainage structures the location shall be the center of the structure at the back of curb. The name of the structure as shown on the construction drawings shall be written on this stake.
2. **Primary Offset Stake 36" with Hub (or Nail)**: The hub (or nail) shall be placed at distance, measured with a tape, away from the location stake in a direction that will remain undisturbed during construction. The center of the hub serves as the first offset back to the location stake, the distance it is placed is usually 10',15', or 20' feet away from the location stake, and the distance is almost always measures at 5' intervals. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. The elevation of the hub (in the design datum of the project) is obtained by survey at the time it is placed. The stake next to the hub serves as a guard for the hub and has information about the structure written on it. The primary offset stake shall, as a minimum, have the following information, written from the top down as follows;
   a. The first item written on the stake is the offset distance from the hub to the location stake. The distance shall be written as "xx' OFF", where xx is the distance.
   b. The next item written on the stake is the name of the structure as written on the location stake from the construction drawings. An example is "MH-1"
   c. The next item on the stake is the cut (or fill) to the finished grade at the top of the structure. For manholes the finished grade would be the proposed rim elevation, for yard inlets the finished grade is the ditch grade or flowline into the basin, for curb inlets, the finished grade is the top of curb at the center of the structure. The cut (or fill) shall be written as "CUT x.xx RIM" or "CUT x.xx TOC", or "FILL x.xx RIM", or "FILL x.xx TOC"
   d. If the structure is a water valve, the next item is the cut (or fill) to the top of the waterline. The cut (or fill) shall be written as "CUT x.xx W/L" or "FILL x.xx W/L".
   e. If the structure is a manhole or drainage structure, the next item on the stake is the cut (or fill) to the invert out. The cut (or fill) shall be written as "CUT x.xx OUT" or "FILL x.xx OUT".
   f. If the structure is a manhole or drainage structure, the next items on the stake are the cut (or fill) to each of the inverts in. There is one line for each incoming invert. The cut (or fill) shall be written as "CUT x.xx IN1" or "FILL x.xx IN1" for the first invert, and "CUT x.xx IN2" or "FILL x.xx IN2" for the second invert and so on.

3. **Secondary Offset Stake 36":** The last stake is the secondary offset, it is set with a tape measure so that it is co-linear with the location stake and the primary offset stake, and it spaced 5', 10', or 15' behind the primary offset stake away from the location stake. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. The secondary offset stake shall, as a minimum, have the following information, written from the top down as follows;
   a. The first item written on the stake is the offset Distance from the hub to the location stake. The distance shall be written as "xx' OFF", where xx is the distance.
   b. The next item written on the stake is the name of the structure as written on the location stake from the construction drawings. An example is "MH-1

E. **Fire Hydrants:** Each fire hydrant shall be staked as shown in Figure S-3. If flagging is used to increase the visibility of the stakes, typically the color blue is chosen. At each fire hydrant location the stakes shall consist of the following;
1. **An 18" location stake**: This stake is placed by survey at the location the fire hydrant is to be placed.
2. **Primary Offset Stake 36" with Hub (or Nail)**: The hub (or nail) shall be placed at distance, measured with a tape, away from the location stake in a direction that will remain undisturbed during construction. The center of the hub serves as the first offset back to the location stake, the distance it is placed is usually 10',15', or 20' feet away from the location stake, and the distance is almost always measures at 5' intervals. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. The elevation of the hub (in the design datum of the project) is obtained by survey at the time it is placed. The stake next to the hub serves as a guard for the hub and has information about the fire hydrant written on it. The primary offset stake shall, as a minimum, have the following information, written from the top down as follows;
   a. The first item written on the stake is the offset distance from the hub to the location stake. The distance shall be written as "xx' OFF", where xx is the distance.
   b. The next item written on the stake is the name of the structure as written on the location stake from the construction drawings. An example is "FH-1"
   c. The next item on the stake is the cut (or fill) to the finished earthen grade at the base of the fire hydrant. This is used to set the high of the fire hydrant, and the elevation of the shear plate.
3. **Secondary Offset Stake 36":** The last stake is the secondary offset, it is set with a tape measure so that it is co-linear with the location stake and the primary offset stake, and it spaced 5', 10', or 15' behind the primary offset stake away from the location stake. Great care must be taken to insure that the distances measured to and from the offset stakes are horizontal (not slope) using a plumb bob when necessary. The secondary offset stake shall, as a minimum, have the following information, written from the top down as follows;

a. The first item written on the stake is the offset Distance from the hub to the location stake. The distance shall be written as "xx' OFF", where xx is the distance.

b. The next item written on the stake is the name of the fire hydrant as written on the location stake from the construction drawings. An example is "FH-1".

F. **Water Line, Tees, Bends, Valves, Blowoffs and Transitions:** The water line alignment shall be grade staked at 25' stations and at tees, bends, valves, blowoffs and transitions. Acceptable staking materials for the waterline include 18" (or longer) wooden stakes and marking (pin) flags. If flagging is used to increase the visibility of the stakes, typically the color blue is chosen. If pin flags are used, the color blue is typically used. No matter which staking material is used the following information shall be written in the stake (or flag).

1. The first item written on the stake (or flag) is reflects what is being installed at that location. For example

   a. If 8" waterline is to be installed, the text "8 WL" is written on the stake. If another size of waterline is being installed, the appropriate diameter is substituted for the 8 in the example above.

   b. If a tee (or cross) is being installed the text "TEE" or "CROSS" is written on the stake along with the pipe sizes on each leg. For example if an 8" by 8" by 8" tee is specified for that location the text "8x8x8" is written. If a 12" by 12" by 8" by 4" cross is specified the text "12x12x8x4" would be written.

   c. If a 45° degree bend is to be installed, the text "45 BEND" would be written. If another degree bend is being installed the appropriate angle would be substituted in the example shown above.

   d. If a 4", 6" or 8" valve is being installed (larger diameter valves are called mainline valve and they require a manhole - see manholes above), then the text "4 GV", "6GV", or "8GV" is written on the stake. Shutoff valves for fire hydrants are considered part of the fire hydrant assembly and are not staked separately (see fire hydrant above).

   e. If a 2" blowoff is being installed, the text "2 BO" is written on the stake If another diameter blowoff is being installed, the appropriate diameter is substituted for the 2 in the example above.

   f. If a transition is being installed such as a 8" by 4" reducer, the text "8x4 RED" would be written.

2. The second item written on the stake is the cut to the bottom of the water line from the grade at the base of the stake (or flag). The cut shall be written as "CUT x.xx" where x.xx is the distance in feet from the grade to the bottom of the waterline.

G. **Subgrade Centerline Stakes:** After the utilities and storm drainage are installed, the subgrade street base typical section shall be reshaped and centerline grade stakes shall be placed at 50' stations as shown in Figure S-4. At each station the stake shall consist of the following;

1. **An 18" location stake**: This stake is placed by survey at the location of the road centerline station. The elevation of the subgrade (in the design datum of the

project) is obtained by survey at the time it is placed. The difference between the elevation obtained, and the required design elevation (of the subgrade) at that location shall be computed and written on the stake. The stake shall, as a minimum, have the following information, written on it;

a. The station location (is 6+50).
b. The next item on the stake is the cut (or fill) to the required subgrade elevation at the base of the stake.

H. **Curb and Gutter Stakes:** After the subgrade has been approved by the City staff for installation of stone base and curb and gutter, the curb and gutter shall be grade staked at 25' stations as well as at every PC and PT in the alignment. Figure S-5 shows how the stakes are to be placed. The stakes consist of a hub and a guard, the hub is placed at an offset of 5' behind the back of curb. At each location the stakes shall consist of the following:

1. **A Hub**: This hub is placed by survey at a 5' offset away from the back of curb. The elevation of the hub (in the design datum of the project) is obtained by survey at the time it is placed. The difference between the elevation obtained, and the required design elevation of the back of curb shall be computed and written on the guard stake.
2. **An 18" guard stake**: This stake is placed directly behind the hub. The stake shall, as a minimum, have the following information, written on it;
   a. The station location (is 6+50).
   b. The cut (or fill) from the hub to the required elevation at the back of the curb.

END OF SECTION

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SECTION 31 05 13

SOILS FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Undercutting.
2. Unsuitable materials.

1.2 UNIT PRICES - MEASUREMENT AND PAYMENT

A. Borrow Excavation:
1. Basis of Measurement: By cubic yard
2. Basis of Payment: Includes excavating existing subsoil, supplying subsoil materials, stockpiling.

B. Borrow Materials:
1. Basis of Measurement: By cubic yard
2. Basis of Payment: Includes excavating existing topsoil, supplying topsoil materials, stockpiling.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
2. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft3 (2,700 kN-m/m3)).
3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

PART 2 EXECUTION

2.1 EXCAVATION

A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.

B. Stockpile excavated material meeting requirements for subsoil materials and topsoil materials.

C. Remove excess excavated materials subsoil and topsoil not intended for reuse, from site.

D. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.

2.2 STOCKPILING

A. Stockpile materials on site at locations indicated by Architect/Engineer.

B. Stockpile in sufficient quantities to meet Project schedule and requirements.

C. Stockpile topsoil 8 feet high maximum.

D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

E. Stockpile unsuitable materials on impervious material and cover to prevent erosion and leaching, until disposed of.

2.3 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Remove asphalt pavement
2. Removing surface debris.
3. Removing designated trees, shrubs, and other plant life.
4. Protection of existing trees to remain in place.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Remove Asphalt Pavement
1. Basis of Measurement: Incidental to this project.
2. Basis of Payment: Includes removal of entire depth of asphalt pavement, and disposal of pavement from site.

B. Grading Construction Limits:
1. Basis of Measurement: By cubic yard.

C. Full compensation for this item is considered incident to the contract unit prices for the various Asphalt Concrete mix items. Tree Removal:
1. Basis of Measurement: By tree diameter, measured at a height of 4 feet 6 inches above the ground, by each:
   a. 4 inch to 6 inch
   b. 7 inch to 12 inch
   c. 13 inch to 18 inch
   d. 19 inch to 24 inch
   e. 25 inch to 36 inch
   f. 37 inch to 48 inch
   g. 49 inch and Larger
2. Basis of Payment: Includes tree removal, loading and removing waste materials from site or as directed by the Inspector.

D. Tree protection Fencing:
1. Basis of measurement: By lineal foot.
2. Basis of Payment: Includes installation, maintenance of, and removal of tree protection fencing. This price also includes seeding of affected area after the removal has been completed.

E. Landscape Removal and tree trimming:
1. Basis of measurement: By lump sum.
2. Full Basis of Payment: Includes the removal of any shrubs, brick or concrete pavers, bollards, landscape timber, and small trees in the City's right-of-way and

that are affected by the new sidewalk construction. This price also includes seeding of affected area after the removal has been completed.

3. The Contractor shall contact the Engineer when tree trimming is necessary so that the City's Urban Forestry Department can be review any trees to be trimmed.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with City of Durham Standard Specifications and Section 01 40 00.

PART 2 EXECUTION

2.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify existing plant life designated to remain is tagged or identified.

C. Identify waste area for placing removed materials.

2.2 PREPARATION

A. Call Local Utility Line Information service at not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

2.3 PROTECTION

A. Locate, identify, and protect utilities indicated to remain, from damage.

B. Protect trees, plant growth, and features designated to remain, as final landscaping as specified in Section 01 50 00 - Temporary Facilities as directed by the Engineer.

C. Protect bench marks, survey control points, and existing structures from damage or displacement.

2.4 CLEARING & GRUBBING

A. Clear areas required for access to site and execution of Work to minimum depth of 12 inches.

B. Removal of undergrowth, all plants with diameters less than 4 inches measured at a height of 4 feet 6 inches above the ground.

C. Remove stumps, main root ball, and root system to depth of 12 inches.

D. Embankments that exceed 6 feet in height, sound trees may be cut 6 inches above natural ground and the stumps left in place or as directed by the Engineer..

E. Clear undergrowth and deadwood, without disturbing subsoil.

F. Apply herbicide to remaining stumps to inhibit growth. No direct payment will be made for applying herbicide, it is considered incidental to the various items in this section.

2.5 REMOVAL

A. Remove debris, rock, and extracted plant life from site.

B. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.

C. Do not burn or bury materials on site. Leave site in clean condition.

END OF SECTION

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SECTION 31 22 14

SHOULDER RECONSTRUCTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Location for shoulder reconstruction.
2. Shoulder reconstruction procedure.
3. Material.
4. Construction methods.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.
5. Section 01 70 00 – Execution and Closeout Requirements.
6. Section 32 12 16 – Asphalt Paving.
7. Section 32 92 19 – Seeding and Mulching.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Shoulder Reconstruction:
1. Basis of Measurement and Payment: Incidental to this project.
2. Includes but not limited to scarifying existing shoulders, furnishing earth material, shaping and compacting the reconstructed shoulder.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures Requirements for submittals.

PART 2 EXECUTION

2.1 LOCATION FOR SHOULDER RECONSTRUCTION

A. Shoulder reconstruction is necessary in areas where drop-offs are equal to or greater than two (2) inches or in areas as directed by the Engineer.

2.2 SHOULDER RECONSTRUCTION PROCEDURE

A. Perform shoulder reconstruction in areas where drop-offs are equal to or greater than two (2) inches immediately following paving operations. In no case allow paving operations to exceed shoulder operations by more than two (2) weeks without written permission of

the Engineer. Failure to meet this requirement shall be cause to cease paving operations until it can be met.

2.3 MATERIAL

A. The Contractor shall furnish earth material meeting the approval of the Engineer.

2.4 CONSTRUCTION METHODS

A. Scarify existing shoulder to provide the proper bond between it and the fill material.

B. Place earth material during dry weather and on dry unfrozen subgrade.

C. Remove vegetable matter and foreign non-organic material from earth material while spreading and dispose at an approved site.

D. Shape and compact earth material to eliminate rough, low or soft areas, and to ensure positive drainage.

E. Dispose of any excess earth generated by the shoulder reconstruction in an approved disposal site.

END OF SECTION

SECTION 31 25 13

EROSION CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Diversion Channels.
2. Rock Energy Dissipator.
3. Paved Energy Dissipator.
4. Rock Basin.
5. Rock Barriers.
6. Sediment Ponds.
7. Sediment Traps.
8. Cleaning Sedimentation Structures.
9. Temporary Seeding.
10. Seeding & Mulching, Type I, (yards).
11. Seeding & Mulching, Type II (non-residential areas)
12. Silt Fence.
13. Silt Fence Outlet.
14. Block and Gravel Inlet Protection.
15. Fabric Drop Inlet Protection.
16. Type I Basin
17. Type II Basin
18. Type B Basin
19. Check Dam

B. Related Sections:
1. Section 31 05 13 - Soils for Earthwork.
2. Section 31 05 16 - Aggregates for Earthwork.
3. Section 31 10 00 - Site Clearing.
4. Section 31 23 16 - Excavation.
5. Section 31 23 23 - Fill.
6. Section 31 37 00 - Riprap.
7. Section 32 92 19 - Seeding and Soil Supplements.
8. Section 33 42 13 - Pipe Culverts.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Diversion Channel:
1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes excavating, windrowing, compacting, seeding, and mulching.

B. Rock Energy Dissipator:
1. Basis of Measurement: By each unit.

2. Basis of Payment: Includes cleaning, excavating, backfilling, placing embankment, placing geotextile fabric, placing rock, and required grouting.

C. Rock Basin:
1. Basis of Measurement: By each unit.
2. Basis of Payment: Includes excavating, removing unsuitable material, backfilling, placing embankment, clearing, placing rock, and grouting.

D. Sediment Pond:
1. Basis of Measurement: By each unit.
2. Basis of Payment: Includes clearing, excavating, piping, placing riser footing, constructing embankment and trench and rock basin, seeding and mulching.

E. Sediment Trap:
1. Basis of Measurement: By each unit.
2. Basis of Payment: Includes clearing, excavating, forming embankment, placing aggregate or rock and geotextile fabric, seeding, and mulching.

F. Cleaning Sedimentation Structures:
1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes removal, hauling and disposal of sediment and other debris in system.

G. Temporary Seeding
1. Basis of Measurement: By square yard.
2. Basis of Pavement: See plans for details.

H. Seeding & Mulching, Type I (yards)
1. Basis of Measurement: By square yard.
2. Basis of Pavement: See plans for details. In addition to the plans, all rocks & debris 1” and larger shall be removed.

I. Seeding & Mulching, Type II (non-residential areas)
1. Basis of Measurement: By square yard.
2. Basis of Pavement: See plans for details. In addition to the plans, all rocks & debris 3” and larger shall be removed.

J. Silt Fence
1. Basis of Measurement: By linear foot
2. Basis of Pavement: See plans for details.

K. Silt Fence Outlet
1. Basis of Measurement: By each unit
2. Basis of Pavement: See plans for details.

L. Block and Gravel Inlet Protection:
1. Basis of Measurement: By each unit
2. Basis of Pavement: See plans for details.

M. Fabric Drop Inlet Protection:
   1. Basis of Measurement: By each unit
   2. Basis of Pavement: See plans for details.

N. Type I Basin:
   1. Basis of Measurement: By each unit
   2. Basis of Pavement: See plans and City of Durham's Water and Sewer Construction Specifications for details.

O. Type II Basin:
   1. Basis of Measurement: By each unit
   2. Basis of Pavement: See plans and City of Durham's Water and Sewer Construction Specifications for details.

P. Check Dam:
   1. Basis of Measurement: By each unit
   2. Basis of Pavement: See plans for details.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO T88 - Standard Specification for Particle Size Analysis of Soils.
   2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.

C. ASTM International:
   1. ASTM C127 - Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
   2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
   3. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft3 (2,700 kN-m/m3)).
   4. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
   5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

D. Precast/Prestressed Concrete Institute:
   1. PCI MNL-116S - Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.

E. North Carolina Department of Environment and Natural Resources (NCDENR)
   1. Erosion and Sediment Control Planning and Design Manual

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Product Data: Submit data on joint filler, joint sealer, admixtures, curing compounds, and geotextile.

C. Submit proposed mix design of each class of concrete for review prior to commencement of Work.

D. Samples:
1. Submit two samples or rock, minimum 5 tons each or one half total project quantity, whichever is smaller. Provide one sample in place at construction site and provide other sample at quarry. Construction site sample may be incorporated into the Work. Samples will be used as reference for judging size, and graduation of rock supplied and placed.

E. Test Reports: Indicate certified tests results for precast concrete at manufacturing facility, cast-in-place concrete in field, and granular backfill.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with all practice standards and specifications included in the Erosion and Sediment Control Planning and Design Manual prepared by the North Carolina Department of environment and Erosion Control (NCDENR).

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not place grout when air temperature is below freezing.

C. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.1 ROCK AND GEOTEXTILE MATERIALS

A. Furnish materials in accordance with Public Work's standards.

B. Rock: Sound, hard and angular shape; well graded; without shale seams, structural defects and foreign substances; with width and thickness greater than one third its length;

Square Opening inches	Percent Passing NCSA Size No.					
	R8	R7	R6	R5	R4	R3
42	100					
30		100				
24	15-50		100			
18		15-50		100		
15	0-15					
12		0-15	15-50		100	
9				15-50		
6		0-15	0-15		15-50	100
4				0-15		
3					0-15	15-50
2						0-15

C. Geotextile Fabric: Furnish in accordance with Public Work's standards.

2.2 SOURCE QUALITY CONTROL (AND TESTS)

A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.

B. Perform tests on cement, aggregates, and mixes to ensure conformance with specified requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify compacted subgrade is acceptable and ready to support devices and imposed loads.

C. Verify gradients and elevations of base or foundation for other work are correct.

3.2 DIVERSION CHANNELS

A. Windrow excavated material on low side of channel.

B. Compact to 95 percent maximum density.

C. On entire channel area, apply soil supplements and sow seed as specified in Section 32 92 19.

D. Mulch seeded areas with hay as specified in Section 32 92 19.

3.3 SEDIMENTATION POND

A. Clear and grub storage area and embankment foundation area site as specified in Section 31 10 00.

B. Excavate key trench for full length of dam. Excavate emergency spillway in natural ground.

C. Install pipe spillway, with anti-seep collar attached, at location indicated.

D. Place forms, and reinforcing for concrete footing at bottom of riser pipe [with trash rack and anti-vortex device], as specified in Section 03 10 00, and Section 03 20 00. Construction of embankment and trench prior to placing pipe is not required.

E. Mix, place, finish, and cure concrete, as specified in Section 03 30 00.

F. Do not use coarse aggregate as backfill material around pipe. Backfill pipe with suitable embankment material to prevent dam leakage along pipe.

G. Construct rock basin at outlet end of pipe, as specified in this Section. Place embankment material, as specified in Section 31 23 23. When required, obtain borrow excavation for formation of embankment, as specified in Section 31 23 23.

H. On entire sedimentation pond area, apply soil supplements and sow seed as specified in Section 32 92 19.

I. Mulch seeded areas with hay as specified in Section 32 92 19.

3.4 SEDIMENT TRAPS

A. Clear site, as specified in Section 31 10 00.

B. Construct trap by excavating and forming embankments as specified in Section 31 23 16, and Section 31 23 23.

C. Place coarse aggregate or rock at outlet as indicated on Drawings.

D. Place geotextile fabric, as specified for rock energy dissipator.

E. When required, obtain borrow excavation for formation of embankment, as specified in Section 31 23 16.

F. On entire sediment trap area, apply soil supplements and sow seed as specified in Section 32 92 19.

G. Mulch seeded areas with hay as specified in Section 32 92 19.

3.5 SITE STABILIZATION

A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2: 1 or flatter.

D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.
   1. During non-germinating periods, apply mulch at recommended rates.
   2. Stabilize disturbed areas which are not at finished grade and which will be disturbed within one year in accordance with Section 32 92 19.
   3. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year in accordance with Section 32 92 19 permanent seeding specifications.

E. Stabilize diversion channels, sediment traps, and stockpiles immediately.

3.6 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements:Requirements for cleaning.

B. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

C. Do not damage structure or device during cleaning operations.

D. Do not permit sediment to erode into construction or site areas or natural waterways.

E. Clean channels when depth of sediment reaches approximately one half channel depth.

3.7 PROTECTION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.

C. Do not permit construction traffic over paving for 7 days minimum after finishing until 75 percent design strength of concrete has been achieved.

D. Protect paving from elements, flowing water, or other disturbance until curing is completed.

3.8 SCHEDULES

A. Erosion Control Schedule:

Erosion Control Element	Location	Size
Diversion Channel		
Rock Basin		
Sediment Pond		
Rock Barrier		
Sediment Trap		

END OF SECTION

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SECTION 32 11 23

AGGREGATE BASE COURSE (ABC)

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Base course construction.
2. Incidental stone

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.
5. Section 01 70 00 – Execution and Closeout Requirements.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Aggregate Base Course:
1. Basis of Measurement: By Ton.
2. Basis of Payment: Includes supplying aggregate materials, stockpiling, hauling, placing, grading, and compacting.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
1. AASHTO M147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.
2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
3. AASHTO T27 & T11 - Standard Test Method for Gradation.
4. AASHTO T89 as Modified - Liquid Limit.
5. AASHTO T90 - Plasticity Index.
6. AASHTO T96 - Resistance to Abrasion (Percentage of Wear).
7. AASHTO T104 Using Sodium Sulfate- Soundness.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Furnish each aggregate material from single source throughout the Work.

B. Perform Work in accordance with City of Durham's Street Construction Specifications and NCDOT Specifications.

PART 2 PRODUCTS

2.1 COARSE AGGREGATE MATERIALS

A. Coarse Aggregate Type ABC: Conforming to NCDOT's standards.

GRADATION ACCEPTANCE RANGES

Sieve Size	**Percent Passing**
1 1/2 inches	98-100
1 inch	75-97
1/2 inch	55-80
No. 4	35-55
No. 10	25-45
No. 40	14-30
No. 200	4-12
Material Passing No. 10 Sieve (Soil Mortar)	
No. 40	40-80
No. 200	11-35
Material Passing No. 40 Sieve	
L.L.	0-30
P.I.	0-6

2.2 SOURCE QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Testing and inspection services.

B. Coarse Aggregate Material - Testing and Analysis: Perform in accordance with AASHTO T89 as modified, AASHTO T90, AASHTO T180, AASHTO T104, AASHTO T27 & T11.

C. When tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 BASE COURSE CONSTRUCTION

A. Aggregate base course will be used in full depth repair areas as shown it typical sections. For lift thickness up to ten (10) inches, the aggregate base course may be placed in one (1) layer. Minimum thickness of each layer of aggregate base course material shall be four (4) inches. Each layer of aggregate base course material shall be compacted to the density requirements in Section 520 of the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 Edition.

3.2 INCIDENTAL STONE

A. Aggregate base course will be placed on driveways, mailboxes, and other areas as directed by the Engineer immediately after paving and do not exceed paving operations by more than one (1) week without written notice.

END OF SECTION

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SECTION 32 12 16

ASPHALT PAVING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Price adjustment for asphalt binder
2. Asphalt concrete plant mix type.
3. Quality control and quality assurance.
4. Revisions to NCDOT specifications.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.
5. Section 01 70 00 – Execution and Closeout Requirements.
6. Section 31 22 14 – Shoulder Reconstruction.
7. Section 32 01 17 – Milling.
8. Section 32 11 23 - Aggregate Base Course.
9. Section 32 13 13 – Concrete Paving.
10. Section 32 92 91 – Seeding and Mulching.
11. Section 33 01 31 - Manhole, Valve and Meter Box Adjustments.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Asphalt Concrete Surface Course, Type S9.5B:
1. Basis of Measurement: By ton.
2. Basis of Payment: Includes tack coating surfaces, placing, compacting and rolling, testing. Includes mix design, supplying to site, testing.

B. Asphalt Binder for Plant Mix, Grade PG 64-22:
1. Basis of Measurement: There will be no direct payment for this item.
2. Basis of Payment: Includes furnishing asphalt binder, with anti-strip additive when required, at an asphalt plant and incorporating the asphalt binder and anti-strip additive into the asphalt plant mix.
3. Full compensation for this item is considered incident to the contract unit prices for the various Asphalt Concrete mix items.

C. Tack Coat:
1. Basis of Application: Apply uniformly at a rate of 0.04-0.08 gallons per square yard.
2. Basis of Payment: There will be no direct payment for this item.
Full compensation for this item is considered incident to the contract unit prices for the various Asphalt Concrete mix items.

1.3 REFERENCES

A. North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 Edition – Division 6 Asphalt Pavements.

B. North Carolina Department of Transportation's Superpave Manual.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit product information and mix design.

C. Per North Carolina Department of Transportation QMS Procedures.

D. Most recent asphalt plant approved certification.

1.5 QUALITY CONTROL AND QUALITY ASSURANCE

A. Contractor will conduct a quality control program in accordance with Article 609-5 and specifications in Section 609 of the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 edition.

B. The Department will conduct a quality assurance program in accordance with Article 609-6 and specifications in Section 609 of the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 edition, and/or as directed by the Engineer.

C. Maintain one copy of Contractor's approved Quality Control Plan on work site with Project Superintendent.

1.6 QUALIFICATIONS

A. The Contractor shall be certified by North Carolina Department of Transportation's QMS program.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. The City will allow the final asphalt surface course layer to be placed year round as long as the minimum temperature requirements listed below are met:

Asphalt Concrete Mix Type	Minimum Air Temperature	Minimum Road Surface Temperature
Asphalt Concrete Base Course	35^0 F	35^0 F
Asphalt Concrete Intermediate Course	35^0 F	35^0 F
Asphalt Concrete Surface Course	40^0 F	50^0 F

As an exception to the above, when in any day's operations the placement of a layer of asphalt base course material or intermediate course material has started, it may continue until the temperature drops to 32^0 F.

PART 2 PRODUCTS

2.1 ASPHALT BINDER CONTENT AS ASPHALT PLANT MIXES:

The approximate asphalt binder content of the asphalt concrete plant mixtures used on this project will be as follows:

Asphalt Concrete Base Course	Type B 25.0 ___	4.3%
Asphalt Concrete Intermediate Course	Type I 19.0 ___	4.7%
Asphalt Concrete Surface Course	Type S 4.75A	7.0%
Asphalt Concrete Surface Course	Type SF 9.5A	6.5%
Asphalt Concrete Surface Course	Type S 9.5 ___	6.0%
Asphalt Concrete Surface Course	Type S 12.5 ___	5.5%

2.2 ASPHALT MIXTURE PRODUCTION

A. Contractor shall utilize plants that are of the batch mixing, continuous mixing, or drum mixing type, and so designed, equipped, and operated that the weighing, proportioning, and mixing of the materials will result in a uniform and satisfactory asphalt mixture meeting the requirements of Article 610-5 and specifications in Section 610 of the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 edition.

2.3 SOURCE QUALITY CONTROL AND TESTS

A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.

B. Submit proposed mix design of each class of mix for review prior to beginning of Work.

C. Test samples in accordance with North Carolina Department of Transportation's QMS program.

PART 3 EXECUTION

3.1 HAULING OF ASPHALT MIXTURE

A. Transport mix from plant with vehicles that have tight, clean, smooth beds approved by the Department, that have been sprayed with an approved release agent material to prevent the mixture from sticking to the beds.

B. Cover load with canvas or other suitable material.

C. Provide a $^{3}/_{8}$ inch diameter hole on each side of the vehicle body near the center of the body 6 inches above the bed of the vehicle for the purpose of inserting a thermometer.

3.2 SPREADING AND FINISHING

A. Shall be done in accordance with Article 610-8 and specifications in Section 610 of the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 edition.

B. Utilize a self-contained, power propelled paver capable of spreading and finishing the asphalt mixture to the required grades, cross sections, thicknesses, and widths shown on the plans and typical sections and to uniform density and texture.

C. Do not allow the paver hopper to become empty between loads.

D. In the case of malfunction of the automatic screed control equipment, the paver may be manually operated for the remainder of the workday provided the method of operation produces acceptable results. Do not resume work thereafter until the automatic system is functional.

E. All asphalt is to be place in accordance with the sketches and Pavement Schedule noted in Appendix K.

3.3 COMPACTION

A. Immediately after the asphalt mixture has been spread, struck off, and surface and edge irregularities adjusted, thoroughly and uniformly compact the pavement. Compact the mix to the required degree of compaction for the type of mixture being placed. Several steps need to be taken prior to compaction work taking place. They are as follows:
   1. Ensure the equipment is in good condition, meets the requirements of the specifications and all safety measures; this includes working back-up alarms on equipment.
   2. Establish a roller pattern in accordance with the contract and specifications.
   3. Make sure equipment and roller pattern results in obtaining a minimum density requirement of 92% (Maximum Specific Gravity) as covered by Table 610-4

under Article 610-10 in the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 edition.

4. Should other mix types be approved for use by the Engineer, the minimum density for that particular mix shall be obtained.

3.4 ACCEPTANCE OF ASPHALT WORK AND/OR OVERLAY

A. No surface work be accepted until minimum density has been achieved and all workmanship and laydown work is acceptable.

3.5 PREPARATION - TACK COAT

A. Tack coat shall be applied in accordance with Section 605 of the North Carolina Department of Transportation Standard Specification for Roads and Structures, July 2006 edition.

3.6 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Take samples and perform tests in accordance with North Carolina Department of Transportation's QMS program.

3.7 TREE TRIMMING

A. The City of Durham has adopted a tree ordinance (Chapter 21 of the City Code). If a tree branch, limb, and etc. is prohibiting the paving operation, the Contractor will contact Kevin Lilley with the City's Urban Forestry section at (919)560-4197 ext 227. It is up to the Contractor to give the Urban Forest section enough notice in order not to delay the paving operation. The Contractor shall not have the right to file a claim if the paving operation is delayed due to tree work because it is the Contractor's responsibility to give the City enough notice to complete the work.

3.8 PROTECTION OF FINISHED WORK

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished work.

PART 4 REVISIONS TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROADS AND STRUCTURES, JULY 2006 EDITION

4.1 ASPHALT PAVEMENTS – SUPERPAVE – (7-18-06) (Rev 12-18-07)

A. Page 6-2, Article 600-9 Measurement and Payment
   1. Delete the second paragraph.

B. Page 6-12, Subarticle 609-5(C)2, Required Sampling and Testing Frequencies, first partial paragraph at the top of the page, delete last sentence and add the following:

1. If the Engineer allows the mix to remain in place, payment will be made in accordance with Article 105-3.

C. Page 6-12, Subarticle 609-5(C)2, QUALITY CONTROL MINIMUM SAMPLING AND TESTING SCHEDULE
   1. First paragraph, delete and replace with the following.
      a. Sample and test the completed mixture from each mix design per plant per year at the following minimum frequency during mix production:
   2. Second paragraph, delete the fourth sentence, and replace with the following
      a. When daily production of each mix design exceeds 100 tons and a regular scheduled full test series random sample location for that mix design does not occur during that day's production, perform at least one partial test series consisting of Items A and B in the schedule below.

D. Page 6-12, Subarticle 609-5(C)2(c) Maximum Specific Gravity, add after (AASHTO T 209):
   1. Or ASTM D 2041

E. Page 6-13, last line and on Page 6-14, Subarticle 609-5(C)(2)(e) Retained Tensile Strength, add a heading before the first paragraph as follows:
   1. (i) Option 1

   2. Insert the following immediately after the first paragraph:
      (ii) Option 2
      a. Mix sampled from truck at plant with one set of specimens prepared by the Contractor and then tested jointly by QA and QC at a mutually agreed upon lab site within the first 7 calendar days after beginning production of each new mix design.
   3. Second paragraph, delete and replace with the following:
      a. Test all TSR specimens required by either option noted above on either a recording test press or a test press that maintains the peak load reading after the specimen has broken.
   4. Subarticle 609-5(C)(3) Control Charts, delete the second sentence of the first paragraph and replace with the following:
      a. For mix incorporated into the project, record full test series data from all regularly scheduled random samples or directed samples that replace regularly scheduled random samples, on control charts the same day the test results are obtained.

F. Page 6-15, Subarticle 609-5(C)(3) Control Charts, first paragraph on this page, delete the last sentence and substitute the following:
   1. Denote the moving average control limits with a dash green line and the individual test limits with a dash red line.

G. Page 6-15, Subarticle 609-5(C)(3)(a), (b) and (c) with the following:
   1. (a) A change in the binder percentage, aggregate blend, or G_{mm} is made on the JMF, or,

(b)When the Contractor elects to stop or is required to stop production after one or two moving average values, respectively, fall outside the moving average limits as outlined in Subarticle 609-5(C)6 or,
(c) If failure to stop production after two consecutive moving averages exceed the moving average limits occurs, but production does stop at a subsequent time, reestablish a new moving average beginning at the actual production stop point.

H. Page 6-15, Subarticle 609-5(C)(4) Control Limits, replace the first paragraph and the CONTROL LIMITS Table on page 6-16 with the following.

1. The following are established as control limits for mix production. Apply the individual limits to the individual test results. Control limits for the moving average limits are based on a moving average of the last 4 data points. Apply all control limits to the applicable target source.

CONTROL LIMITS

Mix Control Criteria	Target Source	Moving Average Limit	Individual Limit
2.36 mm Sieve	JMF	+/- 4.0%	+/- 8.0%
0.075 mm Sieve	JMF	+/- 1.5 %	+/- 2.5%
Binder Content	JMF	+/- 0.3%	+/- 0.7%
VTM @ N_{des}	JMF	+/- 1.0%	+/- 2.0%
VMA @ N_{des}	Min. Spec. Limit	- 0.5%	-1.0%
$P_{0.075}$/ P_{be} Ratio	1.0	+/- 0.4%	+/- 0.8
%G_{mm} @ N_{ini}	Max. Spec. Limit	N/A	+ 2.0%
TSR	Min. Spec. Limit	N/A	- 15%

I. Page 6-16, Subarticle 609-5(C)(5) Warning Bands

1. Delete this subarticle in its entirety.

J. Pages 6-16 through 6-19, Subarticle 609-5(C)(6)

1. Delete the word “warning” and substitute the words “moving average”.

K. Page 6-16, Subarticle 609-5(C)(6) Corrective Actions, first paragraph, first sentence, delete and replace with the following:

1. Immediately notify the Engineer when moving averages exceed the moving average limits.

L. Page 6-17, third full paragraph, delete and replace with the following:

1. Failure to stop production when required due to an individual mix test not meeting the specified requirements will subject all mix from the stop point tonnage to the point when the next individual test is back on or within the moving average limits, or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable.

M. Page 6-17, Sixth full paragraph, delete the first, second, and third sentence and replace with the following:

1. Immediately notify the Engineer when any moving average value exceeds the moving average limit. If two consecutive moving average values for any one of the mix control criteria fall outside the moving average limits, cease production of that mix, immediately notify the Engineer of the stoppage, and make adjustments. The Contractor may elect to stop production after only one moving average value falls outside the moving average limits.

N. Page 6-18, Subarticle 609-5(C)(6) Corrective Actions second full paragraph, delete and replace with the following:

1. If the process adjustment improves the property in question such that the moving average after four additional tests is on or within the moving average limits, the Contractor may continue production with no reduction in payment.

O. Page 6-18, delete the third and fourth full paragraphs, including the Table for Payment for Mix Produced in the Warning Bands and substitute the following:

1. If the adjustment does not improve the property in question such that the moving average after four additional individual tests is outside the moving average limits, the mix will be evaluated for acceptance in accordance with Article 105-3. Reduced payment for or removal of the mix in question will be applied starting from the plant sample tonnage at the stop point to the sample tonnage when the moving average is on or within the moving average limits. In addition, any mix that is obviously unacceptable will be rejected for use in the work.

P. Page 6-19, First paragraph, delete and replace with the following:

1. Failure to stop production and make adjustments when required due to two consecutive moving average values falling outside the moving average limits will subject all mix produced from the stop point tonnage point when the moving average is back on or within the moving average limits or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable. Remove this material and replaced with materials which comply with the Specifications at no additional costs to the Department, unless otherwise approved. Payment will be made for the actual quantities of materials required to replace the removed quantities, not to exceed the original amounts.

Q. Page 6-20, Subarticle 609-5(D)(1) General, delete the third full paragraph, and replace with the following:

1. Perform the sampling and testing at the minimum test frequencies as specified above. Should the density testing frequency fail to meet the minimum frequency as specified above, all mix without the required density test representation will be considered unsatisfactory. If the Engineer allows the mix to remain in place, payment will be made in accordance with Article 105-3.

R. Page 6-23, Subarticle 609-5(D)(5) Limited Production Procedure, delete the first paragraph including (a), (b), (c) and substitute the following:

1. Proceed on limited production when, for the same mix type and on the same contract, one of the following conditions occur (except as noted in the first paragraph below).
   a. Two consecutive failing lots, except on resurfacing*
   b. Three consecutive failing lots on resurfacing*
   c. Two consecutive failing nuclear control strips.

   *Resurfacing is defined as the first new uniform layer place on an existing pavement.

S. Page 6-28, Subarticle 610-3(A) Mix Design-General, fourth paragraph, third sentence:

1. Substitute 20% for 15%.

Fifth paragraph, first, second and third sentences:

2. Substitute 20% for 15%.

T. Page 6-28, Subarticle 610-3(A) Mix Design-General, add the following as the fourth paragraph:

1. Reclaimed Asphalt Pavement (RAP) or Reclaimed Asphalt Shingles (RAS) may be incorporated into asphalt plant mixes in accordance with Article 1012-1 and the following applicable requirements.

U. Page 6-44, Article 610-8 Spreading and Finishing, third full paragraph, replace the first sentence with the following:

1. Use the 30 foot minimum length mobile grade reference system or the non-contacting laser or sonar type ski with at least four referencing stations mounted on the paver at a minimum length of 24 feet to control the longitudinal profile when placing the initial lanes and all adjacent lanes of all layers, including resurfacing and asphalt in-lays, unless otherwise specified.

V. Page 6-50, Article 610-13 Density Acceptance, delete the second paragraph and replace with the following:

1. As an exception, when the first layer of mix is a surface course and is being placed directly on an unprimed aggregate or soil base, the layer will be included in the “Other” construction category.

W. Page 6-53, Article 620-4 Measurement and Payment

1. Sixth paragraph, delete the last sentence.

X. Page 10-43 through 10-45, Subarticle 1012-1(G), delete this in its entirety and replace with the following:

1. (G) Reclaimed Asphalt Pavement (RAP)
   1) Mix Design RAP

      Incorporate RAP from stockpiles or other sources that have been tested for uniformity of gradation and binder content prior to use in an asphalt mix design. Use reclaimed asphalt pavement that meets all requirements specified for one of the following two classifications.

a) Millings
Existing reclaimed asphalt pavement (RAP) that is removed from its original location by a milling process as specified in Section 607. Millings should be such that it has a uniform gradation and binder content and all materials will pass a 2” sieve prior to introduction into the plant mixer unit.

b) Processed RAP
RAP that is processed in some manner (possibly by crushing and/or use of a blending method) to produce a uniform gradation and binder content in the RAP prior to use in a recycled mix. Process RAP so that all materials have a uniform gradation and binder content and will pass a 2” sieve prior to introduction into the plant mixer unit.

2) Mix Production RAP
During mix production use RAP that meets the criteria for one of the following categories:

a) Mix Design RAP
RAP contained in the mix design stockpiles as described above may be used in all applicable JMFs. These stockpiles have been pretested: however, they are subject to required QC/QA testing in accordance with Subarticle 609-5(C)(2).

b) New Source RAP
New Source RAP is defined as any acceptable material which was not included in the stockpile or other source when samples were taken for mix design purposes. Process new source RAP so that all materials have a uniform gradation and binder content and will pass a 2” sieve prior to introduction into the plant mixer unit.

After a stockpile of processed RAP or millings has been sampled and mix designs made from these samples, do not add new source RAP to the original stockpile without prior field testing to insure gradation and binder uniformity. Sample and test new source RAP before blending with the existing stockpile.

Store new source RAP in a separate stockpile until the material can be sampled and tested for comparison with the original recycled mix design data. New source RAP may also be placed against the existing stockpile in a linear manner provided it is sampled for mix design conformity prior to its use in the recycled mix.

Unprocessed RAP is asphalt material that was not milled and/or has not been processed to obtain a uniform

gradation and binder content and is not representative of the RAP used during the applicable mix design. Unprocessed RAP shall not be incorporated into any JMFs prior to processing. Different sources of unprocessed RAP may be stockpiled together provided it is generally free of contamination and will be processed prior to use in a recycled mix. RAP contamination in the form of excessive dirt, debris, clean stone, concrete, etc. will not be allowed. Incidental amounts of dirt, concrete, and clean stone may be acceptable. Unprocessed RAP may be processed and then classified as a new source RAP as described above.

Field approval of new source RAP will be based on Table 1012-2 below and volumetric mix properties on the mix with the new source RAP included. Provided the Table 1012-2 tolerances are met, volumetric properties of the new mix will then be performed. If all volumetric mix properties meet the mix design criteria for that mix type, the new source RAP may continue to be used.

If the gradation, binder content, or any of the volumetric mix properties are not within the allowable tolerances of Table 1012-2, do not use the new source RAP unless approved by the Engineer. The Contractor may elect to either not use the stockpile, to request an adjustment to the JMF, or to redesign the mix.

TABLE 1012-2

NEW SOURCE RAP GRADATION and BINDER TOLERANCES

(Apply Tolerances to Mix Design Data)

Mix Type	0 – 20% RAP			20^+ - 25% RAP			25^+% RAP		
Sieve (mm)	Base	Inter.	Surf.	Base	Inter.	Surf.	Base	Inter.	Surf.
P_b%	+/- 0.7%			+/- 0.4%			+/- 0.3%		
25.0	+/- 10	-	-	+/- 7	-	-	+/- 5		-
19.0	+/- 10	+/- 10	-	+/- 7	+/- 7	-	+/- 5	+/- 5	-
12.5	-	+/- 10	+/- 6	-	+/- 7	+/- 3	-	+/- 5	+/- 2
9.5	-	-	+/- 8	-	-	+/- 5	-	-	+/- 4
4.75	+/- 10	-	+/- 10	+/- 7	-	+/- 7	+/- 5	-	+/- 5
2.36	+/- 8	+/- 8	+/- 8	+/- 5	+/- 5	+/- 5	+/- 4	+/- 4	+/- 4
1.18	+/- 8	+/- 8	+/- 8	+/- 5	+/- 5	+/- 5	+/- 4	+/- 4	+/- 4
0.300	+/- 8	+/- 8	+/- 8	+/- 5	+/- 5	+/- 5	+/- 4	+/- 4	+/- 4
0.150	-	-	+/- 8	-	-	+/- 5	-	-	+/- 4
0.075	+/- 4	+/- 4	+/- 4	+/- 2	+/- 2	+/- 2	+/- 1.5	+/- 1.5	+/- 1.5

END OF SECTION

SECTION 32 13 13

CONCRETE PAVING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Concrete curb and gutter.
2. Concrete sidewalks and driveways

B. Concrete sidewalk or driveway. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.
5. Section 01 70 00 – Execution and Closeout Requirements.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Concrete Curb and Gutter:
1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes new materials, aggregate base course, placing all concrete, excavating, backfilling, forming, finishing, constructing, joint filler, and sealing of joints, and all incidentals necessary to complete work.

B. Remove Concrete Curb and Gutter
1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes removal and disposal of old curb and gutter, and all incidentals necessary to complete work.

C. Concrete Sidewalks and Driveways or Aprons:
1. Basis of Measurement: By square yard.
2. Basis of Payment: Basis of Payment: Includes new materials, aggregate base course, placing all concrete, excavating, backfilling, forming, finishing, constructing, joint filler, and sealing of joints, and all incidentals necessary to complete work

D. Remove Concrete Sidewalk or Driveway
1. Basis of Measurement: By square yard.
2. Basis of Payment: Includes removal and disposal of old sidewalk and driveway, and all incidentals necessary to complete work.

E. Sawing Concrete
1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes sawing of concrete and all incidentals necessary to complete work.

F. Remove Granite Curb and Stockpile: By linear foot.
   1. Includes removal and stockpiling of granite onsite.

1.3 REFERENCES

A. City of Durham's Street Construction Specifications

B. North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition.

C. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

D. ASTM International:
   1. ASTM A185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
   2. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
   3. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
   4. ASTM C33 - Standard Specification for Concrete Aggregates.
   5. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
   6. ASTM C150 - Standard Specification for Portland Cement.
   7. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
   8. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
   9. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
   10. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
   11. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
   12. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

1.4 PERFORMANCE REQUIREMENTS

A. Concrete curb and gutter and concrete driveways shall meet the construction requirements as outlined in City of Durham's Street Construction Specifications and in North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data for concrete mix design, joint filler, joint sealer, & curing compounds that are on North Carolina Department of Transportation preapproved list.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with City of Durham's Street Construction Specifications and North Carolina Department of Transportation's standards.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather: Do not place concrete if any of the following conditions exist:
1. When temperature during the preceding 24 hours has not risen above 40 deg. F.
2. Temperature has not reached 40 deg. F. by 10:00 A.M.
3. When the subgrade is frozen or contains frozen particles.
4. When temperature is falling and reaches 40 deg. F.
5. When local weather reports or conditions indicate the possibility of temperatures of 32 deg. F. or lower within the ensuing 24 hours.

B. Hot Weather: When anticipated daily high temperature is above 80 degrees F, place concrete at coolest temperature practical.

C. Rain: Failure to properly protect unhardened concrete may constitute cause for removal and replacement of damaged concrete at no cost to the Department.

PART 2 PRODUCTS

2.1 FORM MATERIALS

A. Form materials shall meet the requirements as described in City of Durham's Street Construction Specifications and in North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition.

B. Joint Filler: nonbituminous type joint filler that meets AASHTO M153 for type I, II, III, or a bituminous type that meets AASHTO M213.

2.2 CONCRETE MIX REQUIREMENTS

A. Concrete shall be Class A Concrete, 3000 psi and shall meet the requirements in City of Durham's Street Construction Specifications, & North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition, Section 1000.

B. Provide North Carolina Department of Transportation approved concrete mix design prior to work in accordance with Section 01 33 00 submittal procedures

2.3 ACCESSORIES

A. Liquid Membrane Curing Compounds: Shall meet the requirements of AASHTO M148, except when tested in the water retention test described in AASHTO T155. The curing compound shall restrict the loss of water in the test specimen at the time of application of the compound to not more than 0.007ounces per square inch. The curing compound shall be Type 2, white pigmented, except the where clear type is required for a particular application; the curing compound shall be Type 1D, clear or translucent with fugitive dye.

B. Joint Sealers:
   1. Hot applied Joint Sealer: Shall meet the requirements of ASTM D 6690.
   2. Low Modulus Silicone Sealant: Cold applied, single component, chemically curing low modulus silicone sealant that meets ASTM D 5893, ASTM D 903, and ASTM C 719.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verification of existing conditions before starting work.

B. Verify subgrade has been acceptable compacted.

C. Verify subgrade has been graded to within acceptable tolerance.

3.2 PREPARATION

A. Moisten base to minimize absorption of water from fresh concrete.

B. Coat surfaces of manhole, catch basin frames with oil to prevent bond with concrete pavement.

C. Notify Architect/Engineer minimum 24 hours prior to commencement of concreting operations.

3.3 FORMING

A. Place and secure forms to correct location, dimension, profile, and gradient.

B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.4 PLACING CONCRETE

A. Place concrete in accordance with City of Durham's Street Construction Specifications and North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition.

B. Concrete may be placed using slip form technique.

C. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.

D. Place concrete continuously over the full width of the panel and between predetermined construction joints. [Do not break or interrupt successive pours such that cold joints occur.]

3.5 JOINTS

A. Place contraction joints at 10 foot intervals. Align curb, gutter, and sidewalk joints.

B. Place expansion joints at 90 foot intervals. Also place expansion joints at driveways, drainage structures and cold joints.

3.6 FINISHING

A. Curb and Gutter – light broom parallel to curb line.

B. Sidewalks and Driveways – light broom transverse direction to traffic.

3.7 JOINT SEALING

A. Separate concrete from vertical surfaces with 1/2inch thick joint filler.

B. Extend joint filler from bottom of pavement to within 1/2 of finished surface.

C. Entirely fill contraction and expansion joints to within 1/8 to ¼ inch of the surface of the concrete with joint sealer. Place joint sealer prior to backfilling concrete.

3.8 TOLERANCES

A. Maximum Variation of Surface Flatness: 1/4 inch in 10 feet.

B. Maximum Variation From True Position: 1/4inch.

3.9 FIELD QUALITY CONTROL

A. An Engineering firm hired by the City of Durham will perform concrete testing in accordance with City requirements.

3.10 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.

B. Do not permit vehicular traffic over pavement for 7 days minimum after finishing.

C. Do not place backfill material until least 3 curing days after finishing.

END OF SECTION

SECTION 32 92 19

SEEDING AND MULCHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Permanent Seeding.
      a. Description.
         1) Type I (residential area)
         2) Type II (non-residential area).
      b. Seeding.
      c. Limestone.
      d. Hydroseeding.
      e. Mulching
      f. Mating for Erosion Control
      g. Maintenance.

B. Related Sections:
   1. Section 01 20 00 – Price and Payment Procedures.
   2. Section 01 33 00 - Submittal Procedures.
   3. Section 01 40 00 - Quality Requirements.
   4. Section 01 60 00 - Product Requirements.
   5. Section 01 70 00 – Execution and Closeout Requirements.
   6. Section 31 22 14 – Shoulder Reconstruction

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Seeding and Mulching:
   1. Basis of Measurement: By square yard.
   2. Basis of Payment: Includes soil conditioning, seedbed preparation, furnishing seed, fertilizer, limestone, straw for mulching, and maintenance.

B. Mulching for tree protection (4” – 6” depth)
   1. Basis of Measurement: By square yard.
   2. Basis of Payment: Includes furnishing materials and placement..

1.3 REFERENCES

A. City of Durham’s Street Construction Specifications

B. NCDOT Specifications.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data for soil conditioners, seed mix, lime, fertilizer, mulch, and other accessories.

C. Manufacturer's Certificate: Certify seed meets or exceeds specified requirements, provide seed certificate.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

1.6 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

B. Perform Work in accordance with the City of Durham's Street Construction Specifications and NCDOT Specifications.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.

C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 PRODUCTS

2.1 SEED MIXTURE

A. ALL RATES ARE IN POUNDS PER 100 SQUARE YARDS.

Aug. 15 – Oct. 30

Feb. 15 – June 15	Nov. 1 – Feb. 16
5.5 lbs. Fescue	5.5 lbs. Fescue
20 lbs. 10-10-10 Fertilizer	2 lbs. Rye
25 lbs. 8-8-8 Fertilizer	20 lbs. Fertilizer
70 lbs. Limestone	25 lbs. Fertilizer
	70 lbs. Limestone

2.2 ACCESSORIES

A. The Contractor shall furnish equipment, limestone, fertilizer, seed and mulching materials in accordance with this Section. Engineer shall approve all equipment and materials prior to starting this operation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting Work.

B. Verify prepared soil base is ready to receive the Work of this section.

3.2 PERMANENT SEEDING

A. Description: Seeding and mulching is to be performed according with City of Durham's Street Construction Specifications and North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition, Section 1660, with the following special provisions. Seeding and mulching shall be done on all earth areas disturbed by construction or as designated by the Engineer. A grass cover shall be established as soon as possible. In order to prevent excessive soil erosion and siltation, the Contractor shall perform seeding and mulching work within fourteen (14) calendar days as each shoulder reconstruction area is completed unless the Engineer approved a specific permissible length of delay due to circumstances beyond the control of the Contractor. Special attention is called to the portion of Section 1660-4 of North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition, dealing with seedbed preparation. This project consists primarily of Type I (for residential yards).

1. Type I (residential area): seeding and mulching consists of loosening the soil by scarifying or other method to a depth of not less than 5 inches except as otherwise provided in Section 1660-4 in North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition or directed by the Engineer. Clods shall be broken and the top 2 to 3 inches of soil shall be worked into an acceptable seed bed by the use of soil pulverizers, drags, or harrows; or by other methods approved by the Engineer. All rock and debris 1 inch or larger shall be removed on cut or fill slopes which are 3:1 or flatter, medians, shoulders, and ditch slopes prior to the application of seed and fertilizer. Type I seeding and mulching will be required in all residential areas.
2. Type II (non-residential area): seeding and mulching consists of loosening the soil by scarifying or other method to a depth of not less than 5 inches except as otherwise provided in Section 1660-4 in North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition or directed by the Engineer. Clods shall be broken and the top 2 to 3 inches of soil shall be worked into an acceptable seed bed by the use of soil pulverizers, drags, or harrows; or by other methods approved by the Engineer. All rock and debris 3

inch or larger shall be removed on cut or fill slopes which are 3:1 or flatter, medians, shoulders, and ditch slopes prior to the application of seed and fertilizer. Type II seeding and mulching may be required in non-residential areas.

B. Seeding: Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Apply seed per the rates of the approved permanent seeding application. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not allowed.

Apply seed at the recommended rate evenly in two intersecting directions. Do not seed areas in excess of that which can be mulched on same day. Do not sow immediately following rain, when ground is too dry, or when winds are over 12 mph.

Small grains should be planted no more than one (1) inch deep, and grasses and legumes no more than one-half (1/2) inch deep. Broadcast seed must be covered by raking or chain dragging and then lightly firmed with a roller or cultipacker.

C. Limestone: Shall contain not less than 85% of calcium and magnesium carbonates and shall conform to the following minimum screening standards. 100% must pass through U.S. standard 10 mesh screen, and 40% must pass through U.S. standard 100 mesh screen.

D. Hydroseeding: Hydroseeding will not be permitted on slopes flatter than 2:1. Do not mix seed and fertilizer more than thirty (30) minutes before applications. Hydroseeded mixtures should include wood fiber (cellulose) mulch. Rate of wood fiber (cellulose) application shall be 2,000 lb/acre (minimum).

E. Mulching: Mulch shall be spread uniformly over the area by hand or by means of appropriate mechanical spreaders or blowers to obtain a 75% ground cover. It is the intent of this specification that satisfactory application shall allow some sunlight to penetrate and air to circulate, but also partially shade the ground, reduces erosion and conserve soil moisture. Care shall be exercised to prevent displacement of soil or seed or other damage to the seeded area during mulching operations. No seeded areas shall be allowed to remain for more than twenty-four (24) hours without mulching having been completed.

The Contractor will be required to take sufficient precautions, approved by the Engineer or Inspector, to prevent mulch entering catch basins or pipelines through displacement by wind, water, or other causes. The Contractor shall apply 150 gallons per acre of asphalt tack to insure that the mulch is properly held in place. The Contractor can use a “crimper” to stabilize the mulching instead of asphalt tack.

In the application of fertilizer in seeding operations, or in the application of asphalt materials during mulching operations, adequate precautions shall be taken to prevent damage to traffic, traffic signs, curb and gutter, or any other concrete or metal structures. Such structures shall be adequately covered or application methods changed so as to avoid damage. Where any damage occurs as a result of the Contractor’s failure to take adequate precautions, the Contractor will be required to repair such damage including any cleaning that may be necessary before final acceptance of the work will be made.

F. Matting for Erosion Control: Erosion control matting will be used in areas as directed by the Engineer to minimize soil erosion and siltation. When directed, the matting shall be done as follows:

1. Placed immediately following seeding.
   a. The surface shall be smooth and free from stones, clods, or debris which will prevent the contact of the matting with the soil. Care shall be taken to preserve the required line, grade, and cross section to the area covered.
   b. Matting shall be unrolled in the direction of the flow of water, and shall be applied without stretching so that it will lie smoothly but loosely on the soil surface. The up-channel or top of slope end of each piece of matting shall be buried in a narrow trench at least 5 inches deep and tamped firmly. After the end of the matting is buried, the trench shall be closed and tamped firmly. Where one roll of matting ends and a second roll begins, the end of the upper roll shall be brought over the buried end of the second roll so that there will be a 6 inch overlap. Check slots shall be constructed at each 50 feet longitudinally in the matting or as directed by the Engineer. These slots shall be narrow trenches at least 12 inches deep. The matting shall be folded over and buried to the full depth of the trench, after which the trench shall be closed and firmly tamped. Where 2 or more widths of matting are laid side by side, the overlap shall be at least 4 inches.
   c. Staples shall be placed across the matting at ends, junctions, and check slots and shall be placed 10 inches apart. Staples shall also be placed along the outer edge and down the center of each strip of matting and shall be spaced 3 feet apart. Staples shall be placed along all lapped edges 2 to 3 feet apart.
   d. Excelsior matting shall be installed with the fabric on the top side.
2. Payment for matting: There will be no direct payment for this item.
   Full compensation for this item is considered incident to the contract unit price for Seeding & Mulching (Type I).

G. Maintenance: Once an area has been seeded and mulched, the Contractor is required to take adequate precautions to insure that all future construction operations do not damage these areas. No payment will be made for repairs of any kind that are due to negligence of the Contractor.

Immediately reseed and mulch areas where seedling emergence is poor, or where erosion occurs. Maintain per the recommendations of the approved permanent seeding application. No payment will be made for reseeding and re-mulching because it is the responsible of the Contractor to get adequate grass cover.

If the Engineer determines a stand of permanent seeding to be inadequate, the Contractor shall reestablish the stand at no cost to the City. The Engineer shall approve the application of any materials (including seeding mix, soil conditioners, lime, fertilizer, mulch, etc.) utilized for reestablishing a stand of permanent seeding.

END OF SECTION

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SECTION 33 01 31

MANHOLE, VALVE AND METER BOX ADJUSTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Raising manhole and water valve frames and covers.
2. Replacing damaged manhole and water valve frames and covers.
3. Concrete Requirements.

B. Related Sections:
1. Section 01 20 00 – Price and Payment Procedures.
2. Section 01 33 00 - Submittal Procedures.
3. Section 01 40 00 - Quality Requirements.
4. Section 01 60 00 - Product Requirements.
5. Section 01 70 00 – Execution and Closeout Requirements.
6. Section 32 12 16 - Asphalt Paving.
7. Section 32 92 19 - Seeding and Mulching.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Manhole Adjustments and Water Valve Frames and Covers:
1. Basis of Measurement:
   a. Manhole Adjustment per each
   b. Valve and Meter Box Adjustment per each
   c. Sewer Service Cleanout Adjustment per each
2. Basis of Payment: Includes but is not limited to excavation and backfilling, removal and disposal of a portion of the existing structure, brick masonry, mortar, grout, concrete, reinforcing steel, fittings, furnishings and hauling asphalt plant mix and any other materials, and placing, maintaining, painting, removing, and exchanging damaged frames and covers with the City and installing and disposing of asphalt padding (traffic ramps) if necessary.

1.3 REFERENCES

A. City of Durham Street Construction Specifications, March 1991, and Water & Sewer Construction Specifications, September 1994.

B. North Carolina Department of Transportation Standard Specification for Roads & Structures, July 2006 edition.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit NCDOT approved mix and/or mixes for concrete to be used in the adjustments in accordance with Section - 01 33 00 – Submittal Procedures.

C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record location of manhole or water valve adjustments.

1.6 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.

B. Contractor Project Manager shall provide a one-week look-ahead schedule that includes planned adjustments to the Lead Inspector and City Project Engineer.

PART 2 PRODUCTS

2.1 MANHOLE, VALVE AND METER BOX FRAMES AND COVERS

A. Existing frames and covers are to be re-used.

B. Damaged frames and covers shall be exchanged with the City. Inspection staff will assist in coordinating the exchange. Damaged frames and covers are to be delivered when picking up replacements.

2.2 CONCRETE REQUIREMENTS

A. Concrete shall be Class A Concrete, 3000 psi and shall meet the requirements in City of Durham’s Street Construction Specifications, & North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2006 edition, Section 1000.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify and locate manholes requiring grade adjustment.

3.2 RAISING MANHOLE, VALVE AND METER BOX FRAMES AND COVERS

A. Adjustments may only be made a maximum of two (2) weeks in advance of resurfacing

B. Locate and raise manholes, valves and meter boxes to match the resurfacing of street.

C. Follow Detail A-1 in Appendix A and Detail B-2 in Appendix B of the City of Durham Water & Sewer Specifications during adjustments.

D. Perform work in accordance with Section 858 of the North Carolina Department of Transportation Standard Specification for Roads & Structures, July 2006 edition.

E. The use of cast iron or steel fittings to adjust manholes will not be permitted on this project except where it is considered by the Engineer to be in the best interest of the City to allow rings to be used. When rings are permitted for the adjustment of manholes, the rings shall have satisfactory bearing on the existing manhole frames and 50 % of the circumference shall be tack welded at four equally spaced locations as directed by the Engineer. If the existing covers do not fit the rings, furnish and install new covers at no additional expense to the City.

3.3 ASPHALT PADDING OF ADJUSTMENTS AND COST

A. Adjustments made more than three (3) days in advance of resurfacing must be padded with asphalt in accordance with Section 858-3, paragraph 4 of the North Carolina Department of Transportation Standard Specification for Roads & Structures, July 2006 edition.

B. Adjustments made three (3) days or less does not require asphalt padding.

C. The Engineer may waive the installation of padding at his/her discretion on a street by street basis.

D. Placement, removal and disposal of asphalt padding around manholes, valves and meter boxes are considered incidental to the cost of the adjustment.

3.4 PAINTING ADJUSTMENTS AND COST

A. All adjustments not padded must have the vertical rim spray painted with orange paint to make them visible to the motorist. Only the exposed vertical rim requires painting. The horizontal surface of the manhole or valve cover does not need to be painted.

B. Painting is required at the time of the adjustment, prior to traffic being allowed to drive over to adjustment.

C. Painting the vertical rim is incidental to the cost of the adjustment.

3.5 LANDSCAPING RESTORATION

A. Restore grassed areas in accordance with Section 32 92 19.

END OF SECTION

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SECTION 33 41 00

STORM UTILITY DRAINAGE PIPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Storm drainage piping.
2. Accessories.
3. Stone Bedding for RCP No. 57
4. 15 Inch RCP
5. 18 Inch RCP
6. 24 Inch RCP
7. 24 Inch Flared End Section
8. Storm Sewer Manhole
9. Existing OC Box Adjustment
10. 4 Inch PVC Drain Pipe
11. 4 Inch Plastic Underdrain (solid or perf.)
12. Remove Existing Pipe (12” & up)
13. Remove Existing Catch Basin or Manhole

B. Related Sections:
1. Section 31 05 13 - Soils for Earthwork: Soils for backfill in trenches.
2. Section 31 05 16 - Aggregates for Earthwork: Aggregate for backfill in trenches.
3. Section 31 23 16 - Excavation: Product and execution requirements for excavation and backfill required by this section.
4. Section 31 23 17 - Trenching: Execution requirements for trenching required by this section.
5. Section 31 23 23 - Fill: Requirements for backfill to be placed by this section.

1.2 UNIT PRICE - BASIS OF MEASUREMENT

A. Stone Bedding for RCP No. 57
1. Basis of Measurement: By the Ton
2. Basis of Payment: Includes excavating, furnishing, hauling, placing, shaping stone, and etc. as needed during the installation of storm drain pipe as directed by the Engineer.

B. 12 Inch RCP:
1. Basis of Measurement:
a. 12 Inch RCP (0 – 6 Feet) By the Linear Foot.
b. 12 Inch RCP (6 – 8 Feet) By the Linear Foot.
2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

C. 15 Inch RCP:
   1. Basis of Measurement:
      a. 15 Inch RCP (0 – 6 Feet) By the Linear Foot.
      b. 15 Inch RCP (6 – 8 Feet) By the Linear Foot.
   2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

D. 18 Inch RCP:
   1. Basis of Measurement:
      a. 18 Inch RCP (0 – 6 Feet) By the Linear Foot.
      b. 18 Inch RCP (6 – 8 Feet) By the Linear Foot.
   2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

E. 24 Inch RCP:
   1. Basis of Measurement:
      a. 24 Inch RCP (0 – 6 Feet) By the Linear Foot.
      b. 24 Inch RCP (6 – 8 Feet) By the Linear Foot.
   2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

F. 24 Inch Flared End Section
   1. Basis of Measurement: By Each
   2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

G. Storm Sewer Manhole
   1. Basis of Measurement:
      a. Storm Sewer Manhole Complete (0 – 4 Feet) By Each.
      b. Extra Depth Catch Basin & Storm Sewer Manhole (6 inch Increments) By Each.
      c. Existing Manhole Adjustment (6 Inch Increments) By Each.
   2. Basis of Payment: Includes concrete, brick masonry, block masonry, precast units, mortar, grout, reinforcing steel, hardware, excavating, removal, bedding, backfilling and etc. as needed to install catch basin & adjustments; storm sewer manhole & adjustments as directed by the Engineer.

H. Existing OC Box Adjustment
   1. Basis of Measurement: By Each
   2. Basis of Payment: Includes excavating, removal, adjusting, backfilling, and etc. as needed to complete the work as directed by the Engineer.

I. 4 Inch PVC Drain Pipe
   1. Basis of Measurement: By the Linear Foot

2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

J. 4 Inch Plastic Underdrain (solid or perf.)
1. Basis of Measurement: By the Linear Foot
2. Basis of Payment: Includes furnishing, hauling, placing, making joint connections, excavating, backfilling, and cleaning out pipe, & etc. as needed to complete the work as directed by the Engineer.

K. Removing Existing Pipe (12” & up)
1. Basis of Measurement: By the Linear Foot
2. Basis of Payment: Includes removing pipe, hauling pipe, proper disposal of pipe, excavation, backfilling, & etc. as needed to complete the work as directed by the Engineer.

L. Removing Existing Catch Basin or Manhole
1. Basis of Measurement: By Each
2. Basis of Payment: Includes removing catch basin or manhole, proper disposal of catch basin or manhole, excavation, backfilling, & etc. as needed to complete the work as directed by the Engineer.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
2. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
3. ASTM C14M - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe (Metric).
4. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
5. ASTM C76M - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (Metric).
6. ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
7. ASTM C443M - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets (Metric).
8. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
9. ASTM C924 - Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method.
10. ASTM C969 - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.

11. ASTM C969M - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines (Metric).
12. ASTM C1103 - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
13. ASTM C1103M - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines (Metric).
14. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
15. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft3 (2,700 kN-m/m3)).
16. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
17. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
18. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
19. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
20. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
21. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
22. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
23. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
24. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
25. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data indicating pipe, and pipe accessories.

C. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout: Requirements for submittals.

B. Project Record Documents:
1. Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.

2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with City of Durham Street Construction Specifications.

B. Maintain [one copy] of [each] document on site.

1.7 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum [one] week prior to commencing work of this section if necessary at the direction of the Engineer.

1.8 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate the Work with termination of storm sewer connection to many related system.

PART 2 PRODUCTS

2.1 STORM DRAINAGE PIPING AND ASSESORIES

A. Reinforced Concrete Pipe per the City of Durham Street Construction Specifications.

B. Reinforced Concrete Pipe per the NCDOT Specifications.

C. All material shall be tested and approved by NCDOT.

D. Precast structures will be allowed and shall be tested and approved by NCDOT.

E. Knockout/waffle structures will not be allowed to be used on City of Durham projects.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.2 PROTECTION OF FINISHED WORK

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished Work.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.
   1. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations.
   2. Repair or replace pipe that is damaged or displaced from construction operations.

END OF SECTION

THERMOPLASTIC PAVEMENT MARKING MATERIALS

I. GENERAL

A. This specification covers machine applied hot Alkyd/Maelic Thermoplastic Pavment Marking Material with both incorporated (pre-mixed) glass beads and drop-on glass beads. The thermoplastic material for hot Alkyd/Maelic applications shall consist of homogeneously composed pigments, fillers, resins, and glass reflecting spheres. It is the intent of these specifications to describe the general and specific requirements for reflective pavement marking thermoplastic (a spray/ribbon extrude mix), to be used by the City of Durham, North Carolina in its pavement marking program. Bidder shall conform to material specifications and qualifications in Section 1205 of the current edition of the N.C. Department of Transportation Standard Specifications for Roads and Structures.

B. UNIT PRICE AND PAYMENT
1. Striping Removal: By linear foot.
2. Pedestrian Crosswalk Striping – Standard 8” Strip: By linear foot
3. Pedestrian Crosswalk Striping – High Visibility 24” Strip: By linear foot

II. SAMPLING AND TESTING

The methods of sampling and testing all materials and products covered by this contract shall be in accordance with the latest standards of the American Society for Testing Materials, the federal government, or of other recognized standardizing agencies as indicated for each material. Materials used in this contract may be sampled and tested by the City of Durham using the indicated standards and methods to determine conformance with specification requirements. An adequate size sample of material shall be extracted at random from each production batch. The City of Durham reserves the right to inspect and accept the material either at the destination or at the point of manufacture. In either case, the manufacturer shall furnish whatever samples and formulas are required to ascertain that the finished material complies with specifications. Any material not meeting the specifications shall be replaced with satisfactory material, at no additional cost to the City of Durham, and all handling and transportation charges for such replacement shall be paid by the manufacturer.

III. CERTIFICATION REQUIRED

Certificate of Compliance.
The manufacturer shall submit for each batch a Certificate of Compliance on the form provided by the City of Durham (Form TPCC-1.1), certifying that the material meets all of the requirements in this specification.

B. Statement of Characteristics.
The manufacturer shall submit with each batch a Statement of Characteristics on the forms provided by the City of Durham (Form TPSC-1.1 and Form GBSC-1.1), giving all of the information requested, except that which is proprietary. This statement shall be for confidential use of the City of Durham, and the information therein will not be revealed by the City of Durham, but will serve and assist in identifying and testing materials furnished.

IV. THERMOPLASTIC MARKING MATERIAL

A. Type of Material
This specification covers thermoplastic pavement marking materials suitable for use as reflective pavement marking on bituminous pavement, as well as concrete pavements. The materials shall be manufactured for application by ribbon extrusion method onto the pavement in molten form, with glass beads mixed in and also dropped into the material immediately after it is applied.

B. General Characteristics
The compound shall resist deteriorization by contact with sodium chloride, calcium chloride or other chemicals used to prevent ice on roadways, or because of the oil content of the pavement materials from oil droppings or other effects of traffic. In the plastic state, materials shall be free from fumes which are toxic or otherwise injurious to persons or property. The material shall withstand deteriorization if held at the plastic temperature for a period of four hours, or by reason of three reheatings to the plastic temperature. The temperature versus viscosity characteristics of the plastic material shall remain constant up through three reheatings, and shall be the same from batch to batch. The color shall be stable for at least three reheatings and between batches. To insure the best possible adhesion, the compound, as specified, shall be installed in a molten state at the temperature recommended by the manufacturer, and the material shall retain its color for a minimum of four hours.

C. Foreign Matter
The binder shall consist of a homogeneous mixture of pigment, filler, resins and reflectorizing glass spheres. The resins shall Alkyd/Maleic based, which shall be made up of a mixture of synthetic resins at the discretion of the manufacturer, however, at least one synthetic resin shall be solid at room temperature and at high boiling point plasticizers. At least one – third of the binder composition shall be 100% solid maleic-modified glyceryl ester resin and shall be no less than 10% by weight of the entire material formulation. The binder shall contain no petroleum based hydrocarbon resins. The pigmented binder shall be well dispersed and free from all skins, dirt, foreign objects or such ingredients as will cause bleeding, staining or discoloration. The filler shall be a white calcium carbonate silica or equivalent, with a compressive strength of 5,000 psi (34.5 MPa).

D. Composition:
Binder 18.0% min.
Glass Beads 30.0% min.
Calcium Carbonate & Inert fillers 50.0% max.
Titanium Dioxide (White only) 10%
Yellow pigment See note
Note: The amount of yellow pigment, calcium carbonate, and inert fillers shall be at the discretion of the manufacturer, providing all other requirements of the specification are met.

E. Suitability for Application
The thermoplastic material shall be a product especially compounded for traffic markings. The markings shall remain intact under normal traffic conditions at temperatures below 140°F (60°C). The markings shall have a uniform cross section. Pigment shall be evenly dispersed throughout the material. The density and character of the material shall be uniform throughout its thickness. The exposed surface shall be free from tack and shall not be slippery when wet. The material shall not lift from the pavement in freezing weather. Cold ductility of the material shall be such as to permit normal movement with the road surface without chipping or cracking.

F. Drying Time
The drying time shall follow a characteristic straight line function, the lower limits of which are 2 minutes maximum at 50°F (10°C), the upper limits of which are 10 minutes at 90°F (32°C), both temperatures measured as surface temperatures. After application and proper drying time, the material shall show no appreciable deformation or discoloration under local traffic conditions in air and/or road temperatures ranging from -20° to 120°F (-30°C to 50°C).

G. Physical Characteristics
1. Color. The thermoplastic material, after heating for four hours at 425°F (218°C) under agitation, shall meet the following color requirements:
Yellow Daylight reflectance at 45° -0 = 45% min.
White Daylight reflectance at 45° -0 = 75% min.
The color shall reasonably match Federal Test Standard Number 595, Chip Number 13538.
2. Softening Point. Materials shall have a softening point of 215° + 15° F (102.5° C + 9.5° C) minimum, after being heated for four hours + 5 minutes, as determined by ASTM designation D-36.
3. Specific Gravity. The specific gravity of the thermoplastic compound shall not be less than 1.95 nor greater than 2.15 at 77° F (23.2° C).
4. Impact Resistance. The impact resistance shall be a minimum of 10 inch pounds (1.13J) at 77° F (23.2° C) after the material has been heated for four hours + 5 minutes at 425° + 3° F and formed into test specimens as described in ASTM designation D-256.
5. Bond Strength. After heating the thermoplastic material for four hours + 5 minutes at 425 + 3° F, the bond strength to Portland cement concrete shall exceed 180 psi (1.24 MPa) minimum.
6. Cracking Resistance. The traffic line of thermoplastic material shall show no cracks after being applied properly after heating for four hours + 5 minutes at 425 + 3° F, and cooling 15° + 3° F.
7. Yellowness Index. The white thermoplastic material shall not exceed a yellowness index of 0.15.

H. Reflectorization
During manufacture, reflectorizing glass spheres shall be mixed into the material at a rate of 30% by weight of the material. Glass spheres shall also be automatically applied to the surface of the material at a uniform rate of approximately 10 pounds for every 100 square feet of line. These spheres shall be either dropped or sprayed onto the thermoplastic material while it is in a molten state, as specified elsewhere in this contract.

I. Glass Spheres (Pre-mixed)
The glass beads (pre-mixed) used in formulation shall be smooth, clear, free from any air inclusions and scratches that might affect their function as a retroreflective media, and shall have the following characteristics:
1. Refractive Index. The refractive index of the glass beads shall be a minimum of one point five (1.5), as determined by the Becke Line Method at 25° C (77° F).
2. Roundness. The glass beads shall have a minimum percentage of 80% true spheres. This roundness percentage shall be determined by the weight method described in Procedure B of the ASTM method of test for Roundness of Glass Spheres (D-1155), as modified for the 30, 50, and 80 mesh sieves.
3. Chemical Resistance. The glass beads used in formulation shall be 100% passing on the test for chemical resistance. This test is to be done by immersing the glass beads for one hour in water and corrosive agents, followed by microscopic inspection. Three, 3 to 5 gram portions of the sample shall be placed in separate pyrex glass beakers or porcelain dishes; one sample shall

be covered with distilled water, one sample with 3N solution of sulfuric acid, and one sample with 50% solution of sodium sulfide. After one hour of immersion, the glass beads of each dish or beaker shall be examined microscopically for evidence of darkening and/or frosting. All 3 samples shall show no evidence of frosting and/or frosting.
4. Gradation. The glass beads used in formulation shall have the following gradation, as determined by weights:

U. S. Standard Sieve Size	Minimum	Maximum
Passing #20	100%	----------
Passing #20, retained on #30	5%	10%
Passing #30, retained on #50	40%	80%
Passing #50, retained on #80	15%	40%
Passing #80	0%	5%

5. Other Ingredients. The other ingredients shall meet the following specifications:
Titanium Dioxide ASTM D 476 – Type 2

J. Application
The material shall be applied to the pavement by both spray and extruded method. The thermoplastic material shall readily apply at temperatures of 400° F to 440° F from approved equipment to produce a line that is both continuous and uniform in shape at thicknesses between 60 and 120 mils. The material, when formed into traffic stripes, shall be readily renewable by placing a thin overlay of new material directly over an old line of the same material. Such new material shall bond itself to the old line in such a manner that no splitting or separation takes place. After heating the material for four hours at 425° F and testing for flowability, the white thermoplastic shall have a maximum residue of 18%, and the yellow thermoplastic shall have a maximum residue of 21%. The material shall not exude fumes which are toxic, obnoxious or injurious to persons or property when it is heated during application.

K. Shelf Life
The material shall meet the requirements of this specification for a period of one year from the date of shipping. The thermoplastic pavement marking material must also melt uniformly with no evidence of skins or of unmelted particles for the same one year period. Any material not meeting the above requirements shall be replaced by the manufacturer at no cost to the City of Durham.

L. Packaging
All thermoplastic material shall be delivered to the City of Durham in containers filled by the manufacturer. Each material container shall be clearly and adequately marked to indicate the material, date of manufacture, batch or lot number and the manufacturer's name and location. Each container shall be of sufficient strength to permit normal handling during shipping and transporting on the job without loss of material, and prevent any contamination by water to the thermoplastic material.
The thermoplastic material shall be in granular form, packaged in suitable bio-degradable bags to which it will not adhere during shipment or storage. The bio-degradable bags shall be made from materials that can be melted into the thermoplastic kettles, without affecting the thermoplastic itself. The bags, when filled, shall weigh a minimum of 48 lbs. (21.8 kg) and a maximum of 52 lbs (23.6 kg). The label shall warn the user that the material shall be heated in the range of 400-440°F (204-227°C) during application.

APPENDIX A

SMALL DISADVANTAGED BUSINESS ENTERPRISE (SDBE) REQUIREMENTS AND CONSTRUCTION FORMS

CONTRACT: SW-26

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SMALL DISADVANTAGED BUSINESS ENTERPRISE

REQUIREMENTS

CITY OF DURHAM, NC

PROJECT GOAL SHEET FOR

2011 SIDEWALK CONSTRUCTION

CONTRACT SW-26

GENERAL CONSTRUCTION

MSDBE	WSDBE
16%	**7%**

Per Section 26-8. (a) of the Ordinance to Promote Equal Business Opportunities in City Contracting: "SDBE's that are owned by SED persons who are not Blacks or women may be counted by the Bidder towards either SDBE goal.**"**

MSDBE	Small Disadvantaged Business Enterprise owned by Blacks
WSDBE	Small Disadvantaged Business Enterprise owned by women
SDBE	Small Disadvantaged Business Enterprise
SED	Socially Economic Disadvantaged

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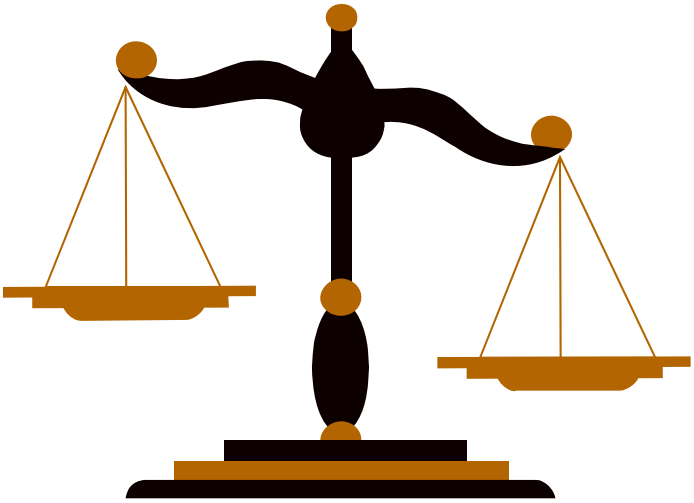
CITY OF DURHAM
SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

CONSTRUCTION FORMS

Revised 6/08



Mailing Address:

101 City Hall Plaza
Durham, North Carolina 27701
Phone: 919-560-4180
Facsimile: 919-560-4513

Street Address:

302 East Pettigrew Street, C-180
Durham, North Carolina 27701

The Department of Equal Opportunity/Equity Assurance

Good Things Are Happening In Durham

INSTRUCTIONS ON SDBE REQUIREMENTS

FOR USE IN BIDDING ON CONSTRUCTION PROJECTS WITH THE CITY OF DURHAM

These instructions summarize the provisions of the City of Durham's Equal Business Opportunity Ordinance as it applies to the bid process. Of course, as with any summary, it cannot reflect all of the ordinance.

QUESTIONS AND ANSWERS ON SDBE REQUIREMENTS

1. What is the purpose of the City's Equal Business Opportunity (EBO) program? The Director of the City's EO/EA Department has set SDBE goals for this contract. There will be a goal for SDBEs owned by Blacks and a goal for SDBEs owned by women. For the bid to be fully considered by the City, the bid needs to meet those goals or the bidder needs to have made good-faith efforts to subcontract with SDBEs in order to meet the goals. In order to be given credit for making those good-faith efforts, however, the bidder must provide written documentation of those good-faith efforts. That written documentation must be submitted to the City within 2 days after the bid opening unless a different time is stated by the City. See the instructions below regarding Form E-107.

2. What is an "SDBE"? It means a Small Disadvantaged Business Enterprise. An SDBE is a business, certified by the City of Durham as an SDBE, whose management, policies, major decisions, and daily business operations are independently managed and controlled by one or more socially and economically disadvantaged individuals. Among those considered to be "socially and economically disadvantaged" are individuals found by the City on a case-by-case basis to have been subjected to racial or ethnic prejudice or cultural bias within American society because of his or her identity as a member of a group. The business must not exceed size and gross revenue limits, and it must be majority-owned by one or more socially and economically disadvantaged individuals.

The firm needs to have its certification from the City before the bid opening if it is to count toward meeting the goals. See the next answer on how certification is needed in the good-faith efforts context. Many other units of government, such as counties, departments of transportation, and states, also certify firms and maintain lists of certified firms, but for purposes of complying with the City of Durham's SDBE requirements, the SDBE must be certified by the City of Durham. Certification does not mean that the City has found the firm to be competent.

3. Can other women or minority owned firms that have been certified by other entities be qualified as an SDBE pursuant to City's EBO Program? In accordance with Section 26-6(h) of the Ordinance to Promote Equal Opportunities in City Contracting, the City of Durham may consider a formal certification of another entity to determine whether an applicant meets requirements of the Equal Business Opportunity Program, provided that the City Manager or designee determines that the certification standards of such entity are comparable to those of the City. The City of Durham has determined that the following certifications are comparable to its own and may be used by bidders/proposers: North Carolina Department of Transportation (N.C. DOT), United States Small Business Administration (U.S. SBA) and Raleigh-Durham Airport Authority (RDU).

In lieu of SDBE's listed in its SDBE System, the City of Durham will accept women and minority firms certified by N.C. DOT (www.ncdot.org), U.S. SBA and RDU as meeting its SDBE goal requirements provided the bidder/proposer submits evidence that the firm is currently certified by one of the stated entities

at the time of bid/proposal. Failure to provide evidence of certification may disqualify the firm's participation for the purpose of meeting SDBE goals.

Any firm submitted in this manner will be contacted and urged to complete an abbreviated certification process with the City of Durham. For purposes of this document and associated forms, any reference to a "City Certified SDBE," an "SDBE certified by the City" or similar reference shall include reference to a qualified women or minority owned firm certified and approved in accordance with the above paragraphs, even where specific reference is made to the City SDBE database.

4. What SDBE forms must a bidder or contractor turn in to the City, and when?

Name or description of form	***Necessary to submit this form?***	***When to submit it?***
E-101 (SDBE PARTICIPATION ON BASE BID)	Always	With the bid
E-102 (SDBE PARTICIPATION ON BID ALTERNATE)	Yes, if there are alternates. Use a separate form for each alternate.	With the bid
E-103 reserved for future use)	n/a	n/a
E-104 (EMPLOYEE BREAKDOWN)	Has the bidder prequalified? Has the bidder met the SDBE goals? If the answer to either of these questions is "yes," then the form is not required. If the answer to both of those questions is "no," then the bidder must submit this form as part of its documentation of good-faith efforts.	Within 2 days after bid opening unless a different time is stated by the City
E-105 (STATEMENT OF INTENT TO PERFORM AS SUBCONTRACTOR)	Yes, if the bidder proposes to count any subcontracts with SDBEs towards the SDBE goals	Within 5 days after bid opening unless a different time is stated by the City
E-106 (REQUEST TO CHANGE SDBE PARTICIPATION AFTER BID OPENING)	Yes, if the bidder or contractor proposes certain changes in its subcontracting	Not with the bid. Once the bidder is identified as the apparent lowest responsible bidder, this form is due before the bidder/contractor can make the proposed change.
E-107 (QUESTIONNAIRE ON BIDDER'S GOOD-FAITH EFFORTS)	No, but it may help the bidder's case if the bidder failed to meet the SDBE goals. Do not turn in if the bidder met the goals.	Within 2 days after bid opening unless a different time is stated by the City
Good-faith documentation	Yes, if the bidder failed to meet the SDBE goals.	Within 2 days after bid opening unless a different time is stated by the City
Equal employment opportunity statement	Always, unless the bidder has prequalified	Within 2 days after bid opening unless a different time is stated by the City

5. If a bidder fails to meet the SDBE goals, can it still be awarded the contract? Bidders that do not meet the goals but demonstrate good-faith efforts are treated equally to those that meet the goals. Awarding a contract is ultimately the decision of the City Council, which considers compliance with the EBO ordinance along with other matters.

6. In making good-faith efforts, what SDBEs should a potential bidder contact? The City provides a list of SDBEs that have been certified by the City of Durham for particular trades, services, goods, etc. Potential bidders should contact SDBEs listed for the work that can be subcontracted.

7. Our firm already has employees who can do the work and does not want to subcontract that work. How does this fit in? The purpose of the EBO ordinance is to change business practices that would otherwise occur, by giving opportunities to under-used segments of the economy. If the bidder does not meet the goals, its good-faith efforts will be examined as with any other bidder that did not meet the goals.

8. If the bidder contacts a small socially and economically disadvantaged firm that could become a certified SDBE, will that count toward good-faith efforts? This contact will not count unless the firm that you contact is able to get its certification from the City of Durham before the bids are opened. In making good-faith efforts, let us suppose that a potential bidder contacts firms that could qualify to be SDBEs. If those firms have their certification from the City at the time of the bid opening, those contacts will count towards good-faith efforts. But there is a risk, because getting certification takes time, and the firm has to provide various documents to the City in order to merit certification.

9. Do all subcontracts with SDBEs count? The City will count as SDBE participation only expenditures to an SDBE that performs a commercially-useful function in the relevant work. An SDBE performs such a function when the socially and economically disadvantaged owners themselves are actually involved in performing, managing, and supervising a distinct element of the work. To determine whether those requirements are met, the City takes into account the amount of work subcontracted, industry practices, the adequacy of the resources of the SDBE for the work, the qualifications, such as possession of licenses, permits, and professional designations of the socially and economically disadvantaged owners, and other relevant factors. For example, if an SDBE lacks substantially all of the resources equipment and personnel to do the work it shall be presumed not to perform a commercially-useful function. The EBO ordinance includes more points to consider on this issue.

10. May an SDBE enter into subcontracts? This question arises in two situations: (1) the bidder is an SDBE and (2) the bidder is subcontracting with an SDBE. Consistent with normal industry practices, an SDBE may enter into subcontracts. If an SDBE subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of normal industry practices, the SDBE shall be presumed <u>not</u> to be performing a commercially-useful function. The SDBE may present evidence to rebut this presumption to the City.

11. What does it mean to say that information must be submitted "with the bid"? Unless bidders are given other written instructions from the City, it means that the information must be in a sealed envelope, delivered to the same place where a bid can be delivered, and before the time set for the bid opening. Unless bidders are given other written instructions from the City, the information can be either in the same envelope as the bid or in a separate envelope. If it is a separate envelope, the outside of the envelope must state the same information that is required on the bid envelope, and that it contains SDBE forms.

12. When the chart in question 3 says that a form can be submitted 2 days or 5 days after the bid opening, exactly when is it due? Where is it to be submitted?

The form must be submitted to the City's EOEA Department, located at 302 East Pettigrew Street, C-180 or faxed to (919) 560-4513, so that it is received within 2 days or 5 days (whichever applies according to the chart) after the bid opening. If the form is faxed, it must be received before midnight on that 2nd or 5th day. If it is delivered by any other means, it must be received before 5:00 PM. In counting these 2 days or 5 days, exclude the following: the day of the bid opening, Saturday, Sunday, and holidays observed by city government of the City of Durham. For instance, for a form due in 2 days, if the bid opening is on a Thursday, the due date for the form would be on the following Monday (midnight if faxed, otherwise 5:00 PM). If the day after the bid opening or that Monday is a City holiday, the form would be due on Tuesday. For a form due in 5 days, if the bid opening were on Tuesday, the due date for the form would be on the following Tuesday (midnight if faxed, otherwise 5:00 PM). If any weekday between those Tuesdays is a City holiday or if the Tuesday on which the form would be due is a City holiday, the form would be due on Wednesday. It is best to place the documents inside an envelope, and to write on the outside of the envelope the same information that is required on the bid envelope, and that it contains SDBE forms. Holidays observed by city government are New Years' Day, Dr. Martin Luther King, Jr., Day; Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving Day, Christmas Day; two days (varying from year to year) during the week of Christmas Day; and other times as may be authorized by City Council.

13. When there are bid alternates how is SDBE participation counted? The total amount of the award actually made by the City is the key. For instance, assume the following made-up example:

- Base bid is $200,000
- Alternate A bid is $50,000
- Alternate B bid is $20,000
- Black-owned SDBE goal is 10%.
- The bidder proposes Black-owned SDBE participation as follows: $20,000 on the base bid, $4,000 on Alternate A, and $10,000 on Alternate B.

In this fictional example, the bidder may or may not meet the goal, depending on the actual award by Council. This chart illustrates:

	Only the base bid	Base bid + Alternate A	Base bid + Alternate B	Base bid + Alternates A & B
Bid total	$200,000	$250,000 (200,000 + 50,000)	$220,000 (200,000 + 20,000)	$270,000 (200,000 + 70,000)
Total SDBE participation	$20,000	$24,000 (20,000 + 4,000)	$30,000 (20,000 + 10,000)	$34,000 (20,000 + 14,000)
Black-owned **SDBE percentage**	10%	9.6%	13.6%	12.6%
Meet 10% Black-owned **SDBE goal?**	Yes	No	Yes	Yes

14. How does the City count participation by an SDBE that is not owned by Blacks or women? An SDBE not owned by Blacks or women may be counted by the bidder towards either goal. The bidder should specify how to count such SDBEs on form E-101.

15. How is the lease of equipment by an SDBE counted? If the SDBE leases equipment for the work of the contract, the value of the lease payments is included as part of the SDBE's participation. However, it is not proper to include such lease payments if they are to be made to the prime contractor or the prime contractor's "Affiliate." To understand what an "Affiliate" is, see section 26-3 of the EBO ordinance.

16. How is the purchase of goods from an SDBE counted? If the bidder is buying goods from an SDBE, the cost of the goods can be considered SDBE participation only if (a) the SDBE operates or maintains a factory that produces the goods, or (b) the SDBE has an establishment where the goods of the general character described by the specifications or required under the Contract are regularly sold or leased to the public in the usual course of business. If (b) applies, the SDBE's *principal* business must be selling or leasing those goods and the SDBE must operate under its own name.

INSTRUCTIONS FOR INDIVIDUAL SDBE BID FORMS FOR CONSTRUCTION

Form E-101 (SDBE PARTICIPATION) On this form, "participation" is the dollar amount of subcontracts for significant goods and services to be used to perform the contract. For instance, if the bidder would enter into subcontract with SDBEs for a total of $30,000, that would be the SDBE participation amount. The sum of SDBE participation and non-SDBE participation should equal the amount of the bid. Form E-101 is required for the base bid

Form E-102 (SDBE PARTICIPATION ON BID ALTERNATE) This form is essentially the same as Form E-101, except that it is used for the alternate bids instead of the base bid. Use a separate Form E-102 for each alternate bid.

Form E-103 reserved for future use

Form E-104 (EMPLOYEE BREAKDOWN) Complete Part A for the primary location where the goods and services that are the subject of the bid are to be made or provided. If the parent company or other locations of the bidder are providing any substantial portion of the goods or services, then the bidder must also complete Part B, for the consolidated company. If the bidder has an EEO-1 Report that provides the

same information as required on the Form E-104, the EEO-1 Report may be used instead. On whether to submit Form E-104, see question 3 above. If you need to submit it, see questions 3 and 11 above on when and where to turn in this form.

Form E-105 (STATEMENT OF INTENT TO PERFORM AS SUBCONTRACTOR) The bidder must provide a Form E-105 (Statement of Intent) for each SDBE firm that the bidder would subcontract with if the City awards the contract to the bidder. See questions 3 and 11 above on when and where to turn in this form.

On Form E-105, what happens if column 2 (dollar amount) disagrees with column 3 (percentage)? If there is a conflict between the dollar amount in Column 2 and the percentage of base bid in Column 3, the percentage stated in Column 3 will control. For instance, if Column 2 if $10,000, Column 3 is 10%, and the base bid is $200,000, there is an error, because ten percent of $200,000 is $20,000, not $10,000. In that example, the form will be read as a commitment for $20,000. If the SDBE both (i) is doubtful of its arithmetic *and* (ii) wants Column 2 to control in case of disagreement, it may say that Column 2 will control over Column 3, but to do so, it must write that on Form E-105.

E-106 (REQUEST TO CHANGE SDBE PARTICIPATION AFTER BID OPENING) When is this form used? Beginning with the time that the City Manager identifies a bidder as the apparent lowest responsible bidder and continuing as that bidder is awarded the contract and continuing until that bidder/contractor reaches the point of final completion of the work, Form E-106 is to be used when the following occurs: If the bidder/contractor proposes to do any of the following –

to replace a subcontractor,
to perform subcontracted work with the bidder/contractor's own forces,
to increase the quantity of subcontracted work,
to decrease the quantity of subcontracted work, or
to change the allocation of work among subcontractors,

then the bidder/contractor must make good-faith efforts to attain the goals that it has shown on the E-101 and applicable E-102 forms, and the bidder/contractor must fill out Form E-106. Substitutions of subcontractors in these circumstances, both before and after the awarding of a contract, are subject to City approval. Consult the City's EO/EA Department on the procedures to follow in order to comply with City Code 26-10(c).

E-107 (QUESTIONNAIRE ON BIDDER'S GOOD-FAITH EFFORTS) Bidders that do not attain the SDBE goals have the responsibility to make good-faith efforts and to demonstrate to the City that they have made such efforts. In determining a bidder's good-faith efforts to engage SDBEs, the City Manager shall consider the information supplied by the bidder to answer the questions in Form E-107, , along with other criteria that the City Manager deems proper. Form E-107 is an optional tool that bidders may use to show that they have made good-faith efforts. See questions 3 and 11 above on when and where to turn in this form. Even when this form may be submitted after the bid opening, it cannot include information on efforts made after the bid opening. Even if a bidder does not use Form E-107, the City will nevertheless attempt to answer the questions on the E-107 using good-faith documentation supplied by the bidder. Bidders who do not turn in Form E-107 will still find it helpful to know how the City will determine whether good-faith efforts have been made.

For Section 2 of Form E-107 -- To make the best good-faith efforts as described under Section 2 on E-107, your firm should have sent a written letter or fax to all SDBEs on the City's list that perform the kind of work to be subcontracted. Your firm needs to keep a record of all of these attempts to reach SDBEs. That letter would say, in effect, as follows: (Of course, your firm would need to write appropriate words where *italicized instructions* are used below.)

> Our firm is interested in bidding on a contract with the City of Durham for [*describe the project*]. We are interested in subcontracting, to your firm, the following work [*describe specific work, for example, painting of interiors of 5 rooms, including prep work; or supplying 20 circuit breakers of type XJE-R or equivalent*]. You may inspect the applicable plans and specifications and descriptions of items to be purchased at our office located at the address shown above, or at the City of Durham's EO/EA Department, 302 East Pettigrew Street, C-108 , Durham, N.C., 27701 , 919-560-4180[, *or at the AGC plan room in* (*specify the locations)*]. You may obtain a copy [*explain how and from whom (the City, architect, engineer, etc.) the potential subs can obtain a copy*].

If applicable, tell the SDBEs at which offices of the AGC the plans and specifications may be seen, possibly from the following AGC list.

1100 Euclid Avenue Charlotte, NC 28203-1868 Phone: (704)372-1450	Caswell Bldg., Glenwood Place 3700 National Drive, Ste. 201 Raleigh, NC 27612 Phone: (919)781-3270
4000 Piedmont Parkway, Ste. 400 High Point, NC 27265-0941 Phone: (336)812-3127	2527 S. 17th St. Wilmington, NC 28401 (McGee CADD Reprographics Bldg.) Phone: (910)791-5533
2713 Breezewood Avenue Fayetteville, NC 28303 Phone: (910)484-0184	801 Dickenson Blvd. Greenville, NC 27834 (McGee CADD Reprographics Bldg.) Phone: (252)752-4400
404 Executive Park, Bldg. 3 Asheville, NC 28801-2426 Phone: (828)254-6499	Other AGC locations if they have the plans and specifications

GOOD-FAITH DOCUMENTATION. This is not a City form but is documentation to be supplied by the bidder. See the instructions on Form E-107 above. Unless the bidder meets the SDBE goals, the bidder must demonstrate that it made good-faith efforts. To do so, it can use a combination of providing answers to Form E-107 and documentation, such as copies of the notices to SDBEs that are described in question 1(c) on Form E-107. See questions 3 and 11 above on when and where to turn in this form. Even when this documentation may be submitted after the bid opening, it cannot include information on efforts made after the bid opening.

EQUAL EMPLOYMENT OPPORTUNITY (EEO) STATEMENT. This is not a City form but is a statement to be supplied by the bidder. The bidder shall state its nondiscrimination employment policy and business practices as of the time of bid opening. Write "EEO" at the top of the first page of your statement. This is different from the EEO-1, which is referred to in the instructions for Form E-104. See questions 3 and 11 above on when and where to turn in this form.

Form E-101 SDBE PARTICIPATION ON BASE BID

Name of Bidder: _____

Prequalification number: _____ Prequalification expiration date: _____

Total dollar amount of SDBE participation in base bid work: _____

For each row, check one column: E, F, or G.

Column A	Column B	Column C	Column D	Column E	Column F	Column G
Name of proposed subcontractor for base bid work	Goods and services to be provided for base bid work	Subcontract amount, in dollars, for base bid work	Percentage of total base bid (Column C divided by total base bid)	Black-owned SDBE	Women-owned SDBE	Non-SDBE
		$	%			
		$	%			
		$	%			
		$	%			

Attach extra sheets as needed. See question 14 under **QUESTIONS AND ANSWERS ON SDBE REQUIREMENTS**, *which states that the bidder may check column E or column F for an SDBE that is neither Black-owned nor women-owned.*

Do the above participation amounts meet the goals on this contract, assuming only the base bid is counted?

☐ **Yes** ☐ **No.** If the answer is No: (1) the bidder must have made good-faith efforts; (2) the bidder must provide, within 2 business days after bid opening, documentation of good-faith efforts; and (3) the bidder must sign below.

As an authorized representative of the Bidder, I swear or affirm under penalty of fraud that the good-faith efforts documentation submitted with this bid, pertaining to the base bid and all alternates, if any, is correct and not intended to defraud or mislead. After the contract between the City and the Bidder is signed, except to the extent that the City gives prior written approval for changes, the Contractor agrees that it shall engage the subcontractors listed on this E-101 and on all applicable E-102 forms, to perform the work for the dollar amounts or percentages described on this E-101 and applicable E-102s.

_____

Signature of individual authorized to sign for Bidder

Form E-102 SDBE PARTICIPATION ON BID ALTERNATE

This form pertains to the following bid alternate: _____

(*Specify the alternate, in the way that it is designated in the bid documents)*

Name of Bidder: _____

Total dollar amount of SDBE participation in work on this alternate: _____

For each row, check one column: E, F, or G.

Column A	Column B	Column C	Column D	Column E	Column F	Column G
Name of proposed subcontractor for this alternate	Goods and services to be provided for this alternate	Subcontract amount, in dollars, for this alternate	Percentage of total bid for this alternate (Column C divided by total bid for this alternate)	Black-owned SDBE	Women-owned SDBE	Non-SDBE
		$	%			
		$	%			
		$	%			
		$	%			

Attach extra sheets as needed. . See question 14 under **QUESTIONS AND ANSWERS ON SDBE REQUIREMENTS***, which states that the bidder may check column E or column F for an SDBE that is neither Black-owned nor women-owned.*

Do the above participation amounts meet the goals, if you consider only this alternate and not the base bid work? ☐ **Yes** ☐ **No.** If the answer is No: (1) the bidder must have made good-faith efforts; (2) the bidder must provide, together with this bid, documentation of good-faith efforts; and (3) the bidder must sign Form E-101 (SDBE PARTICIPATION ON BASE BID).

E-104 EMPLOYEE BREAKDOWN

Part A – Employee statistics for the primary location.

				M——a——l——e——s					F——e——m——a——l——e——s				
Employment category	Total employees	Total males	Total females	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project manager													
Professional													
Technical													
Clerical													
Labor													
Totals													

Part B – Employee statistics for the consolidated company. (*See instructions for this form on whether this part is required*.)

				M——a——l——e——s					F——e——m——a——l——e——s				
Employment category	Total employees	Total males	Total females	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project manager													
Professional													
Technical													
Clerical													
Labor													
Totals													

Form E-105 STATEMENT OF INTENT TO PERFORM AS SUBCONTRACTOR

Name of **Bidder**: _____

Name of **Project**: _____

The undersigned firm is certified by the City of Durham as an SDBE.

The undersigned SDBE represents that it will enter into a formal contract with the Bidder to perform the following work in connection with the Project, in the dollar amount or percentage listed below, if the Bidder signs a contract with the City of Durham for the Project.

Describe the work in sufficient detail so that it can be determined whether the SDBE's work is a substantial and necessary part of the Project.

Column 1 - description of work to be done by undersigned SDBE	**Column 2** -dollar amount of the proposed subcontract between the bidder and the undersigned SDBE	**Column 3** - percentage of Bidder's base bid represented by the proposed subcontract between the Bidder and the undersigned SDBE

The undersigned SDBE will be ready to begin work on the subcontract on the following date:

Name of SDBE: _____Telephone No. _____

Address, including Zip Code, of SDBE: _____Fax No. _____

_____

Signature of authorized representative of SDBE

Title of the person who signed above: _____

What person with the SDBE should the City contact with questions about this form or the proposed subcontract? _____

Name of individual: _____Telephone No. _____

Title of individual: _____

Email address: _____

By submitting this form to the City of Durham, the Bidder represents that if the Bidder signs the contract with the City of Durham for the Project, the Bidder will enter into the subcontract described above with this SDBE.

E-106 REQUEST TO CHANGE SDBE PARTICIPATION AFTER BID OPENING

Project: _____
Name of bidder or contractor: _____
Name and title of representative of bidder or contractor: _____
Address (including Zip Code): _____
Telephone number: _____ Fax number: _____
Email address: _____
Total amount of original contract, before any change orders or amendments: _____
Total amount of the contract, including all approved change orders and amendments to date, but not counting the changes proposed in this form: _____
Dollar amount of changes proposed in this form: _____
The proposed change *(check one)* ☐ **increases** ☐ **decreases** the dollar amount of the bidder's/contractor's contract with the City.
Does the proposed change decrease the SDBE participation? *(check one)* ☐ **yes** ☐ **no**
If the answer is **yes**, complete the following:

BOX A. For the subcontract proposed to be changed (increased, reduced, or eliminated):
Name of subcontractor: _____
Goods and services to be provided before this proposed change: _____
_____
Is it proposed to eliminate this subcontract? ☐ yes ☐ no
If the subcontract is to be increased or reduced, describe the nature of the change (*such as adding $5,000 in concrete work and deleting $7,000 in grading):* _____
_____

Dollar amount of this subcontract before this proposed change: _____
Dollar amount of this subcontract after this proposed change: _____
This subcontractor is *(check one):*
☐ 1. City-certified Black-owned SDBE
☐ 2. City-certified women-owned SDBE
3. City-certified SDBE that is neither Black-owned nor women owned, but to be credited as
3(a) ☐ Black-owned SDBE 3(b) ☐ women-owned SDBE
☐ 4. not a City-certified SDBE

BOX B. Proposed subcontracts other than the subcontract described in Box A above
Name of subcontractor for the new work: _____
Goods and services to be provided by this proposed subcontract: _____
_____

Dollar amount proposed of this proposed subcontract: _____
This subcontractor is *(check one):*
☐ 1. City-certified Black-owned SDBE
☐ 2. City-certified women-owned SDBE
3. City-certified SDBE that is neither Black-owned nor women owned, but to be credited as
3(a) ☐ Black-owned SDBE 3(b) ☐ women-owned SDBE
☐ 4. not a City-certified SDBE

Add additional sheets as necessary.

This form is used only if the conditions described in the instructions are present.

E-107 QUESTIONNAIRE ON BIDDER'S GOOD-FAITH EFFORTS

Name of Bidder:

_____

If you find it helpful, feel free to attach pages to explain your answers. **How many pages is your firm attaching to this questionnaire?** _____ *(Don't count the 2 pages of this questionnaire.)*

If a yes or no answer is not appropriate, please explain the facts. All of the answers to these questions relate only to the time <u>before</u> your firm submitted its bid or proposal to the City. In other words, actions that your firm took after it submitted the bid or proposal to the City cannot be mentioned or used in any answers.

1. **SOLICITING SDBEs.**

(a) Did your firm solicit, through all reasonable and available means, the interest of <u>all</u> SDBEs certified (that is, in the City's database) in the scopes of work of the contract? ☐ **yes** ☐ **no**

(b) In such soliciting, did your firm advertise? ☐ **yes** ☐ **no** Are you attaching copies to this questionnaire, indicating the dates and names of newspaper or other publication for each ad if that information is not already on the ads? ☐ **yes** ☐ **no**

(c) In such soliciting, did your firm send written (including electronic) notices or letters? Are you attaching one or more sample notices or letters? ☐ **yes** ☐ **no**

(d) Did your firm attend the pre-bid conference? ☐ **yes** ☐ **no**

(e) Did your firm provide interested SDBEs with timely, adequate information about the plans, specifications, and requirements of the contract? ☐ **yes** ☐ **no**

(f) Did your firm follow up with SDBEs that showed interest? ☐ **yes** ☐ **no**

(g) With reference to the SDBEs that your firm notified of the type of work to be subcontracted -- Did your firm tell them?

(i) the specific work your firm was considering for subcontracting? ☐ **yes** ☐ **no**
(ii) that their interest in the contract is being solicited? ☐ **yes** ☐ **no**
(iii) how to obtain and inspect the applicable plans and specifications and descriptions of items to be purchased? ☐ **yes** ☐ **no**

2. BREAKING DOWN THE WORK.

(a) Did your firm select portions of the work to be performed by SDBEs in order to increase the likelihood that the goals would be reached? ☐ **yes** ☐ **no**

(b) If **yes**, please describe the portions selected. **ANSWER:**

3. NEGOTIATION. In your answers to 3, you may omit information regarding SDBEs for which you are providing Form E-105.

(a) What are the names, addresses, and telephone numbers of SDBEs that you contacted? **ANSWER:**

See next page for remaining questions.

(b) Describe the information that you provided to the SDBEs regarding the plans and specifications for the work selected for potential subcontracting. **ANSWER:**

(c) Why could your firm not reach agreements with the SDBEs that your firm made contact with? Be specific. **ANSWER:**

4. ASSISTANCE TO SDBEs ON BONDING, CREDIT, AND INSURANCE.

(a) Did your firm or the City require any subcontractors to have bonds, lines of credit, or insurance?
☐ **yes** ☐ **no** (Note: In most projects, the City has no such requirement for *subcontractors*.)

(b) If the answer to (a) is **yes**, did your firm make efforts to assist SDBEs to obtain bonds, lines of credit, or insurance? ☐ **yes** ☐ **no** If **yes**, describe your firm's efforts. **ANSWER:**

(c) Did your firm provide alternatives to bonding or insurance for potential subcontractors? ☐ **yes** ☐ **no**
If **yes**, describe. **ANSWER:**

5. GOODS AND SERVICES. What efforts did your firm make to help interested SDBEs to obtain goods or services relevant to the proposed subcontracting work? **ANSWER:**

6. USING OTHER SERVICES.
(a) Did your firm use the services of the City to help solicit SDBEs for the work? ☐ **yes** ☐ **no** Please explain. **ANSWER:**

(b) Did your firm use the services of available minority/women community organizations, minority and women contractors' groups, government-sponsored minority/women business assistance agencies, and other appropriate organizations to help solicit SDBEs for the work? ☐ **yes** ☐ **no** Please explain. **ANSWER:**

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APPENDIX B

DURHAM

1869

CITY OF MEDICINE

CERTIFIED SMALL DISADVANTAGED BUSINESS ENTERPRISE (SDBE) LISTING

CONTRACT: SW-26

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Appendix B
SW-26 – 2011 Sidewalk Construction

Name	Mailing Address	City	State	Zip code	Gender Race ID	Contact	Phone	Fax	Cell Phone	Email	Services	Licenses
ADIA of NC, LLC	1605 Holloway St., # D	Durham	NC	27703-1456	M	Andrew Bishop, Jr.	919-801-3403	919-667-1456	919-801-3403	adia_inc@yahoo.com	landscaping, Fencing, Tree Removal, Demolition, Hauling, Clearing	City of Durham Business license
AMH-ELOHIM Enterprise, LLC	5712 Brookshadow Drive	Raleigh	NC	27610	M	Antwone Hunt	919-255-9829	919-255-9829		ahunt@amhee.com	concrete work, place and finish, repair and restoration	
Ardnek Footings, Inc.	409 Arborhill Lane	Holly Springs	NC	27540	M	Kenneth Cole	919-303-4600	919-303-4607	919-730-1417	ardnekfootings@nc.rr.com	Concrete, Footings	
Atlantic Contracting Co., Inc.	PO Box 49559	Greensboro	NC	27419	W	Niveen Kattan	336-931-3109	336-931-3108		info@atlanticcontractinginc.com	Concrete Masonry	NC General Contractors License
B & A Concrete Masonry	190 Alyssum Drive	Four Oaks	NC	27524	M	Billy Giles	919-427-8048		919-427-3966	angiles@ncac.edu	concrete; masonry; curb and gutter; sidewalks; handicap ramps	City of Durham Business License
B & B Triangle Landscaping and Irrigation, Inc.	PO Box 25006	Durham	NC	27702	M	Andre Bond; Byron Fletcher	919-384-9300	919-384-9300	919-412-3718	abond@bandbtrianglelawncare.com	landscaping; Lawn maintenance;cleaning;construction cleanup; snow removal	City of Durham Privilege License

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BD & J Services, LLC	600 S. Magnolia Ave.	Dunn	NC	28334	M	Brenda Haywood	910-892-2884	910-892-8775	910-308-6346	woodyl1059@aol.com	waste disposal; demolition; landscaping	
Buffalo Creek Grading & Transport, Inc.	PO Box 685	Wendell	NC	27591	W	Melissa Morgan	919-266-7473	919-365-3655	919-266-7473	wrennronnie@yahoo.com	hauling; grading; landscaping; construction; excavation; dozer work	
Bullock Building Company, Inc.	1012 Carpenter Fletcher Rd.	Durham	NC	27713	M	Stephanie Alston	919-544-8381	919-544-5532		stephanie@bullockbuilding.com	concrete, metal stud, drywall	City of Durham Privilege
Busy Black Trucking, LLC	406 W. Carver St.	Durham	NC	27704	M	Anthony Black	919-442-7079	919-471-6232	919-442-7079	busyblacktrucking@nc.rr.com	hauling services-all aggregate materials, rock, sand, dirt, concrete debris, demolition	City of Durham Privilege
Caldwell Properties, LLC	202 Wenonah Way	Durham	NC	27713	M	Percy Caldwell	919-544-4127	919-544-2442	919-225-4164	cpercycc@aol.com	drywal,concrete,framing,masonry, tiling, woodwork,general construction	NC General Contracting License#66047 Limited Building;City of Durham
Carolina Environmental Contracting, Inc.	PO Box 1905	Mount Airy	NC	27030	W	Joanne Cheatham	336-320-3849	336-320-3854		joanne@carolinaenvironmentalcontracting.com	Erosion Control; Silt Fencing; Tree Protection Fencing; Revegetation (seeding)	City of Mt. Airy Business License

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Certified Concrete Construction, Inc.	PO Box 545	Morrisville	VA	27560	W	Joel Sousa	919-481-6700	919-481-9058	919-442-8358	ccconstruction@bellsouth.net	concrete flat work; curb & gutter; sidewalk; concrete paving; dumpster pads; wheelchair ramps; driveways	City of Durham Privilege License
City Wide Construction Company	7943 Halyard Terrace	Chesterfield,	VA	23832	M	Tonya Belfield; Carlton Belfield	804-339-0839	804-639-7224		tbelfield@verizon.net	Demolition, hauling, excavation, paving, grading, landscaping	Class A Contractor''s License-VA
Complete Lawn Care	5853 Sandstone Drive	Durham	NC	27713	M	Robert Grimsley	919-544-7603	919-544-7131	919-201-9646	completelawncare44@yahoo.com	Landscaping; lawncare; hauling topsoil, gravel and sand	City of Durham Business license
Core Master, LLC	PO Box 8946	Rocky Mount	NC	27804	M	Lisa Gonzalez	252-451-5661	252-451-5662	252-205-3386	info@coremasterusa.com	concrete core drilling; floor/wall/hand sawing; controlled demolition	
Cruz Brothers Concrete, Inc.	1572 Payne Road, #75	Graham	NC	27253	H	Maria I. Cruz	336-376-0787	336-376-1115	336-516-5764	ines@cruzbros.com	Concrete curb & gutter, sidewalks, slabs, driveways	
Davidson Construction, LLC	208 Gibson Lane	Clayton	NC	27520	M	Tony Small	919-550-3485	919-550-3485	919-868-7771	davidsonbldg@aol.com	concrete; demolition; sheerock; metal studs; construction	NC General Contracting# 63308 Limited Building

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Double R Concrete Finishing	6917 Windover Drive	Durham	NC	27712	M	Randy Williams	919-477-3009	919-477-3009	919-624-3009	doubleconcretefinishing@verizon.com	grading; hauling; concrete placement: grading, forming, pouring &finishing	City of Durham Privilege
Dudley's Fence Company	4136 Field Station Road	La Grange	NC	28551	M	Sherman Dudley	252-566-5759	252-566-9436	252-560-5759	dudleysfence@yahoo.com	sale and installation of fencing	
ECON International Corporation	1709 Fruehauf Drive, Suite 206	Charlotte	NC	28273	H	Albeiro Loaiza	704-688-3709	704-688-7488	704-309-8052	econico@aol.net	concrete; curb & gutter;masonry;pavers; asphalt; traffic control erosion control	NC General Contractor's License#54374; City of Charlotte
Erosion Supply Company	8817 Midway West Road	Raleigh	NC	27675	W	Vicki Phillis	919-787-0334	919-787-0335	919-414-7465	erosionsupply@nc.rr.com	provide site prepartion & paving materials which include erosion control, seeding and geotextiles	
ETC Concrete Construction Corporation	3829 Opportunity Lane	Raleigh	NC	27603	H	Liz Esteves	919-772-4114	919-772-4174	919-291-5719	liz@etcconcrete.com	concrete-sidewalks,paving, footings	

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H. Richardson & Company, Inc.	5104 Sky Lane Drive	Durham	NC	27704	M	Henry Richardson	919-530-1770	919-530-1770		jrichardson54@nc.rr.com	General Contracting (Highway); Construction Administration; Inspection; Traffic control; Erosion Control ; Asphalt or Pavement Repair	General Contracting License #49668; Highway Construction: Limited
Hine Sitework, Inc.	PO Box 1275	Goldsboro, NC	NC	27533	W	Ann Hine	919-736-8990	919-736-8886	919-738-2972	ann@hinesitework.com	demolition; grading; paving; concrete; erosion control;clearing& grubbing; water& sewer curb&gutter;storm drainage	NC General Contracting# 52225 Unlimited:Higway, PU (Water & Sewer)
Honducom Concrete, Inc.	PO Box 14968	Raleigh	NC	27620	H	Ramon Suazo	919-662-0388	919-662-0390	honducconcrete@earthlink.net	919-796-7148	concrete work-commercial, residential and industrial	City of Raleigh Privilege License
Hughes Masonry	2524 Hwy 55	Durham	NC	27713	M	Billy Hughes	919-201-2498	919-403-9643	919-201-9138	bhughes.masonry@yahoo.com	masonry; brick; stone work; pressure washing;concrete	City of Durham Privilege License
ICORE Service Company, LLC	4216-A Queen Beth Drive	Greensboro	NC	27405	M	Cornelius Lambert h	336-274-2394	336-617-8253	336-362-1646	rhlamb@hotmail.com	Framing, Ceilings, Concrete (Flat), Doors and Hardware	NC General Contractor's License - Building, Limited

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IQ Contracting, LLC	PO Box 6069	Raleigh	NC	27628	H	Robert A. Nunez	919-832-5111	919-832-4111	919-616-2618	rnunez@iqcontracting.net	Concrete Construction and Concrete Repair	City of Raleigh Privilege License
J.A. Farrington Janitorial Services, Inc.	2403 Fayetteville St.	Durham	NC	27707	M	James Farrington	919-308-7988	919-806-8064	919-308-7988	kemetuniversal@hotmasil.com	landscaping & ground maintenance; irrigation;	Durham Privilege License
Kinston Contracting, Inc.	113 East Gordon Street	Kinston	NC	28501	M	Linda J. Lanier	252-268-7768			dirtplay21@yahoo.com	general construction;grading; clearing;concrete;landscaping	
KMC Development, Inc.	3632 Singleleaf Lane	Raleigh	NC	27616	W	Kristina Carter	919-266-0216	919-266-0216	919-215-3774	kmcartertws@bellsouth.net	Installing pump stations, wholesale supplier of iron pipes & concrete structures.	
Lanier Construction	1505 Browntown Road	Snow Hill	NC	28580	M	Sherba Lanier	252-747-8124	252-747-4337	255-286-6736	henry@lanierconstructionco.com	Curb & Gutter, Concrete, Grading, Road Construcion, General construction	
Martinez Company, Inc.	342 Fleming Drive	Durham		27712	H	Keith Brown, Luis Martinez Guerrero	919-255-8817	336-282-7600	919-724-2611	luis342@bellsouth.net	demolition; concrete cutting/repair/placement/slabs/sidewalks;	

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SW-26 – 2011 Sidewalk Construction

Mayo's Masonry, Inc.	4917 Howe Street	Durham	NC	27704	M	Phillip Mayo	919-730-5053	919-237-3105	919-730-5053	mayo_masonryinc@yahoo.com	Concrete/Masonry	
McClure and Associates Construction, Inc.	6201 Remington Lake Drive	Raleigh	State	27616	W	Lesle McClure	919-878-8006	919-878-7992	919-868-3649	Lesle@mcclurebuilders.com	grading; demolition; drywall; concrete; framing; roofing; metal roofing;	NC General Contractors License#42632 Unlimited Building
NU-TECH Paving Company, Inc.	PO Box 310	Youngsville	NC	27596	W	Sara Easley	919-556-6105	919-556-9084	919-669-4733	ntpaving@aol.com	asphalt paving projects	NC Gen.Contrator#39553, Unlimited HIghway/City of Raleigh;Towns of Cary, Morrisville
Owens Landscaping and Concrete Service	822 Midland Terrace	Durham	NC	27704	M	James Owens	919-596-0775	919-956-8059	919-618-5698	owenscurtman@aol.com	Concrete/Landscaping	
Pro-Site Services, LLC	800 N. Mangum Street, Suite 200	Durham	NC	27701	M	Ronald Williams	919-667-9790	919-530-1770	919-730-8110	rwprosite@yahoo.com	Concrete Construction	City of Durham Business License

Appendix B
SW-26 – 2011 Sidewalk Construction

Quality and Precision Fencing/Welding	4010 Old Chapel Hill Road	Durham	NC	27707	M	Mitchell Quarterman	919-428-4391	No Fax	919-399-1938	mitch1981@clearwire.net	fencing; welding	NC Landscape Architect/Fencing#2000011868923
R.C. Abbott Fencing & Welding, Inc.	800 Forge Road	Durham	NC	27713	M	Teresa Hedley	919-544-5553	919-595-0647	919-452-9101	thedley@rcabbott.com	fencing; gates; handrails; railings; security, vinyl, chain length, barbed wire fencing	City of Durham
RDU Paving, Inc.	5415 Fayetteville Road	Raleigh	NC	27603	W	Jeanette Lundholm	919-329-7300	919-329-7301	919-625-2832	sales@rdupaving.com	asphalt paving; new pavement construction/repair;seal coating; striping; small concrete repair	City of Raleigh, NC General Contractors License - Highway, Limited: #62537
Reddrick Masonry	701 Felicia Street	Durham	NC	27704	M	Rueben Redrick	919-477-8297	919-620-0721	919-730-0983	reddrickmasonry@aol.com	hardscape brick paving; concrete; curbs; gutters; masonry; walk ways	City of Durham Privilege
RTP Grading & Sitework, LLC	PO Box 12537	Durham	NC	27709	M	Blair Peil	919-361-5400	919-361-5432	919-427-1215	rtpgrading@netzero.com	demolition, clearing, erosion control, concrete, grading, asphalt, curb&gutter, sidewalks,	City of Durham; Town of Chapel Hill

Appendix B
SW-26 – 2011 Sidewalk Construction

S & M Concrete Construction, LLC	10504 Lucasville Road	Manassas	NC	20112	H	Caroline Franklin; Jack Desa	703-392-9045	703-368-7421		smcc04@msn.com	concrete	VA Class
Sanchez Trucking	922 Riverbark Lane	Durham	NC	2703	H	Marcial Sanchez	919-697-9004	919-596-5402		trucking.sanchez@yahoo.com	hauling;concrete removal; sidewalks; driveways	City of Durham Privilege
Smith Supply, LLC	3650 Rogers Road, Suite 320	Wake Forest	NC	27587	M	Tynish Smith Hollins	919-761-3937;	919-453-0850	l919-605-4688	thollins@nc.rr.com;	small pipe;small pipe fittings; silt fence; filter fabric; valves-DIP	Raleigh Privilege
Southern Garden, Inc.	P O Box 808	Apex	NC	27502	W	Todd Laakso	919-362-1050	919-363-9222	919-337-7615	info@southerngardeninc.com	Landscaping: Landscape Installation/ Maintenance; irrigation, seed & mulch; brick & unit pavers, light masonry; retaining walls	City of Durham Privilege License;NC Landscape Contractor #1049;NC Ground Pesticide Application
Stokes Landscaping	7826 Fawnbrook Drive	Hillsborough	NC	27278	M	Maurice Stokes	919-477-9591	919-321-6191	919-624-3939	srmosto@aol.com	Landscaping; Drainage Work; Grounds Maintenance; Grading	City of Durham Business License
Tarheel Asphalt & Seal Coating	4920-100 Capital Blvd.	Raleigh	NC	27616	M	Jerry Perry	919-779-0806	919-779-0806		jperry0401@att.net	asphalt paving, patching; seal coating; striping; grading	City of Raleigh

Appendix B
SW-26 – 2011 Sidewalk Construction

Traco Gypsum Flooring, Inc.	PO Box567	Oakridge	NC	27310	W	Tracy Cooke	336-643-9571;	336-644-1759		tracycooke@tracoconstruction.com	gypsum flooring; flashing and waterproofing; light weight concrete	
Triad Curb & Concrete, Inc.	3716 Mount Zion Church Road	Mebane	NC	27302	W	Sharon Bennett	336-578-0007	336-578-0006		twilson@triadcurb.com	concrete curb & gutter; sidewalk; paving; asphalt paving	
W. E. Garrison Company, Inc.	5820 Fayetteville Rd.	Raleigh	NC	27603	W	Colleen B. Garrison	919-772-4144	919-772-4860	919-306-6158	colleeng@wegarrison.com	Hauling; Clearing; Grading; Concrete Curb & Gutter & Flatwork; Demolition; Grubbing; Storm Drainage	N. C. General Contractors No. 4019
Wilson Lawn Service of Durham, Inc.	4608-O Industry Lane	Durham	NC	27713	M	Ernest Wilson	(919)572-9155	(919) 572-9153	(919) 730-6343	wilsonlawnofdurham@verizon.net	landscaping; lawn maintenance; mowing; clean-ups	City of Durham Privilege License

APPENDIX C

CERTI SMALL DISADVANTAGED BUSINESS ENTERPRISE (SDBE) REPORTING FORMS

CONTRACT: SW-26

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CITY OF DURHAM
SUBCONTRACTOR MONTHLY RECORD OF PAYMENT REPORT

THIS DOCUMENT MUST REFLECT ALL SUBCONTRACTORS & MUST BE SUBMITTED WITH MONTHLY INVOICE FOR PAYMENT	
PROJECT NAME: **CONTRACT#:**	**DATE FORM SUBMITTED:** **WORK PERIOD ENDING:**
COMPANY NAME:	**ADDRESS:**
FEDERAL TAX ID#:	**CONTACT PERSON:**

Subcontractor/Vendor ID (Street Address/Zip/Telephone)	Indicate Ownership Status	Description Of Work	Total Sub-Contract Amount	Amount Paid For The Period	Total Amount Paid To-Date	Percentage Of Work Completed	Scheduled Start Date	Scheduled End Date

Total M/SDBE Subcontracts Awarded/%	**$**	**%**	**Total W/SDBE Subcontracts Awarded/%**	**$**	**%**
Total M/SDBE Dollars Paid-To-Date/%	**$**	**%**	**Total W/SDBE Dollars Paid-To-Date/%**	**$**	**%**
Total Non-Minority Subcontracts Awarded/%	**$**	**%**	**Total Non-W/SDBE Subcontracts Awarded/%**	**$**	**%**
Total Non-Minority Dollars Paid-To-Date/%	**$**	**%**	**Total Non W/SDBE Dollars Paid-To-Date/%**	**$**	**%**

The undersigned certifies that the information recorded above is correct, and that each of the representations set forth above is true. The undersigned further acknowledges that any misrepresentation hereon may result in termination of contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

Company Representative_____ **Title:** _____ **Date:** _____

CITY OF DURHAM
Equal Business Opportunity Program
Final Subcontracting Report

THIS FORM MUST BE COMPLETED AND SUBMITTED TO THE PROJECT/CONTRACT ADMINISTRATOR FOR SUBMITTAL TO THE EO/EA DEPARTMENT WITHIN FIFTEEN (15) DAYS AFTER FINAL INSPECTION OF CONTRACT WORK.

Company Name: _____ **Project Name:** _____

Address: _____

Federal Tax ID#: _____ **Date Submitted:** _____

Date of Final Inspection: _____ **Total Final Contract Price:** _____

The following subcontractors performed work on the above project:

TYPE OF WORK	COMPANY NAME/ADRESS	FINAL PRICE	% OF TOTAL CONTRACT PRICE

Signature of Company Representative_____

Title: _____ **Date:** _____

Contract Compliance ____Approved ____Denied

Signature: _____

APPENDIX D

DURHAM

1869

CITY OF MEDICINE

SMALL DISADVANTAGED BUSINESS ENTERPRISE (SDBE) CONTRACTOR PREQUALIFICATION FORMS

CONTRACT: SW-26

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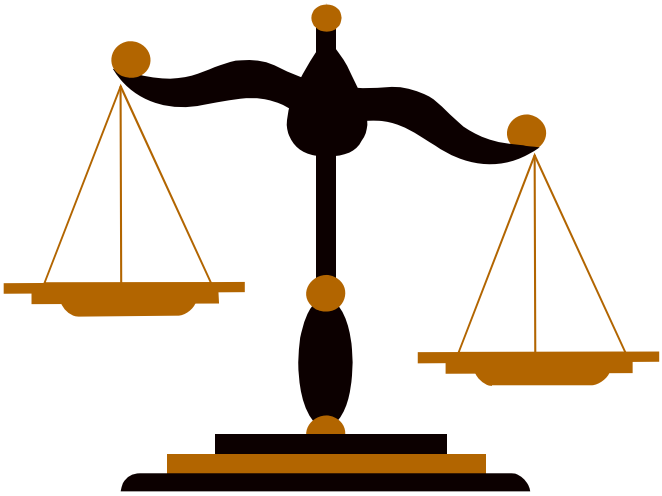
CITY OF DURHAM
SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

PREQUALIFICATION FORM

Revised 6/08



Mailing Address:

101 City Hall Plaza
Durham, North Carolina 27701
Phone: 919-560-4180
Facsimile: 919-560-4513

Street Address:

302 East Pettigrew Street, C-180
Durham, North Carolina 27701

The Department of Equal Opportunity/Equity Assurance

Good Things Are Happening In Durham

APPLICATION FOR PREQUALIFICATION

The answers to the following questions shall be used to determine the qualifications of my organization to bid upon construction projects undertaken by the City. You may submit an AIA Contractor's Qualification Statement in lieu of questions 1-23. Questions 24-30 must be submitted with the Statement.

1. Name of Firm: _____

2. Business Address: _____

   City: _____ State: _____ Zip: _____ County: _____

3. Telephone Number: ( ) _____ Fax Number: ( ) _____

   Email Address: _____

. 4. Contact Person : _____ Title: _____

5. The organization is requesting prequalification as:

   ☐ Corporation ☐ Limited Partnership ☐ General Partnership

   ☐ Sole-Proprietorship ☐ Limited Liability Company ☐ Other

6. If a corporation, Limited Liability Co., or Limited Partnership, indicate the following:

   Date of Incorporation or other official commencement of status _____

   State of Incorporation or other official commencement of status_____

7. Internal Revenue Service ID No: _____

   (Employer ID/SSN): _____

8. Year business established by current owner: _____

9. Are you authorized to do business in North Carolina as well as locally, including all business licenses?

   Yes ☐ No ☐ (Attach copies)

10. List North Carolina Contractor's License Number, classification and Limitation:

License Type	License No.	Classification	Limitation

11. Indicate the type(s) of work for which the business would like to qualify to perform:

_____

_____

12. How many years has your organization been in business as a contractor under your present name?

_____

13. Has your organization been in business under another business name? Yes ☐ No☐
(If so, please list any former names and addresses. _____

_____

14. List the construction experience of the management personnel including superintendents of your organization.

Name	Present Position	Years of Construction Experience	Type of Work	In What Capacity

15. Has your organization failed to complete any work awarded to you? Yes ☐ No☐
(If so, please explain. Attach additional sheets if necessary.)

_____

_____

16. Has any officer or partner of your organization ever been an officer or partner of some other organization that failed to complete a construction project? Yes ☐ No☐ (If so, please explain)

_____

_____

17. Has your organization ever been denied prequalification in this state or any other state under this name or any other name?

Yes ☐ No☐ (If so, name the state(s), and explain reasons for denial)

_____

_____

18. Has your organization ever been disqualified or removed from a bidding list in this state or any other state?
Yes ☐ No☐ (If so, indicate state(s) and explain reason for disqualification)

_____

_____

19. List major projects which show the various types of work completed by your organization in the past five (5) years and/or presently under construction. (Attach separate sheet if necessary)

Name and Address of Owner	Name and Location of Project	Contract Amount	Was contract completed on time?	Were there any penalties imposed?	Were there any liens, claims or stop notices filed against the job?

20. List major Equipment owned. (Attach separate sheet if necessary)

QUANTITY	ITEM	SIZE OR CAPACITY	CONDITION	YEARS OF SERVICE

21. Name of Bonding Company: _____

22. Maximum Current Bonding Level: _____

23. Attach a current financial statement including a balance sheet showing the following items:

a) Current assets
b) Net fixed assets
c) Other assets
d) Current liabilities
e) Other liabilities

24. Does your organization utilize minority, women or SDBE subcontractors on contracts that are not let by the City of Durham?

Yes ☐ No ☐ (If yes, list three contracts and the minority, women or SDBE firms used by your organization on these contracts)

Name and Location of Project	SDBE Firm Utilized	Dollar Amount of Participation	Contact Person and Telephone No.

25. For the contracts referenced above, did your organization make good faith efforts to assist interested minority, women and SDBEs in obtaining bonding, lines of credit, or insurance if such assistance was necessary?
Yes ☐ No ☐

26 . Does your organization make voluntary efforts to increase the number of minority, female and socially and economically disadvantaged individuals at higher skill and responsibility levels within your own organization? Yes ☐ No ☐

27. Does your organization effectively use the services of available minority, women and socially and economically disadvantaged community organizations; contractor groups; local, state, and Federal minority/women or small disadvantaged business assistance offices; and other organizations which provide assistance in recruitment and placement of SDBEs? Yes ☐ No ☐

28. Does your organization participate in minority/women apprenticeship or on-the-job training programs?
Yes ☐ No ☐ (If yes, attach a copy of your company's program)

29. Attach a written narrative of any voluntary good faith efforts your organization proposes to undertake during the upcoming year to provide equitable participation of minority and women employees and subcontract.

30. The following documents must be submitted with your application: (Forms Enclosed)
(You may submit your organization's EEO Policy in lieu of this statement)

a) Employee Breakdown
b) Equal Employment Opportunity Statement

EMPLOYEE BREAKDOWN

Part A – Employee Statistics for the Primary Location

		M--------a--------l--------e--------s						F-----e-----m-----a-----l-----e-----s					
Employment Category	Total Employees	Total Males	Total Females	White	Black	Hispanic	Asian or Alaskan Islander	Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project Manger													
Professional													
Labor													
Clerical													
Totals													

Part B – Employee Statistics for the Consolidated Company (*See instructions for this form on whether this part is required.*)

		M--------a--------l--------e--------s						F-----e-----m-----a-----l-----e-----s					
Employment Category	Total Employees	Total Males	Total Females	White	Black	Hispanic	Asian or Alaskan Islander	Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project Manger													
Professional													
Labor													
Clerical													
Totals													

EEO-1 Report may be submitted in lieu of this form

Equal Employment Opportunity Statement

AFFIDAVIT

_____ _____
(signature) *(date)*

_____
(printed name)

State of _____ County of _____

I, a notary public in and for the aforesaid county and state, certify that _____

_____ personally appeared before me this day and, after having been

duly sworn, stated that he or she is _____
(title)
in _____ ; that he or she was
(name of Applicant)
authorized to sign the foregoing application on behalf of said Applicant, and that the statements contained in the foregoing Application for Prequalification are true to the best of his or her knowledge and belief. This the _____ day of _____, 20_____.

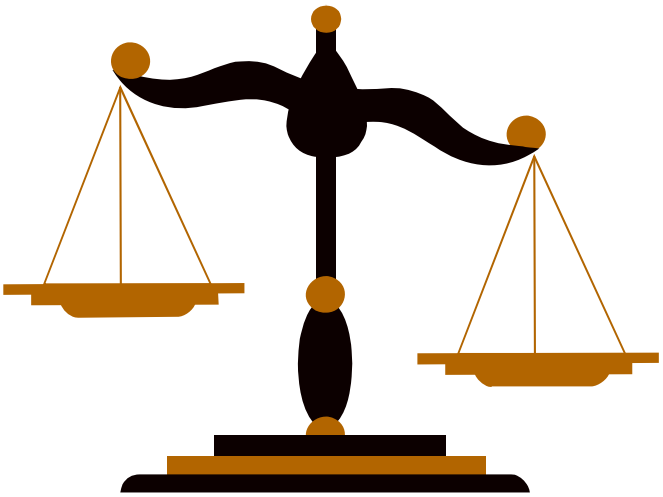
My commission expires: _____

_____ Notary Public

CITY OF DURHAM
SMALL DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

PREQUALIFICATION RENEWAL FORM

Revised 6/08



Mailing Address:

101 City Hall Plaza
Durham, North Carolina 27701
Phone: 919-560-4180
Facsimile: 919-560-4513

Street Address:

302 East Pettigrew Street, C-180
Durham, North Carolina 27701

The Department of Equal Opportunity/Equity Assurance

Good Things Are Happening In Durham

The answers to the following questions shall be used to determine the qualifications of my organization to bid on construction projects undertaken by the City.

1. Name of Firm: _____

2. Business Address: _____

   City: _____ State: _____ Zip: _____ County: _____

3. Telephone Number: ( ) _____ Fax Number: ( ) _____

   Email Address: _____

. 4. Contact Person : _____ Title: _____

If the status of your organization has changed since you were pre-qualified please answer questions 5 and 6. If not, proceed to question 7.

5. The organization is requesting prequalification as:

   ☐ Corporation ☐ Limited Partnership ☐ General Partnership

   ☐ Sole-Proprietorship ☐ Limited Liability Company ☐ Other

6. If a corporation, Limited Liability Co., or Limited Partnership, indicate the following:

   Date of Incorporation or other official commencement of status _____

7. State of Incorporation or other official commencement of status_____
   Are you authorized to do business in North Carolina as well as locally, including North Carolina Contractor's License and all business licenses?

   Yes ☐ No ☐ (Attach current copies)

8. Maximum Current Bonding Level: _____

9. List major projects which show the various types of work completed by your organization in the past year and/or presently under construction. (Attach separate sheet if necessary)

Name and Address of Owner	Name and Location of Project	Contract Amount	Was contract completed on time?	Were there any penalties imposed?	Were there any liens, claims or stop notices filed against the job?

10. Did your organization utilize minority, women or SDBE subcontractors on contracts that are not let by the City of Durham? Yes ☐ No ☐ (If yes, list three contracts and the minority, women or SDBE firms used by your organization on these contracts)

Name and Location of Project	SDBE Firm Utilized	Dollar Amount of Participation	Contact Person and Telephone No.

11. For the contracts referenced above, did your organization make good faith efforts to assist interested minority, women and SDBEs in obtaining bonding, lines of credit, or insurance if such assistance was necessary? Yes ☐ No ☐

. 12. Did your organization make voluntary efforts to increase the number of minority, female and socially and economically disadvantaged individuals at higher skill and responsibility levels within your own organization? Yes ☐ No ☐

13. Did your organization effectively use the services of available minority, women and SDBE community organizations; contractor groups; local, state, and Federal minority, women and small disadvantaged business assistance offices; and other organizations which provide assistance in recruitment and placement of SDBEs? Yes ☐ No ☐

14. Did your organization participate in minority/women apprenticeship or on-the-job training programs? Yes ☐ No ☐ (If yes, attach a copy of your company's program)

15. Attach a written narrative of any voluntary good faith efforts your organization proposes to undertake during the upcoming year to provide equitable participation of minority and women employees and subcontractors.

16. The following document must be submitted with your application.

    a) Employee Breakdown
    b) Equal Employment Opportunity Statement

EMPLOYEE BREAKDOWN

Part A – Employee Statistics for the Primary Location

			M--------a--------l--------e--------s					F-----e-----m-----a-----l-----e-----s					
Employment Category	Total Employees	Total Males	Total Females	White	Black	Hispanic	Asian or Alaskan Islander	Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project Manger													
Professional													
Labor													
Clerical													
Totals													

Part B – Employee Statistics for the Consolidated Company (*See instructions for this form on whether this part is required.*)

			M--------a--------l--------e--------s					F-----e-----m-----a-----l-----e-----s					
Employment Category	Total Employees	Total Males	Total Females	White	Black	Hispanic	Asian or Alaskan Islander	Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project Manger													
Professional													
Labor													
Clerical													
Totals													

EEO-1 Report may be submitted in lieu of this form

EQUAL EMPLOYMENT OPPORTUNITY STATEMENT

AFFIDAVIT

_____ _____

(signature) *(date)*

_____

(printed name)

State of _____ County of _____

I, a notary public in and for the aforesaid county and state, certify that _____

_____ personally appeared before me this day and, after having been

duly sworn, stated that he or she is _____

(title)

in _____ ; that he or she was

(Name of Applicant)

authorized to sign the foregoing application on behalf of said Applicant, and that the statements contained in the foregoing Application for Prequalification are true to the best of his or her knowledge and belief. This the _____ day of _____, 20_____.

My commission expires: _____

_____ Notary Public

APPENDIX E

NON-COLLUSION AFFIDAVIT FORMS FOR BIDDER AND SUBCONTRACTOR

CONTRACT: SW-26

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NON-COLLUSION AFFIDAVIT OF BIDDER

State of_____ County of_____
_____, being first duly sworn, deposes and says that:

1. He is _____ of _____, the Bidder that has submitted the attached Bid;

2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

3. Such Bid is genuine and is not a collusive or sham Bid;

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from Bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy connivance or unlawful agreement any advantage against the ____ _____ (Local Public Agency) or any person interested in the proposed Contract; and

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

(Signed) _____

_____
Title

Subscribed and sworn to before me this
_____ day of _____, _____

_____
Title

My Commission Expires _____

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of_____ County of_____
_____, being first duly sworn, deposes and says that:

1. He is _____ of _____, hereinafter referred to as the "Subcontractor";

2. He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to_____, the Contractor for certain work in connection with the _____ Contract pertaining to the Project in _____ (City or County and State);

3. Such Subcontractor's Proposal is genuine and is not a collusive or sham proposal;

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

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

(Signed) _____

_____
Title

Subscribed and sworn to before me this
_____ day of _____, _____

_____
Title

My Commission Expires _____

APPENDIX F

DURHAM

1869

CITY OF MEDICINE

BID BOND FORMS

CONTRACT: SW-26

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BID BOND for the City of Durham

Contract name and number or other description of the Contract:

Name of Bidder:

Name, address, and telephone number of Surety's N. C. Resident Agent:

Telephone number of Surety's home office:

Surety is a corporation organized and existing pursuant to the laws of the State of:

Amount of this bond: *check one:*

☐ *(write or type the amount in words and figures*) All numbers in this section are in U. S. dollars.

($)

☐ five percent of the amount of the proposal

Date of execution of this bond:

Obligee: CITY OF DURHAM, a North Carolina municipal corporation.

* * * * * * * * * * * * * * * * * * * *

KNOW ALL PERSONS BY THESE PRESENTS, that the Surety executing this bond, which Surety is duly licensed to act as surety in North Carolina, is held and firmly bound unto the City of Durham, Obligee, in the penal sum of the amount stated above, for the payment of which sum, well and truly to be made, the Surety binds itself and its successors and assigns, jointly and severally, by these presents. Whereas the Bidder is herewith submitting a proposal for the Contract referred to above, and the Bidder desires to file this Bid Bond in lieu of making the cash deposit pursuant to G.S. 143-129; NOW THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION is such, that if the Bidder shall be awarded the contract for which the bond is submitted, and shall, within ten days after the award is made, execute and deliver to the Obligee the contract and give satisfactory surety as required by G.S. 143-129, then this obligation shall be null and void, otherwise to remain in full force and virtue; and if the Bidder fails or refuses to so execute and deliver said contract or give said satisfactory surety, the Surety shall upon demand forthwith pay to the Obligee the full penal sum of this bond. The Surety waives all extensions of time, and notice of extensions of time, for the opening of proposals and for the modification, award, execution, and delivery of the contract. IN WITNESS WHEREOF, the Surety has executed this instrument under its seal as of the date of execution indicated above, pursuant to authority of its governing body.

_____

(name of Surety)

_____

(signature of Surety's attorney in fact)

(Affix Surety's corporate seal.)

(Instructions to Surety: If you use a raised corporate seal, press hard enough to make it legible)

Bid Bond Page 1 RNW:071301

ACKNOWLEDGMENT OF SURETY'S EXECUTION OF BID BOND

State of _____ County of _____

I, _____, a notary public in and for said county and state, certify that _____ personally appeared before me this day and acknowledged that he or she is Attorney in Fact for _____, the Surety named in the foregoing Bid Bond, in which bond the Obligee is the City of Durham, and that he or she executed said bond, under the seal of the Surety, on behalf of the Surety.

This the _____ day of _____, 20_____.

My commission expires: _____

_____ Notary Public

Bid Bond Page 2 RNW:071301

APPENDIX G

PERFORMANCE BOND AND PAYMENT BOND FORMS

CONTRACT: SW-26

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PERFORMANCE BOND AND PAYMENT BOND

Date of Contract: _____

Contract Name and Number: _____

_____

Name of Principal (Name of Contractor): _____

_____

Name of Surety: _____

_____

Name and Address of Surety's NC Resident Agent: _____

_____

Contracting Body: **CITY OF DURHAM**, a North Carolina municipal corporation
Amount of Performance Bond (in words and figures): _____
_____dollars ($_____)

Amount of Payment Bond: same dollar amount as the dollar amount of Performance Bond.

Date of Execution of these Bonds: _____

* *

KNOW ALL PERSONS BY THESE PRESENTS, that we, the PRINCIPAL AND SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, administrators, and successors, jointly and severally, by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into a certain Contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term of said Contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the Contract, and

shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue. As used hereinabove, "modifications" shall include, without limitation, changes (including, without limitation, changes granting extensions of time) and additions to with respect to the Work, scope of work, and specifications.

* *

KNOW ALL PERSONS BY THESE PRESENTS, that we, the PRINCIPAL AND SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into a certain Contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the Principal shall promptly make payment to all persons supplying labor and material in the prosecution of the Work provided for in said Contract, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue. As used hereinabove, "modifications" shall include, without limitation, changes (including, without limitation, changes granting extensions of time) and additions to or with respect to the Work, scope of work, and specifications.

* *

The Performance Bond and the Payment Bond are being combined here only for purposes of convenience in signing and acknowledging, and the obligations of the Principal and of the Surety are the same as if the bonds were on separate documents. Each bond is in the dollar amount stated above, and the amounts of these bonds are not combined. The Surety agrees that both of these bonds are fully binding on it whether or not the Principal executes these bonds. These bonds are given pursuant to Article 3 of Chapter 44A of the NC General Statutes.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument (for both the Performance Bond and the Payment Bond) under their several seals on the date of execution indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

_____

(name of Principal)

ATTEST:

_____ By:_____

_____Secretary _____President

(Affix corporate seal)

_____

(name of Surety)

_____

(name of attorney in fact)

(Affix corporate seal)

(Note: If you use a raised corporate seal, press hard enough to make it legible.)

ACKNOWLEDGEMENT OF CONTRACTOR'S EXECUTION OF CONTRACT, PERFORMANCE BOND, AND PAYMENT BOND

State of _____ County of _____

I, _____, a notary public for the aforesaid county and state, certify that _____ personally appeared before me this day, and acknowledged that he or she is _____ Secretary of _____, a corporation, and that by authority duly given and as the act of the corporation, the foregoing (1) Contract with the City of Durham and (2) Performance Bond and Payment Bond with respect to the Contract, were signed in its name by its _____President, whose name is _____, sealed with its corporate seal, and attested by him/herself as its said Secretary or Assistant Secretary.

This the ____ day of _____, _____.

_____
NOTARY PUBLIC

My commission expires: _____

ACKNOWLEDGEMENT OF SURETY'S EXECUTION OF PERFORMANCE BOND, AND PAYMENT BOND

State of _____ County of _____

I, _____, a Notary Public for said county and state, certify that _____, personally appeared before me this day and acknowledged that he or she is Attorney in Fact for _____, the Surety named in the foregoing Performance Bond and Payment Bond, in both of which bonds the contracting body is the City of Durham, and that he or she executed said bonds, under the seal of said Surety, on behalf of said Surety.

This the ____ day of _____, _____.

_____
NOTARY PUBLIC

My commission expires: _____

APPENDIX H

REIMBURSABLE SALES AND USE TAX STATEMENT FORMS

CONTRACT: SW-26

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APPENDIX H

Reimbursable Sales and Use Tax Statement

Payment Application No. _____ **Estimate No.** _____
Name of Contractor: _____
Project: _____

*1. Type of property purchased **	*2. Date property purchased*	*3. Name of vendor*	*4. Invoice number*	*5. Date of invoice*	*6. N. C. county in which purchased.***	*7. Amount of **State** sales and use taxes paid*	*8. Amount of **local** sales and use taxes paid*	*9. Total of columns 7 & 8*

Grand totals of columns 7, 8, & 9 for all pages of this pay application/estimate.	//		

Notes: * If the invoice clearly specifies the property for which tax reimbursement is being requested, you need not list the property on this form.
** In column 6, if not purchased in N. C., write *Not in N.C.*

Add extra pages as needed. Total number of pages, including this page, in this request: **_____. *Do not include invoices in that page count.***
In addition to the pages referred to above, invoices that substantiate this statement are attached.
CERTIFICATION: The undersigned individual certifies (1) he or she is an employee or principal of the Contractor that is filing this form with the City to request reimbursement for N. C. State and local sales and use taxes that the Contractor has paid, (2) all of the properties listed above, and on all pages, if any, added to this page, and designated on the attached invoices, are building materials, supplies, fixtures, and equipment that have become or will become a part of or annexed to a building or structure that is owned or leased by the City of Durham and is being erected, altered, or repaired for use by the City of Durham in the project named above, (3) no tax on scaffolding, tools, equipment repair parts, equipment rentals, forms for concrete, or fuel to operate machinery or equipment is included, and (4) all of the information on this form, and on all pages, if any, added to this page, is true.

_____ _____
signature of individual typed or printed name of individual

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

_____ My commission expires:
022304RW Notary Public

APPENDIX H

Reimbursable Sales and Use Tax Statement, Continuation page

*1. Type of property purchased **	*2. Date property purchased*	*3. Name of vendor*	*4. Invoice number*	*5. Date of invoice*	*6. N. C. county in which purchased.***	*7. Amount of **State** sales and use taxes paid*	*8. Amount of **local** sales and use taxes paid*	*9. Total of columns 7 & 8*

Enter totals of columns 7, 8, and 9 ,added to totals from all pages, into page 1. This page is used whether page 1 is signed by the Contractor or the Subcontractor.
022304RW

APPENDIX H

Reimbursable Sales and Use Tax Statement by Subcontractor

This line is to be completed by the Contractor: **Payment Application No**. _____ **Estimate No.** _____

Name of Contractor: _____ Name of Subcontractor _____
Project: _____

*1. Type of property purchased **	*2. Date property purchased*	*3. Name of vendor*	*4. Invoice number*	*5. Date of invoice*	*6. N. C. county in which purchased.***	*7. Amount of **State** sales and use taxes paid*	*8. Amount of **local** sales and use taxes paid*	*9. Total of columns 7 & 8*

Grand totals of columns 7, 8, & 9 for all pages of this pay application/estimate.			

Notes: * If the invoice clearly specifies the property for which tax reimbursement is being requested, you need not list the property on this form.
** In column 6, if not purchased in N. C., write *Not in N.C.*

Add extra pages as needed. Total number of pages, including this page, in this request: **_____. *Do not include invoices in that page count.***
In addition to the pages referred to above, invoices that substantiate this statement are attached.
CERTIFICATION: The undersigned individual certifies (1) he or she is an employee or principal of the Subcontractor that is submitting this form with the Contractor so that the Contractor may request reimbursement for N. C. State and local sales and use taxes that the Subcontractor has paid, (2) all of the properties listed above, and on all pages, if any, added to this page, and designated on the attached invoices, are building materials, supplies, fixtures, and equipment that have become or will become a part of or annexed to a building or structure that is owned or leased by the City of Durham and is being erected, altered, or repaired for use by the City of Durham in the project named above, (3) no tax on scaffolding, tools, equipment repair parts, equipment rentals, forms for concrete, or fuel to operate machinery or equipment is included, and (4) all of the information on this form, and on all pages, if any, added to this page, is true.

_____ _____
signature of individual typed or printed name of individual

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

_____ My commission expires:
022304RW Notary Public

APPENDIX H

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APPENDIX I

DURHAM

1869

CITY OF MEDICINE

SUBMITTAL TRANSMITTAL FORM AND SUBMITTAL REGISTER FORM

CONTRACT: SW-26

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SUBMITTAL TRANSMITTAL FORM

Attention:
City of Durham - Department of Public Works
Engineering Division
101 City Hall Plaza
Durham, North Carolina 27701

CONTRACTOR SHALL COMPLETE THIS SECTION

Transmittal No.: ……..

Date of Submittal: ……..……

Re-submittal: …….. Yes ……..……. No

Description: …….

…….

Drawing No.: ……..

Specification Section: …….

Submittal Classification: …….

Submittal Code: ……..

Subcontractor: …….

Supplier: …….

Contractor's Certification:

The review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

…….
(Contractor Submittal Manager Signature)

(Seal)

ENGINEER/CITY OF DURHAM SHALL COMPLETE THIS SECTION

Date of Receipt.…….

…….. Approved by Engineer (AE)
Approved by City (AC)
No exceptions noted.

…….. Approved by Engineer (AEC)
Approved by City (ACC)
With corrections as noted on the submittal data or attachments, re-submittal not required.

…….. Disapproved by Engineer (DE)
Disapproved by City (DC)
Re-submittal required.

Date of Review/Approval: ……..

Comments: ……..

…….

…….
(Engineer/City Signature)

(Seal)

PLACE CONTRACTOR SUBMITTAL REVIEW STAMP AND ENGINEER/CITY SUBMITTAL REVIEW STAMP ON REVERSE PAGE

PLACE CONTRACTOR SUBMITTAL
REVIEW STAMP BELOW

PLACE ENGINEER/CITY SUBMITTAL
REVIEW STAMP BELOW

Item No.	Transmittal No.	Submittal Classification	Description	Drawing No. or Specification Section	Submittal Code	Contractor Schedule Data							Review/Approval		Comments, Remarks, Follow-up
						Construction Activity	Planned Activity Start Date	Review Period (Days)	Requested Date for Approval	Product Purchase Period (Days)	Scheduled Date of Submittal	Actual Date of Submittal	Review/Approval Action Code	Date of Review/Approval	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p

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APPENDIX J

DURHAM

1869

CITY OF MEDICINE

PRIMAVERA

CONTRACT: SW-26

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CONTRACT AND PROJECT MANAGEMENT SYSTEM - REQUIREMENTS AND WORKFLOW

Software Overview and Computer Requirements

The Contract will make extensive use of the Primavera Contract and Project Management system. The system consists of two software tools, namely; 1) *Contract Manager* for Contract Management, and 2) *P6* Project Management. The Contractor is required to utilize both software tools as described in this section, and other relevant sections of the Contract Specifications. If the Contractor is not familiar with this software he/she is highly encouraged to visit the web site www.primavera.com and gain the understanding necessary prior to bidding.

It will be the Contractor's responsibility to provide the appropriate computers and any and all related and necessary peripherals for this use. The computers shall have Windows XP Service Pack 2, installed as an operating system, along with Windows Internet Explorer Version 7 browser for web access. The Primavera *Contract Manager* and *P6* software tools are accessed through the web browser using Java run-time plug-in technologies. The Java plug-in is automatically downloaded and installed during initial web browser access to the software. This process requires "Administrative" privileges on the computer, and the Contractor shall be responsible for this entire process. It is suggested that the broadband connection speed be approximately 1.5 Mbps to allow for responsive data transfer to/from the City network. It is suggested that the computer's operating system be maintained with updates throughout the Contract duration.

City staff will be available for technical advice. However, the City staff will not operate, install, or troubleshoot any of the Contractor's hardware or software issues. The Contractor is solely responsible for the functionality of their computer systems. The City will accept no liabilities arising from the Contractor's use of this software.

Project Schedule

Upon award of the Contract, the Contractor will receive a Notice to Proceed to develop a comprehensive *P6* Schedule. Subsequent to completion and City approval of the *P6* Schedule, the Contractor will receive a Notice to Proceed for Construction. No site work shall commence without receiving the Notice to Proceed for Construction from the City.

Prior to preparation of the *P6* Schedule, the Contractor shall provide a proposed Organization Breakdown Structure (OBS) and Work Breakdown Structure (WBS) to the City for review, comment and approval. The WBS shall reflect the each of the Contract pay items in the bid proposal.

The WBS and overall project schedule in *P6* shall be linked to the Contract as established in Primavera *Contract Manager*. This link will allow for automatic updates of the project schedule as the work is completed and logged into Contract Manager. The Contractor is responsible for periodic updates to the *P6* Schedule as determined by the City at the time of the pre-construction meeting.

Contract Manager Setup

A single project shall be established in *Contract Manager* for the Contract. The project shall have as a schedule of values containing the Contractor's quantity estimate for each pay item in the bid proposal along with the Contract unit price. This will establish a budget for the Contract.

The City staff has developed software which will allow the data described in the paragraph above to be batch loaded into *Contract Manager* via Microsoft Excel spreadsheets to streamline data entry into the *Contract Manager* graphical user interface (GUI). The City will provide the Excel Spreadsheet templates to the Contractor. The Contractor will prepare the schedule of values based on the bid items.

The Contractor will submit the completed spreadsheets to the City staff for review and approval. Once the submittal is approved, the City staff will batch load the project data into *Contract Manager*. The Contractor will be responsible to check and verify the data once it is in *Contract Manager*, and perform any cleanup of the data that may be necessary. The Contractor will complete the setup by testing the linkage between *Contract Manager* and *P6*.

Daily Report Work Flow, Review and Approval Process

Once all of the software setup in the paragraphs above is complete and the Contractor has been issued a Notice to Proceed for Construction, the daily report work flow process can begin. The Contractor is responsible for logging daily reports in *Contract Manager* on the next business day following the work performed. The daily reports will be logged individually in *Contract Manager*.

The Contractor shall assign the "ball-in-court" status for the review and approval of each daily report to the City Inspector assigned to the project. The City Inspector shall review the daily report the following business day and either approve it if satisfactory, or assign the "ball-in-court" back to the Contractor with notes indicating the areas of disagreement. The Contractor and City Inspector shall work together to come to an agreement on the daily report so that is can be approved prior to the payment process described below.

The Contractor shall use the "Telephone Logs" module in *Contract Manage*r to document important phone calls pertaining to project activities. The Contractor shall use the "Attachments" feature in the Daily Report module to electronically attach any pertinent documents, drawings, or photos.

Payment Requisition Process

All payment requisition(s) shall be prepared using the *Contract Manager* software. As each payment requisition is generated, the software will automatically pull-in the quantities from (each of) the daily reports for the period that the requisition is being prepared for. It is important that the daily reports are entered correctly and approved on a timely basis to avoid delay in the payment requisition process. Payment requisitions will not be approved unless they are created using this process.

Once the Contractor has prepared a *Contract Manager* payment requisition, the "ball-in-court" shall be assigned to the City Inspector for review and approval. The City Inspector shall review the payment requisition in the following business days and either approve it if satisfactory or assign the "ball-in-court" status back to the Contractor with notes which indicate the areas of disagreement. The Contractor and City Inspector shall work together to come to an agreement on the contents of the *Contract Manager* payment requisition.

Once the *Contract Manager* payment requisition(s) for the project(s) worked on during a billing period are approved, the Contractor shall print the AIA form(s) from *Contract Manager*. The Contractor shall summarize them into a 702 cover sheet, and incorporate all of the forms into the payment request package which includes other the forms and certificates as described in these contract documents.

Issues, Shop Drawings, Photographs and Project Correspondence

Contract Manager shall serve as the repository and clearing center for all digital correspondence generated during this project. *Contract Manager* has electronic logs for issues, shop drawings, photographs, project correspondence and e-mail. The *Contract Manager* software allows for the "ball-in-court" to be set on items which need to move back and forth for discussion and resolution prior to approval. The Contractor, and City Inspectors and staff, shall use these features for all correspondence generated on this Contract.