

INVITATION TO BID

**BID NO. 14-0085-4**

**HAMPTON PLACE DRAINAGE IMPROVEMENTS**

**PRE-BID CONFERENCE: 2:00 PM, JULY 31, 2014**

**BID OPENING: 2:00 PM, AUGUST 14, 2014**

THE COMMISSIONERS OF CHATHAM COUNTY, GEORGIA

ALBERT J. SCOTT, CHAIRMAN

COMMISSIONER HELEN J. STONE

COMMISSIONER YUSUF K. SHABAZZ

COMMISSIONER JAMES J. HOLMES

COMMISSIONER LORI L. BRADY

COMMISSIONER TONY CENTER

COMMISSIONER DEAN KICKLIGHTER

COMMISSIONER PATRICK J. FARRELL

COMMISSIONER PRISCILLA D. THOMAS

R. JONATHAN HART, COUNTY ATTORNEY

CHATHAM COUNTY, GEORGIA

DOCUMENT CHECK LIST

The following documents, when marked, are contained in and made a part of this Bid Package or are required to be submitted with the bid. It is the responsibility of the bidder to read, complete and sign, where indicated, and return these documents with his/her bid. **FAILURE TO DO SO MAY BE CAUSE FOR DISQUALIFYING THE BID.**

GENERAL INFORMATION AND INSTRUCTIONS TO BID WITH ATTACHMENTS

SURETY REQUIREMENTS - A Bid Bond of 5% with this ITB.

PROPOSAL

PLANS/DRAWINGS – Plans must be purchased at Clayton Digital Reprographics by logging into [www.cdrepro.com](http://www.cdrepro.com). Login to DFS. New users must register. For technical support contact CDR at (912) 447-5445, fax (912) 233-7020 or email: [cdwest@cdrepro.com](mailto:cdwest@cdrepro.com).

BID SCHEDULE

PERFORMANCE BOND – Required at the time of contract.

PAYMENT BOND – Required at the time of contract.

CONTRACT

LEGAL NOTICE

ATTACHMENTS: A. DRUG FREE WORKPLACE; B. NONDISCRIMINATION STATEMENT; C. DISCLOSURE OF RESPONSIBILITY STATEMENT; D. CONTRACTOR & SUBCONTRACTOR AFFIDAVIT AND AGREEMENT, E. BIDDER'S CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION, F. M/WBE PARTICIPATION REPORT, G. SYSTEMATIC ALIEN VERIFICATION FOR ENTITLEMENTS, H. CHATHAM APPRENTICE PROGRAM DOCUMENTATION

DOCUMENTATION OF ABILITY TO PERFORM BID REQUIREMENTS. THIS MAY BE REQUIRED OF BIDDERS AFTER SUBMISSION OF BIDS.

**COUNTY TAX CERTIFICATE REQUIREMENT** - Contractor must supply a copy of their Tax Certificate from their location in the State of Georgia, as proof of payment of the occupational

tax where their office is located.

CURRENT TAX CERTIFICATE NUMBER  
CITY \_\_\_\_\_  
COUNTY \_\_\_\_\_  
OTHER \_\_\_\_\_

**The Chatham County of Commissioners have established goals to increase participation of minority and woman owned businesses. In order to accurately document participation, businesses submitting bids or proposals are encouraged to report ownership status. A minority or woman owned business is defined as a business with at least 51% ownership by one or more minority/female individuals and whose daily business operations are managed and directed by one (1) or more of the minority/female owners. Please check ownership status as applicable:**

**African-American \_\_\_\_\_ Asian American \_\_\_\_\_ Hispanic \_\_\_\_\_**

**Native American or Alaskan Indian \_\_\_\_\_ Woman \_\_\_\_\_**

**In the award of "Competitive Sealed Proposals", minority/female participation may be one of several evaluation criteria used in the award process when specified as such in the Request for Proposal.**

RECEIPT IS HEREBY ACKNOWLEDGED OF ADDENDA NUMBER(S) \_\_\_\_\_

The undersigned bidder certifies that he/she has received the above listed and marked documents and acknowledges that his/her failure to return each, completed and signed as required, may be cause for disqualifying his/her bid.

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

\_\_\_\_\_  
SIGNATURE

TITLE: \_\_\_\_\_

COMPANY: \_\_\_\_\_

CHATHAM COUNTY, GEORGIA  
OFFICE OF THE PURCHASING AGENT  
1117 EISENHOWER DRIVE - SUITE C  
SAVANNAH, GEORGIA 31406  
(912) 790-1622

**Date: July 9, 2014**

**BID NO. 14-0085-4**

**GENERAL INFORMATION FOR INVITATION FOR BID**

This is an invitation to submit a bid to supply Chatham County with construction, equipment, supplies and/or services as indicated herein. Sealed bids will be received at the Office of the Purchasing Agent, at **The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia 31406 up to 2:00PM local time, AUGUST 14, 2014,** at which time they will be opened and publicly read. **The County reserves the right to reject all bids that are non-responsive or not responsible.**

Instructions for preparation and submission of a bid are contained in this Invitation For Bid package. Please note that specific forms for submission of a bid are required. Bids must be typed or printed in ink.

A **Pre-bid Conference** has been scheduled to be conducted at **The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia, on ,JULY 31, 2014, at 2:00PM,** to discuss the specifications and resolve any questions and/or misunderstanding that may arise. **You are encouraged to attend.**

Any changes to the conditions and specifications must be in the form of a written addendum to be valid; therefore, the Purchasing Agent will issue a written addendum to document each approved change. Generally when addenda are required, the bid opening date will be changed.

Chatham County has an equal opportunity purchasing policy. Chatham County seeks to ensure that all segments of the business community have access to supplying the goods and services needed by County programs. The County affirmatively works to encourage utilization of disadvantaged and minority business enterprises in our procurement activities. The County provides equal opportunity for all businesses and does not discriminate against any persons or businesses regardless of race, color, religion, age, sex, national origin or handicap. The terms "disadvantaged business," "minority business enterprise," and "minority person" are more specifically defined and explained in the **Chatham County Purchasing Ordinance and Procedures Manual, Article VII - Disadvantaged Business Enterprises Program.**

**This project IS a Special Purpose Local Option Sales Tax (SPLOST) Project. See paragraph 2.25 for MBE/WBE participation goals.**

**INSTRUCTIONS TO BIDDERS**

1.1 **Purpose:** The purpose of this document is to provide general and specific information for use in submitting a bid to supply Chatham County with equipment, supplies, and/or services as described herein. All bids are governed by the Code of Chatham County, Chapter 4, Article IV, and the laws of the State of Georgia.

1.2 **How to Prepare Bids: All bids shall be:**

- a. Prepared on the forms enclosed herewith, unless otherwise prescribed, and **all documents must be submitted.**
- b. Typewritten or completed with pen and ink, signed by the business owner or authorized representative, with all erasures or corrections initialed and dated by the official signing the bid. **ALL SIGNATURE SPACES MUST BE SIGNED.**

Bidders are encouraged to review carefully all provisions and attachments of this document prior to submission. Each bid constitutes an offer and may not be withdrawn except as provided herein.

1.3 **How to Submit Bids: All bids shall be:**

- a. **An original and duplicate copy must be submitted in a sealed opaque envelope, plainly marked with the bid number and title, date and time of bid opening, and company name.**
- b. Mailed or delivered as follows in sufficient time to ensure receipt by the Purchasing Agent on or before the time and date specified above.

- 1. **Mailing Address: Chatham County Purchasing and Contracting, 1117 Eisenhower Drive, Suite C, Savannah, Georgia 31406.**
- 2. **Hand Delivery: Purchasing Agent, Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia 31406.**

**BIDS NOT RECEIVED BY THE TIME AND DATE SPECIFIED WILL NOT BE OPENED OR CONSIDERED.**

1.4 **How to Submit an Objection:** Objections from bidders to this invitation to bid and/or these specifications should be brought to the attention of the County Purchasing Agent in the following manner:

- a. When a pre-bid conference is scheduled, bidders shall either present their oral objections at that time or submit their written objections at least two (2) days prior to the scheduled pre-bid conference.
  - b. When a pre-bid conference is not scheduled, the bidder shall submit any objections he may have in writing not less than five (5) days prior to the opening of the bid.
  - c. The objections contemplated may pertain to form and/or substance of the invitation to bid documents. Failure to object in accordance with the above procedure will constitute a waiver on the part of the business to protest this invitation to bid.
- 1.5 **Failure to Bid:** If a bid is not submitted, the business should return this invitation to bid document, stating reason therefore, and indicate whether the business should be retained or removed from the County's bidders list.
- 1.6 **Errors in Bids:** Bidders or their authorized representatives are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting bids. Failure to do so will be at the bidder's own risk. In case of error in extension of prices in the bid, the unit price will govern.
- 1.7 **Standards for Acceptance of Bid for Contract Award:** The County reserves the right to reject any or all bids and to waive any irregularities or technicalities in bids received whenever such rejection or waiver is in the best interest of the County. The County reserves the right to reject the bid of a bidder who has previously failed to perform properly or complete on time contracts of a similar nature, or a bid from a bidder whom investigation shows is not in a position to perform the contract.
- 1.8 **Bid Tabulation:** Tabulations for all bids will be posted for thirty (30) days after the bid opening in the Office of Purchasing and Contracting, 1117 Eisenhower Drive, Suite C, Savannah, Georgia 31406 or can be reviewed on the Purchasing web site 24/48 hours after opening at <http://purchasing.chathamcounty.org>.
- 1.9 **Bidder:** Whenever the term "bidder" is used it shall encompass the "person," "business," "contractor," "supplier," "vendor," or other party submitting a bid or proposal to Chatham County in such capacity before a contract has been entered into between such party and the County.
- 1.10 **Responsible / Responsive Bidder:** *Responsible Bidder* means a person or entity that has the capability in all respects to perform fully and reliably the contract requirements. *Responsive Bidder* means a person or entity that has submitted a bid or proposal that

conforms in all material respects to the requirements set forth in the invitation for bids or request for proposals.

- 1.11 **Compliance with Laws:** The bidder and/or contractor shall obtain and maintain all licenses, permits, liability insurance, workman's compensation insurance and comply with any and all other standards or regulations required by federal, state or County statute, ordinances and rules during the performance of any contract between the contractor and the County. Any such requirement specifically set forth in any contract document between the contractor and the County shall be supplementary to this section and not in substitution thereof.
- 1.12 **Contractor:** Contractor or subcontractor means any person or business having a contract with Chatham County. The Contractor/Vendor of goods, material, equipment or services certifies that they will follow equal employment opportunity practices in connection with the awarded contract as more fully specified in the contract documents.
- 1.13 **Local Preference:** On 27 March 1998, the Board of Commissioners adopted a "**Local Vendor**" Preference Ordinance that gives the lowest Chatham County vendor submitting a responsible bid/quote the opportunity to match the lowest price offered by an out-of-County vendor. If the County vendor confirms in writing to match within 24 hours, the award will be made to the Chatham County vendor. The lowest Chatham County responsive bidder will be afforded the "right to first refusal". "Local Vendor" is defined as a business or supplier which operates and maintains a regular place of business within the geographical boundaries of Chatham County or one of the local Municipalities of the County AND all real and personal property taxes are paid prior to award of a contract or purchase. "**NOT APPLICABLE TO PUBLIC WORKS CONSTRUCTION PROJECTS AND REVENUE PRODUCING BIDS.**" However, contractors are encourage to apply the same method when awarding bids to local M/WBE businesses whenever possible in order to promote growth in Chatham County's economy.
- 1.14 **Debarred Firms and Pending Litigation:** Any potential proposer/firm listed on the Federal or State of Georgia Excluded Parties Listing (Barred from doing business) **will not** be considered for contract award. Proposers **shall disclose** any record of pending criminal violations (Indictment) and/or convictions, pending lawsuits, etc., and any actions that may be a conflict of interest occurring within the past five (5) years. Any proposer/firm previously defaulting or terminating a contract with the County will not be considered.

\*\* All bidders or proposers are to read and complete the Disclosure of Responsibility Statement enclosed as an Attachment to be returned with response. Failure to do so may result in your solicitation response being rejected as non-responsive.

Bidder acknowledges that in performing contract work for the Board, bidder shall not utilize any firms that have been a party to any of the above actions. If bidder has engaged any firm to work on this contract or project that is later debarred, Bidder shall sever its

relationship with that firm with respect to Board contract.

1.15 **Performance Evaluation:** On 11 April 2008, the Chatham County Board of Commissioners approved a change to the County Purchasing Ordinance requiring Contractor/Consultant Performance Evaluations, as a minimum, annually, prior to contract anniversary date. Should Contractor/Consultant performance be unsatisfactory, the appointed County Project Manager for the contract may prepare a Contractor/Consultant Complaint Form or a Performance Evaluation to the County Purchasing Agent.

1.16 **Payment of Taxes:** No contract shall be awarded unless all real and personal property taxes have been paid by the successful contractor and/or subcontractors as adopted by the Board of Commissioners on 8 April 1994.

1.17 **State Licensing Board for General Contractors:** Pursuant to Georgia law, the following types of contractors must obtain a license from the State Licensing Board of Residential and General Contractors by 1 July, 2008 :

\***Residential - Basic Contractor** (Contractor work relative to detached one-family and two-family residences and one-family townhouses not over three stories in height).

\***Residential - Light Commercial Contractor** (Contractor work or activity related to multifamily and multiuse light commercial buildings and structures).

\***General Contractor** (Contractor work or activity that is unlimited in scope regarding any residential or commercial projects).

**See "Checklist for Submitting Bid" for the type of license required for this project.**

1.18 **Immigration:** On 1 July, the Georgia Security and Immigration Compliance Act (SB 529, Section 2) became effective. All contractors and subcontractors with 100 or more employees entering into a contract or performing work must sign an affidavit that he/she has used the E-Verify System. E-Verify is a no-cost federal employment verification system to insure employment eligibility.

Affidavits are enclosed in this solicitation. You may download M-274 Handbook for Employers at <http://www.dol.state.ga.us/spotlight/employment/rules>. You may go to <http://www.uscis.gov> to find the E-Verify information.

**Systematic Alien Verification for Entitlements (SAVE) Program:** O.C.G.A. 50-36-1, required Georgia's counties to comply with the federal **Systematic Alien Verification for Entitlements (SAVE) Program**. SAVE is a federal program used to verify that applicants for certain "public benefits" are legally present in the United States. Contracts with the County are considered "public benefits." Therefore, the successful bidder will be required to provide the Affidavit Verifying Status for Chatham County Benefit Application prior to receiving any County contract. The affidavit is included as part of this bid package but is

only required of the successful bidder.

**Protection of Resident Workers.** Chatham County Board of Commissioners actively supports the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification, and nondiscrimination. Under the INA, employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verification Form (I-9). The Contractor shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment.

- 1.19 **Chatham Apprentice Program Hiring:** Chatham County has established a Chatham Apprentice Program (CAP) to train area residents in the building trades. Successful Contractor shall be required to make a good faith effort to utilize labor from the CAP Program on this project when feasible. A Good Faith Effort will be demonstrated by documentation of inquiry into CAP labor available and resulting hiring of CAP labor or providing reasons for Contractor not utilizing any CAP labor. Form demonstrating Good Faith Effort is enclosed in this bid package. Contractor shall complete the form and return with their first pay request. All questions regarding CAP student hiring should be directed to Daniel Dodd-Ramirez at (912) 232-6747.

## GENERAL CONDITIONS

- 2.1 **Specifications:** Any obvious error or omission in specifications shall not inure to the benefit of the bidder but shall put the bidder on notice to inquire of or identify the same from the County. Whenever herein mentioned is made of any article, material or workmanship to be in accordance with laws, ordinances, building codes, underwriter's codes, A.S.T.M. regulations or similar expressions, the requirements of these laws, ordinances, etc., shall be construed to be the minimum requirements of these specifications.
- 2.2 **Multiple Bids:** No vendor will be allowed to submit more than one (1) bid. Any alternate proposals must be brought to the Purchasing Agent's attention during the Pre-bid Conference or submitted in writing at least five (5) days preceding the bid opening date.
- 2.3 Not Used.
- 2.4 **Prices to be Firm:** Bidder warrants that bid prices, terms and conditions quoted in his bid will be firm for acceptance for a period of sixty (60) days from bid opening date, unless otherwise stated in the bid.
- 2.5 **Completeness:** All information required by Invitation for Bids/Proposals must be completed and submitted to constitute a proper bid or proposal.

- 2.6 **Quality:** All materials, or supplies used for the construction necessary to comply with this proposal shall be of the best quality, and of the highest standard of workmanship. Workmanship employed in any construction, repair, or installation required by this proposal shall be of the highest quality and meet recognized standards within the respective trades, crafts and of the skills employed.
- 2.7 **Guarantee/Warranty:** Unless otherwise specified by the County, the bidder shall unconditionally guarantee the materials and workmanship for one (1) year on all material and/or services. If, within the guarantee period, any defects occur which are due to faulty material and or services, the contractor at his expense, shall repair or adjust the condition, or replace the material and/or services to the complete satisfaction of the County. These repairs, replacements or adjustments shall be made only at such time as will be designated by the County as being least detrimental to the operation of County business.
- 2.8 **Liability Provisions:** Where bidders are required to enter or go onto Chatham County property to take measurements or gather other information in order to prepare the bid or proposal as requested by the County, the bidder shall be liable for any injury, damage or loss occasioned by negligence of the bidder, his agent, or any person the bidder has designated to prepare the bid and shall indemnify and hold harmless Chatham County from any liability arising therefrom. The contract document specifies the liability provisions required of the successful bidder in order to be awarded a contract with Chatham County.
- 2.9 **Cancellation of Contract:** The contract may be canceled or suspended by Chatham County in whole or in part by written notice of default to the Contractor upon non-performance or violation of contract terms. An award may be made to the next low bidder, for articles and/or services specified or they may be purchased on the open market and the defaulting Contractor (or his surety) shall be liable to Chatham County for costs to the County in excess of the defaulted contract prices. See the contract documents for complete requirements.
- 2.10 **Patent Indemnity:** Except as otherwise provided, the successful bidder agrees to indemnify Chatham County and its officers, agents and employees against liability, including costs and expenses for infringement upon any letters patent of the United States arising out of the performance of this Contract or out of the use or disposal for the account of the County of supplies furnished or construction work performed hereunder.
- 2.11 **Certification of Independent Price Determination:** By submission of this bid, the bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that in connection with this procurement:
- (1) The prices in this bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

- (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
  - (3) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not be submit a bid for the purpose or restricting competition.
- 2.12 **Award of Contract:** The contract, if awarded, will be awarded to that responsible bidder whose bid/proposal will be most advantageous to Chatham County, price and other factors considered. The Board of Commissioners will make the determination as to which bid or proposal that serves as the best value to Chatham County.
- 2.13 **Procurement Protests:** Objections and protests to any portion of the procurement process or actions of the County staff may be filed with the Purchasing Agent for review and resolution. The Chatham County Purchasing Procedures Manual, Article IX - Appeals and Remedies shall govern the review and resolution of all protests.
- 2.14 **Qualification of Business (Responsible Bidder or Proposer):** A responsible bidder or proposer is defined as one who meets, or by the date of the bid acceptance can meet, certifications, all requirements for licensing, insurance, and registrations, or other documentation required by the Design Professional engaged to develop Scope of Work, specifications and plans. These documents will be listed in the Special Conditions further on in this solicitation. Chatham County has the right to require any or all bidders to submit documentation of the ability to perform, provide, or carry out the service or provide the product requested.
- Chatham County has the right to disqualify the bid or proposal of any bidder or proposer as being unresponsive or irresponsible whenever such bidder/proposer cannot document the ability to deliver the requested product.
- 2.15 **Chatham County Tax Certificate Requirement:** A current Chatham County Tax Certificate is required unless otherwise specified. Please contact the Building Safety and Regulatory Services at (912) 201-4300 for additional information.
- NOTE:** No contract shall be awarded unless all real and personal property taxes have been paid by the successful contractor and/or subcontractors as adopted by the Board of Commissioners on 8 April 1994.
- 2.16 **Insurance Provisions, General:** The selected contractor shall be required to procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

The cost of such insurance shall be included in the Bid.

It is every contractor's responsibility to provide the County Purchasing and Contracting Division current and up-to-date Certificates of Insurance for multiple year contracts before the end of each term. Failure to do so may be cause for termination of contract.

2.16.1 General Information that shall appear on a Certificate of Insurance:

- I. Name of the Producer (Contractor's insurance Broker/Agent).
- II. Companies affording coverage (there may be several).
- III. Name and Address of the Insured (this should be the Company or Parent of the firm Chatham County is contracting with).
- IV. A Summary of all current insurance for the insured (includes effective dates of coverage).
- V. A brief description of the operations to be performed, the specific job to be performed, or contract number.
- VI. Certificate Holder (This is to always include Chatham County).

**Chatham County as an Additional Insured:** Chatham County invokes the defense of sovereign immunity. In order not to jeopardize the use of this defense, the County **is not** to be included as an Additional Insured on insurance contracts.

2.16.2 **Minimum Limits of Insurance** to be maintained for the duration of the contract:

- a. **Commercial General Liability:** Provides protection against bodily injury and property damage claims arising from operations of a Contractor or Tenant. This policy coverage includes: premises and operations, use of independent contractors, products/completed operations, personal injury, contractual, broad form property damage, and underground, explosion and collapse hazards. Minimum limits: \$1,000,000 bodily injury and property damage per occurrence and annual aggregate.
- b. **Worker's Compensation and Employer's Liability:** Provides statutory protection against bodily injury, sickness or disease sustained by employees of the Contractor while performing within the scope of their duties. Employer's Liability coverage is usually included in Worker's Compensation policies, and insures common law claims of injured employees made in lieu of or in addition to a Worker's Compensation claim. Minimum limits: \$500,000 for each accident. disease policy limit, disease each employee and Statutory Worker's Compensation limit.
- c. **Business Automobile Liability:** Coverage insures against liability claims arising out of the Contractor's use of automobiles. Minimum limit: \$1,000,000 combined single limit per accident for bodily injury and property damage. Coverage should be written on an Any Auto basis.

2.16.3 Special Requirements:

- a. **Claims - Made Coverage:** The limits of liability shall remain the same as the occurrence basis, however, the Retroactive date shall be prior to the coincident with the date of any contract, and the Certificate of Insurance shall state the coverage is claims-made. The Retroactive date shall also be specifically stated on the Certificate of Insurance.
- b. **Extended Reporting Periods:** The Contractor shall provide the County with a notice of the election to initiate any Supplemental Extended Reporting Period and the reason(s) for invoking this option.
- c. **Reporting Provisions:** Any failure to comply with reporting provisions of the policies shall not affect coverage provided in relation to this request.
- d. **Cancellation:** Each insurance policy that applies to this request shall be endorsed to state that it shall not be suspended, voided, or canceled, except after thirty (30) days prior to written notice by certified mail, return receipt requested, has been given to the County.
- e. **Proof of Insurance:** Chatham County shall be furnished with certificates of insurance and with original endorsements affecting coverage required by this request. The certificates and endorsements are to be signed by a person authorized by the insurer to bind coverage on its behalf. All certificates of insurance are to be submitted prior to, and approved by, the County before services are rendered. The Contractor must ensure Certificate of Insurance are updated for the entire term of the County.
- f. **Insurer Acceptability:** Insurance is to be placed with an insurer having an A.M. Best's rating of A and a five (5) year average financial rating of not less than V. If an insurer does not qualify for averaging on a five year basis, the current total Best's rating will be used to evaluate insurer acceptability.
- g. **Lapse in Coverage:** A lapse in coverage shall constitute grounds for contract termination by the Chatham County Board of Commissioners.
- h. **Deductibles and Self-Insured Retention:** Any deductibles or self-insured retention must be declared to, and approved by, the County. At the option of the County, either: the insurer shall reduce or eliminate such deductibles or self-insured retention as related to the County, its officials, officers, employees, and volunteers; or the Contractor shall procure a bond guaranteeing payment of related suits, losses, claims, and related investigation, claim administration and defense expenses.

- 2.16.4 **Additional Coverage for Specific Procurement Projects:**  
a. **Professional Liability:** Insure errors or omission on behalf of architects, engineers, attorneys, medical professionals, and consultants.

Minimum Limits: \$1 million per claim/occurrence  
Coverage Requirement: If claims-made, retroactive date must precede or coincide with the contract effective date or the date of the Notice to Proceed. The professional must state if tail coverage has been purchased and the duration of the coverage.

- b. **Builder's Risk: (For Construction or Installation Contracts)** Covers against insured perils while in the course of construction.

Minimum Limits: All-Risk coverage equal 100% of contract value  
Coverage Requirements: Occupancy Clause - permits County to use the facility prior to issuance of Notice of Substantial Completion.

- 2.17 **Compliance with Specification - Terms and Conditions:** The Invitation to Bid, Legal Advertisement, General Conditions and Instructions to Bidders, Specifications, Special Conditions, Vendor's Bid, Addendum, and/or any other pertinent documents form a part of the bidders proposal or bid and by reference are made a part hereof.

- 2.18 **Signed Bid Considered Offer:** The signed bid shall be considered an offer on the part of the bidder, which offer shall be deemed accepted upon approval by the Chatham County Board of Commissioners, Purchasing Agent or his designee. In case of a default on the part of the bidder after such acceptance, Chatham County may take such action as it deems appropriate, including legal action for damages or lack of required performance.

- 2.19 **Notice to Proceed:** The successful bidder or proposer shall not commence work under this Invitation to Bid until a written contract is awarded and a Notice to Proceed is issued by the Purchasing Agent or his designee. If the successful bidder does commence any work or deliver items prior to receiving official notification, he does so at his own risk.

- 2.20 **Payment to Contractors:** Instructions for invoicing the County for products delivered to the County are specified in the contract document.

- a. Questions regarding payment may be directed to the Finance Department at (912) 652-7900 or the County's Project Manager as specified in the contract documents.
- b. Contractors will be paid the agreed upon compensation upon satisfactory delivery of the products or completion of the work as more fully described in the contract document.

- c. Upon completion of the work or delivery of the products, the Contractor will provide the County with an affidavit certifying all suppliers, persons or businesses employed by the Contractor for the work performed for the County have been paid in full.
- d. Chatham County is a tax exempt entity. Every contractor, vendor, business or person under contract with Chatham County is required by Georgia law to pay State sales or use taxes for products purchased in Georgia or transported into Georgia and sold to Chatham County by contract. Please consult the State of Georgia, Department of Revenue, Sales and Use Tax Unit in Atlanta (404) 656-4065 for additional information.

2.21 **Owner's Rights Concerning Award:** The Owner reserves the right, and sole and complete discretion to waive technicalities and informalities. The Owner further reserves the right, and sole and complete discretion to reject all bids and any bid that is not responsive or that is over the budget, as amended. In judging whether the bidder is responsible, the Owner will consider, but is not limited to consideration of, the following:

- a. Whether the bidder or principals are currently ineligible, debarred, suspended, or otherwise excluded from bidding or contracting by any state or federal agency, department, or authority;
- b. Whether the bidder or principals have been terminated for cause or are currently in default on a public works contract;
- c. Whether the bidder can demonstrate a commitment to safety with regard to Workers' Compensation by having an experience Modification Rate (EMR) over the past three years not having exceeded an average of 1.2; and
- d. Whether the bidder's past work provides evidence of an ability to successfully complete public works projects within the established time, quality, or cost, or to comply with the bidder's contract obligations; and
- e. Whether the bidder has made a Good Faith Effort to meet local participation goals for local economic impact for Disadvantaged Business Enterprises and Small Business Enterprises.

2.22 **Owner's Right to Negotiate with the Lowest Bidder:**

In the event all responsive and responsible bids are in excess of the budget, the Owner, in its sole and absolute discretion and in addition to the rights set forth above, reserves the right either to (i) supplement the budget with additional funds to permit award to the lowest responsive and responsible bid, or (ii) to negotiate with the lowest responsive and

responsible bidder (after taking all deductive alternates) only for the purpose of making changes to the Project that will result in a cost to the Owner that is within the budget, as it may be amended.

**2.23 Debarred or Suspended Subcontractors.**

CONTRACTOR shall not subcontract, and shall ensure that no subcontracts are awarded at any tier, to any individual, firm, partnership, joint venture, or any other entity regardless of the form of business organization, that is on the Federal Excluded Parties List System (EPLS) at <https://www.epls.gov> or the State of Georgia, DOAS, State Purchasing Exclusion listing, or other local government entity. This includes pending litigation or claims with the County or other government entities. Contractor shall immediately notify County in the event any subcontractor is added to a Federal, State or other Government Entity listing after award of the subcontract.

**2.24 Cone of Silence:**

Lobbying of Procurement Evaluation Committee members, County Government employees, and elected officials regarding this product or service solicitation, Invitation to Bid (ITB) or Request for Proposal (RFP) or contract by any member of a proposer's staff, or those people employed by any legal entity affiliated with an organization that is responding to the solicitation is strictly prohibited. Negative campaigning through the mass media about the current service delivery is strictly prohibited. Such actions may cause your proposal to be rejected.

2.25 The Chatham County Board of Commissioners has adopted an aggressive program that establishes goals for minority/female, small and disadvantaged business participation in construction, professional services, and general procurement.

- a. The Chatham County Board of Commissioners under Georgia law may reject any bid as non-responsive if they feel a bidder did not exercise "Good Faith Effort" in obtaining the goal established for M/WBE participation.
- b. The Chatham County Board of Commissioners adopted a policy establishing goals oriented to increase participation of minority and female owned businesses, through MBE/WBE certification and development. In order to accurately document participation, businesses submitting bids, quotes or proposals are encouraged to report ownership status. A bidder or vendor that is certified by any agency of the Federal Government or State of Georgia may submit a copy of their certification with their bid as proof of qualifications. Bidders that intend to engage in joint ventures or utilize subcontractors must submit to the County Contracts Administrator, a report on Minority/Female Business Enterprise participation.

**Goals established for this project is 30% Combined.**

c. A Minority/Female Business Enterprise (M/WBE) is a business concern that is at least 51% owned by one or more minority/female individuals and whose daily business operations are managed and directed by one (1) or more of the minority/female owners.

2.26 Bidders or proposers are required to make a **Good Faith Effort**, where subcontracting is to be utilized in performing the contract, to subcontract with or purchase supplies from qualified M/WBEs. Bidders or proposers are required to state if they intend to subcontract any part of the work. Goals will be established for each contract at the onset. **Forms** requiring the signatures of bidders or proposers are enclosed as **Attachments** and must be completed and returned with your bid response. If forms are not completed and submitted, the bid may be considered nonresponsive.

Each bidder or proposer is required to maintain records of such efforts in detail adequate to permit a determination of compliance with these requirements. All contracts will reflect **Good Faith Efforts** and reporting requirements for the term of the contract. The County particularly urges general contractors to give emphasis to subcontracting with local area firms. **For information on the program or M/WBE contractors/vendors please contact Connell C. Heyward, Chatham County Minority and Women Business Coordinator, 124 Bull Street, Suite 310, Savannah, Georgia 31401, (912) 652-7926 phone, or (912) 652-7849 fax. Email: [cheyward@chathamcounty.org](mailto:cheyward@chathamcounty.org)**

2.27 **GEORGIA OPEN RECORDS ACT** - The responses will become part of the County's official files without any obligation on the County's part. Ownership of all data, materials and documentation prepared for and submitted to Chatham County in response to a solicitation, regardless of type, shall belong exclusively to Chatham County and will be considered a record prepared and maintained or received in the course of operations of a public office or agency and subject to public inspection in accordance with the Georgia Open Records Act, Official Code of Georgia Annotated, Section 50-18-70, et. Seq., unless otherwise provided by law.

Responses to RFPs shall be held confidential from all parties other than the County until after the contract is awarded by the Board of Commissioners.

The vendor and their bid price in response to ITBs will be read allowed at public bid openings. After Bid Tabulations, the ITB shall be available for public viewing.

Chatham County shall not be held accountable if material from responses is obtained without the written consent of the vendor by parties other than the County, at any time during the solicitation evaluation process.

2.28 **GEORGIA TRADE SECRET ACT of 1990** - In the event a Bidder/Proposer submits trade secret information to the County, the information must be clearly labeled as a Trade

Secret. The County will maintain the confidentiality of such trade secrets to the extent provided by law.

2.29 **CONTRACTOR RECORDS** -The Georgia Open Records Act is applicable to the records of all contractors and subcontractors under contract with the County. This applies to those specific contracts currently in effect and those which have been completed or closed for up three (3) years following completion.

2.30 **REFERENCES - \$500,000 or more:** For bidders to be responsive each must provide information on the most recent five (5) projects with similar scope of work as well as other information to determine experience and qualifications as follows:

- a. Project Name: \_\_\_\_\_  
Location: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Address: \_\_\_\_\_  
City and State: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone & Fax: \_\_\_\_\_  
\*Architect or Engineer: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone & Fax: \_\_\_\_\_

- b. The awarded bid amount and project start date.  
Final cost of project and completion date.  
Number of change orders.  
Contracted project completion in days.  
Project completed on time. Yes \_\_\_\_\_ No \_\_\_\_\_ Days exceeded \_\_\_\_\_  
List previous contracts your company performed for Chatham County by Project Title, date and awarded/final cost.  
Has contractor ever failed to complete a project? If so, provide explanation.  
Have any projects ever performed by contractor been the subject of a claim or lawsuit by or against the contractor? If yes, please identify the nature of such claim or lawsuit, the court in which the case was filed and the details of its resolution.

**\$499,000 and less:** Provide references from owners of at least three (3) projects of various sizes. Include government owners if possible. If the contractor has performed any work for the Chatham County Board of Commissioners within the last five (5) years, at least one (1) of the three (3) owner references must be from the appropriate party within the Chatham County Government. Provide in the format as in (a) above on the attached form.

**Failure to provide the above information may result in your firm's bid being rejected**

**and ruled as non-responsive.**

**NOTE: FORMS FOR YOU TO FILL OUT FOR YOUR REFERENCES ARE ATTACHED TO THE BACK OF THIS BID PACKAGE.**

### **ADDITIONAL CONDITIONS**

- 3.1 **METHOD OF COMPENSATION.** The compensation provided for herein shall include all claims by the CONTRACTOR for all costs incurred by the CONTRACTOR in the conduct of the Project as authorized by the approved Project Compensation Schedule and this amount shall be paid to the CONTRACTOR after receipt of the invoice and approval of the amount by the COUNTY. The COUNTY shall make payments to the CONTRACTOR within thirty (30) days from the date of receipt of the CONTRACTOR's acceptable statement on forms prepared by the CONTRACTOR and approved by the COUNTY.

Should the Project begin within any one month, the first invoice shall cover the partial period from the beginning date of the Project through the last day of the month (or on a mutually agreeable time) in which it began. The invoices shall be submitted each month until the Project is completed. Invoices shall be itemized to reflect actual expenses for each individual task; also refer to the requirements concerning changes, delays and termination of work under Sections I-8, 9, and 10 of the contract. Each invoice shall be accompanied by a summary progress report which outlines the work accomplished during the billing period and any problems that may be inhibiting the Project execution. The terms of this contract are intended to supersede all provisions of the Georgia Prompt Pay Act.

As long as the gross value of completed work is less than 50% of the total contract amount, or if the contractor is not maintaining his construction schedule to the satisfaction of the engineer, the County shall retain 10% of the gross value of the completed work as indicated by the current estimate approved by the engineer.

After the gross value of completed work becomes to or exceed 50% of the total contract amount within a time period satisfactory to the County, then the total amount to be retained may be reduced to 5% of the gross value of the completed work as indicated by the current estimate approved by the engineer, until all pay items are substantially completed.

When all work is completed and time charges have ceased, pending final acceptance and final payment the amount retained may be further reduced at the discretion of the County.

The CONTRACTOR may submit a final invoice to the County for the remaining retainage upon COUNTY'S acceptance of the Certificate of Substantial Completion. Final payment constituting the entire unpaid balance due shall be paid by the COUNTY to the

CONTRACTOR when work has been fully completed and the contract fully performed, except for the responsibilities of the CONTRACTOR which survive final payment. The making of final payment shall constitute a waiver of all claims by Chatham County except those arising from unsettled liens, faulty or defective work appearing after substantial completion, failure of the work to comply with the requirements of the Contract Documents, or terms of any warranties required by the Contractor Documents or those items previously made in writing and identified by the COUNTY as unsettled at the time of final application for payment. Acceptance of final payment shall constitute a waiver of all claims by the CONTRACTOR, except those previously made in writing and identified by the CONTRACTOR as unsettled at the time of final application for payment.

3.3 **SURETY REQUIREMENTS and Bonds:** (check where applicable)

- A. Such bidder shall post a bid bond, certified check or money order made payable to the Chatham County Finance Department in the amount of 5% of the bid price.**
- B. Contractor(s) shall be required at time of contract to shall post a payment/performance bond, certified check or money order made payable to the Chatham County Finance Department in the amount of 100% of the bid price if awarded the purchase. Such bond(s) are due prior to contract execution as a guarantee that goods meet specifications and will be delivered per contract. Such bonds will also guarantee quality performance of services and timely payment of invoices to any subcontractors.**
- C. Whenever a bond is provided, it shall be executed by a surety authorized to do business in the State of Georgia and approved by Chatham County.**
- D. Bidder acknowledges Chatham County's right to require a Performance and Payment Bond of a specific kind and origin. "Performance Bond" means a bond with good and sufficient surety or surities for the faithful performance of the contract and to indemnify the governmental entity for any damages occasioned by a failure to perform the same within the prescribed time. Such bond shall be payable to, in favor of, and for the protection of the governmental entity for which the work is to be done. "Payment Bond" means a bond with good and sufficient surety or**

sureties payable to the governmental entity for which the work is to be done and intended for the use and protection of all subcontractors and all persons supplying labor, materials, machinery, and equipment in the prosecution of the work provided for in the public works construction contract.

- X     E. Forfeit the amount of the Bid Bond if he/she fails to enter into a contract with Chatham County to do and/or furnish everything necessary to provide service and/or accomplish the work stated and/or specified in this bid proposal for the bid amount.

3.4 **WARRANTY REQUIREMENTS:**

- a. Provisions of item 2.7 apply.
  - b. Warranty required.
- X           1. Standard warranty shall be offered with bid.
2. Extended warranty shall be offered with bid. The cost of the extended warranty will be listed separately on the bid sheet.

3.5 **TERMS OF CONTRACT:** (check where applicable):

- a. Annual Contract (With automatic renewal options for four (4) additional one (1) year terms if all parties agree)
- b. One-time Purchase
- X    c. Other **ONE TIME CONTRACT**

3.6 **AUDITS AND INSPECTIONS:**

At any time during normal business hours and as often as the County may deem necessary, the Contractor and his subcontractors shall make available to the County and/or representatives of the Chatham County Department of Internal Audit for examination of all its records with respect to all matters covered by this Contract. It shall also permit the County and/or representatives of the Department of Internal Audit to audit, inspect, examine and make copies, excerpts or transcripts from such records of personnel, conditions of employment and other data relating to all matters covered by this Contract. All documents to be audited shall be available for inspection at all reasonable times in the main offices of the County or at the offices of the Contractor as requested by the County.

**CONVERSATIONS OR CORRESPONDENCE REGARDING THIS SOLICITATION OR**

**REPORT BETWEEN PROSPECTIVE OFFERORS AND PERSONS OUTSIDE THE CHATHAM COUNTY PURCHASING OFFICE WILL NOT BE CONSIDERED OFFICIAL OR BINDING UNLESS OTHERWISE SPECIFICALLY AUTHORIZED WITHIN THIS DOCUMENT.**

The undersigned bidder or proposer certifies that he/she has carefully read the preceding list of instructions to bidders and all other data applicable hereto and made a part of this invitation; and, further certifies that the prices shown in his/her bid/proposal are in accordance with all documents contained in this Invitation for Bids/ Proposals package, and that any exception taken thereto may disqualify his/her bid/proposal.

This is to certify that I, the undersigned bidder, have read the instructions to bidder and agree to be bound by the provisions of the same.

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

BY \_\_\_\_\_

SIGNATURE

TITLE

COMPANY

Phone / Fax No's.

CHATHAM COUNTY, GEORGIA

SURETY REQUIREMENTS

A Bid Bond for five percent (5%) of the amount of the bid is required to be submitted with each bid.

A Performance Bond for one hundred percent (100%) of the bid shall be required of the successful bidder.

The Bidder certifies that he/she has examined all documents contained in this bid package, and is familiar with all aspects of the proposal and understands fully all that is required of the successful bidder. The Bidder further certifies that his/her bid shall not be withdrawn for thirty (30) days from the date on which his bid is publicly opened and read.

The Bidder agrees, if awarded this bid, he/she will:

- A. Furnish, upon receipt of an authorized Chatham County Purchase Order, all items indicated thereon as specified in this bid proposal for the bid amount, or;
- B. Enter a contract with Chatham County to do and/or furnish everything necessary to provide the service and/or accomplish the work as stated and/or specified in this bid proposal for the bid amount, and;
- C. Furnish, if required, a Performance Bond, and acknowledges Chatham County's right to require a Performance Bond of a specific kind and origin, and;
- D. Forfeit the amount of the Bid Bond if he/she fails to enter a contract with Chatham County as stated in (B) above, within fifteen (15) days of the date on which he/she is awarded the bid, and/or;
- E. Forfeit the amount of the Performance Bond if he/she fails to execute and fulfill the terms of the contract entered. The amount of forfeiture shall be:
  - 1. The difference between his/her bid and the next lowest, responsible bid that has not expired or been withdrawn, or;
  - 2. The difference between his/her bid and the amount of the lowest, responsible bid received as a result of rebidding, including all costs related to rebidding.

\_\_\_\_\_  
COMPANY

\_\_\_\_\_  
DATE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
TELEPHONE NUMBER

## PROPOSAL

SPECIFICATIONS FOR:

BID NO. 14-0085-4

### HAMPTON PLACE DRAINAGE IMPROVEMENTS

The project is located on Quacco Road at the entrance of Hampton Place Subdivision in unincorporated Chatham County. The work consists of replacing undersized stormwater pipes, adding more inlets, relocating utilities, and replacing deteriorated asphalt pavement.

All associated work is included on the construction drawings. This relocation shall be performed with minimal interruption of the service.

**This shall be a unit price contract. Quantities are approximate and payment shall be for actual in-place work measurements.**

#### COMMENCEMENT AND COMPLETION:

**WORK SHALL BEGIN WITHIN 10 DAYS AFTER RECEIPT OF "NOTICE TO PROCEED". ALL WORK SHALL BE COMPLETED WITHIN 150 CALENDAR DAYS AFTER THE TEN DAY PERIOD.**

SECTION 01600

# Hampton Place Drainage Outfall

Bid Schedule - July 7, 2014

Item No.	Description	Quantity	Units	Unit Price	Cost
1	Clearing and Grubbing, including street right-of-way & easement	0.7	AC		
2	Grading shall include all project excavation, compaction & finish grading, on & off site borrow to meet finish grades, project staking, bonds & insurance, & all miscellaneous items not included elsewhere in this bid schedule to complete this project in accord with the contract plans and specifications	1	LS		
3	Removal and Replacement of unsuitable subgrade material for roads	300	CY		
4	18" RCP - Class III	61	LF		
5	24" RCP - Class III	388	LF		
6	36" RCP - Class III	213	LF		
7	36" Conc. End Section	3	EA		
8	Standard Curb Inlet - Double Wing	2	EA		
9	Grate Inlet	1	EA		
10	Standard Manhole	4	EA		
11	Remove existing pipes & plug remaining	1	LS		
12	Remove & Replace Concrete Sidewalks	15	SY		
13	Remove & Replace Concrete Curb & Gutter	200	LF		
14	Remove & Replace Existing Asphalt Paving and Base	1,500	SY		
15	Thermoplastic Stop Bars	4	EA		
16	Soil Erosion and Sedimentation Control (Except Permanent Grassing and Riprap)	1	LS		
17	Dumped Stone Riprap	50	SY		
18	Grassing – Permanent	3,500	SY		
19	Traffic Control	1	LS		
20	8" Sewer Pipe 4'-8'	149	LF		
21	Standard Manhole 4'-6'	1	EA		
22	Standard Manhole 6'-8'	1	EA		
23	Connect New Manhole to Existing Pipes	1	EA		
24	Miscellaneous Concrete	5	CY		
25	Gravel Backfill	10	CY		
26	Select Backfill	40	CY		
27	Lower Existing Water Service Laterals	3	EA		
28	Lower and/or Adjust Existing Water Main Including Thrust Restraints	3	EA		
29	Install, Maintain, and Remove 6" Crusher Run on Filter Fabric at the intersection of Aquinnah Drive and Katama Way	300	SY		
30	Field Condition Allowance	1	LS	25,000	25,000

COMPANY / NAME AND TITLE

TOTAL BID



## SPECIAL CONDITIONS

1. LOCATION AND DESCRIPTION OF WORK:

The project is located on Quacco Road at the entrance of Hampton Place Subdivision in unincorporated Chatham County. The work consists of replacing undersized stormwater pipes, adding more inlets, relocating utilities, and replacing deteriorated asphalt pavement. All associated work is included on the construction drawings. This relocation shall be performed with minimal interruption of the service.

2. TECHNICAL SPECIFICATIONS:

a.	01601	Measurement and Payment
b.	02200	Excavation, Filling, and Grading
c.	02210	Erosion Control
d.	02221	Excavation, Trenching, and Backfilling for Utility Systems
e.	02400	Storm Drainage System
f.	02480	Grassing and Sodding
g.	02500	Base Course and Bituminous Pavement
h.	02520	Concrete Sidewalks, Curb and Gutter
i.	02700	Water Distribution System
j.	02720	Sanitary Sewers

3. DRAWINGS:

a.	1	Cover Sheet
b.	2	General Notes and Abbreviations Sheet 1 of 2
c.	3	General Notes and Abbreviations Sheet 2 of 2
d.	4	ESPC General Notes Sheet 1 of 3
e.	5	ESPC General Notes Sheet 2 of 3
f.	6	ESPC General Notes Sheet 3 of 3
g.	7	Project Site Plan
h.	8	Existing Site Plan
i.	9	Initial ESPC Plan
j.	10	Intermediate & Final ESPC Plan
k.	11	Demolition Plan

4. PRE-CONSTRUCTION INSPECTION:

A pre-construction conditions video (standard DVD format) is required and must be submitted to Chatham County Department of Engineering prior to start of any land disturbing work. Special emphasis shall be given to record pre-disturbance condition of roadways, driveways, buildings, utilities and other improvements located within or within 100 feet of the project limits. This is in addition to other inspections and surveys required of the Contractor or performed by the County. A voice narrative shall identify location and features of the preconstruction video.

5. POST-CONSTRUCTION INSPECTION:  
The Contractor shall provide and pay all costs of a video inspection record of the completed pipe systems for all pipes under 48" diameter. The video inspection record shall be provided on standard DVD and compatible with County viewing software. All deficiencies identified by the inspection shall be corrected by the Contractor prior to acceptance of the work as substantially complete.
  
6. CONSTRUCTION STAKING AND CONTROL OF WORK:  
The County shall engage a surveyor registered by the State of Georgia to provide initial construction stakeout and demarcation project limits and property lines. Ongoing control of the project work shall be the responsibility of the Contractor. The cost for resurvey work to reestablish initial project controls shall be paid for by the Contractor. The Contractor shall provide access and schedule all work in order to accommodate the survey work by the County's surveyor.
  
7. DOCUMENTATION TO BE PROVIDED WITH REQUESTS FOR PAYMENT:  
In addition to the documentation described elsewhere in the Contract Documents, the Contractor shall submit with each request for payment the following:
  - a. Copies of material delivery tickets. The Contractor shall be responsible for collecting these documents at the time of delivery. The delivery tickets shall not relieve the Contractor of his responsibility to ensure the materials are in accordance with the contract documents. Missing or incomplete documentation of delivered materials may be cause for delay/denial of payment.
  - b. Prior to submitting a request for payment, the Contractor shall review the extent of work completed with the County's representative for accuracy and completeness.
  
8. DUTIES:
  - a. The Contractor will be responsible for installation, maintenance and repair of the sedimentation and erosion control facilities and for any modifications or adjustments necessary for the project to remain in compliance with the Georgia Erosion and Sedimentation Act during performance of the work. The Contractor will have on site at all times of construction activity a Georgia Soil and Water Conservation Commission Level 1A certified person.
  - b. The total contract amount will be reduced by an amount as specified in the fines section below for each occurrence of failure to conform to the sediment and erosion control requirements of the contract. For the purpose of this paragraph an occurrence shall be defined as each 24-hour period with consecutive 24-hour periods being measured as separate occurrences. This fee shall be in addition to any penalties or assessments made against the Contractor for non-compliance of the Georgia Water Quality Control Act.
  
9. FINE:  
A \$200 per day fee shall be assessed against the Contractor and withheld from the Lump Sum Contract Price for each and every day that the erosion and sedimentation control plan is not in proper operation. This fee shall be in addition to any penalties or assessments made against the Contractor for non-compliance of the Georgia Water

Quality Control Act.

10. LIQUIDATED DAMAGES:

Liquidated Damages shall be assessed at \$200 per calendar day for work not completed within the Contract period. The full amount of liquidated damages will be deducted from the final payment to the Contractor.

11. FIELD CONDITION ALLOWANCE:

The Field Condition Allowance shown on the bid sheet shall belong to Chatham County. The purpose of this Allowance is to allow the County to designate actions associated with completion of the project which are not indicated on the plans, but which are dictated by field conditions. Bidders shall not use this Allowance to assume any Contractor costs known or unknown at the bidding. Chatham County must approve use of the Allowance. All bidders shall include this Field Condition Allowance within their base bid. Any unused allowance shall revert to Chatham County.

12. REQUIREMENTS:

- a. The City of Pooler desires to overlay Quacco Road. All pipe work and pavement patching affecting the asphalt roadway of Quacco Road shall be a priority. Contractor shall coordinate with the City of Pooler for all work within the City right-of-way.
- b. The Contractor shall submit a traffic control plan to Chatham County prior to work commencing. Traffic may be limited to one lane on Quacco Road during the construction within the Quacco Road right-of-way. Flagmen are required for Quacco Road. Temporary closure of the roadway will be necessary for Vineyard Haven Drive. This closure shall be kept to a minimum. Contractor to ensure all residents have access to their homes including Old Whaling Way and Nantucket Court.
- c. Work hours shall be limited to 7:00 am to 7:00 pm Monday through Saturday and shall exclude holidays unless otherwise approved by Chatham County.
- d. The Contractor shall obtain an Encroachment Permit from the Department of Public Works prior to any work within road rights of way. All work is to be performed within the existing rights of way and easements as shown on the plans unless coordinated with others. A temporary easement exists on the west side of Quacco Road as shown on the plans for staging and storage. Permission to use other private property outside of these areas shall be obtained by the Contractor in writing. Copies of such agreements shall be provided to the Chatham County Engineering Department. At the completion of the project the Contractor shall restore all areas to equal or better than its preconstruction condition.
- e. The Contractor shall provide approved means and methods upstream and downstream of the excavation to control water as needed in any open excavations as required for construction. The Contractor's means and methods shall not impede natural drainage through the construction site. The County must approve the Contractor's plan for maintenance of flow prior to beginning work. No earthen berms shall be used to block flow. The use of removable sandbags to temporarily dam the channel is encouraged.

- f. Watering past the date of substantial completion of the work shall be provided on seeded areas to achieve full coverage to match existing conditions and as accepted by Chatham County.
- g. Unsuitable material shall be removed and replaced with suitable material meeting the requirements of the specifications. Measurement of unsuitable material shall exclude excavation of all materials within the limits of excavation shown on the drawings. Measurements of unsuitable material shall be made by cross section method as approved by Chatham County. Measurement by truck count will not be allowed unless otherwise stated.
- h. A detailed construction schedule for the project shall be provided to and approved by Chatham County prior to beginning demolition or construction.
- i. The Contractor shall replace all property corner pins or monuments disturbed during construction.
- j. Contractor to coordinate with all utility owners within the limits of construction.
- k. Contractor to coordinate with emergency services, postmaster, and public school system regarding road closures.
- l. All testing services will be provided by Chatham County. Contractor to schedule testing as needed following the construction plans and technical specifications.

SECTION 01601  
MEASUREMENT AND PAYMENT

1. SCOPE:  
Under this heading shall be included the methods of measurement and payment for items of work under this Contract.
  
2. ESTIMATED QUANTITIES:  
All estimated quantities for unit price items, stipulated in the Bid Proposal, or other Contract Documents, are approximate and are to be used as a basis for estimating the probable cost of the work and for comparing the bids submitted for the Project. The actual amounts of work done and materials furnished under price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and material furnished. The Contractor agrees to make no claim for damages, anticipated profits or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts included in the Bid Proposal. The Contractor will not be paid for any work which exceeds 25 percent of the quantity set forth in the Bid Schedule without a change order issued before the work is performed unless specifically ordered in writing by the Engineer. The Contractor will provide assistance to the Engineer to check quantities and elevations when so requested.
  
3. SITE PREPARATION:  
Work under this item shall include protection, or removal and replacement, of existing improvements that will be impacted by construction under this contract. Such existing improvements may include mailboxes, irrigation systems, light fixtures, signage, landscape vegetation, water laterals and meter boxes, etc. Work shall be measured on the basis of the completed job. Payment shall be at the lump sum price in the Bid Schedule, to include all labor, materials and equipment to perform the work.
  
4. GRADING:  
Grading shall include all project excavation, compaction and finish grading, on and off site borrow and earth fill to meet finish grades, all removals not specifically listed in the Bid Schedule, project staking, bonds and insurance, and all miscellaneous items not included elsewhere in this Bid Schedule to complete this project in accordance with the Contract Plans and Specifications. Payment shall be lump sum to include all labor, materials and equipment to perform the work. Contractor will perform his own construction staking from baseline staking provided by the Owner.
  
5. REMOVAL OF UNSUITABLE SUBGRADE MATERIALS:  
Measurement of unsuitable material for roads, buildings and walks will be as determined by sectioning the area before and after the unsuitable material is removed or other means approved in advance by the Owner's representative. Unsuitable subgrade material will be determined by the Owner's representative with limits established as to depth and length

of the area of unsuitable material. Unsuitable material will not be removed to a depth greater than two feet without written authorization from the Owner's representative. The total shall not exceed the quantity of unsuitable material in the Bid Schedule by more than 25 percent without a change order. Payment is for providing all labor, materials and equipment necessary to excavate and remove the unsuitable material offsite or to a location designated by the Owner's representative onsite. If onsite locations are not adequate to handle all removed unsuitable material it will be the Contractor's responsibility to remove the material offsite at his own expense.

6. FOREIGN BORROW (REPLACE UNSUITABLE SUBGRADE MATERIAL ONLY):  
Measurement of borrow material (compacted in place) shall be done by sectioning the area before and after the unsuitable material is removed. Borrow material will be obtained off site by the Contractor at his expense. Foreign borrow material will not be obtained until onsite suitable material from excavations under the item "Grading" is used. No extra payment will be made for onsite suitable material used to backfill and compact for replacement of unsuitable material. Unit price will cover all labor, materials and equipment required to transport the material to the site and to place and compact the material.
7. PIPE:  
Measurement of pipe will be on the basis of the number of linear feet of pipe in place as shown on the Plans measured along centerline. Payment for furnishing and installing the pipe will be on the basis of the unit price in the Bid Proposal and shall cover all work required for excavation and backfilling to properly install the pipe.
8. CONCRETE END SECTIONS:  
Payment for furnishing, constructing and installing concrete end sections as shown on the plans shall be on the basis of the unit price in the Bid Proposal, including proper backfilling and dressing up.
9. INLETS:  
Payment for furnishing and installing the inlets shall be on the basis of the unit prices for the inlets in the Bid Proposal. Payment shall cover furnishing and installing the concrete structures and castings shown on the Plans, excavation, dewatering and backfilling, and installation, maintenance and removal of temporary sediment protection.
10. STANDARD MANHOLE:  
Payment for furnishing and installing standard manholes will be based on the unit price in the Bid Schedule and shall cover all labor, materials and equipment required for excavation, installation and backfilling for the manhole, including steps and casting.
11. REMOVE EXISTING PIPES AND PLUG REMAINING  
Measurement for this item shall be on the basis of the completed job. Payment shall be at the lump sum price in the Bid Schedule and shall cover removal and offsite disposal of

the pipe, and plugging other pipes with concrete brick and mortar where shown on the Plans.

12. REMOVE AND REPLACE CONCRETE SIDEWALKS:

Measurement of the sidewalks will be on the basis of the number of square yards installed as directed by the Owner's representative. Payment is for furnishing all materials, labor and equipment necessary to perform the work as directed by the Owner's representative, including forming, placing, finishing and curing the concrete, and shall include removal of existing sidewalk, as directed by the Owner's representative, and proper offsite disposal.

13. REMOVE AND REPLACE CONCRETE CURB AND GUTTER:

Measurement of the 18 inch concrete curb and gutter will be on the basis of the number of linear feet of curb and gutter installed as directed by the Owner's representative. Payment for forming, placing, finishing and curing the concrete curb and gutter shall be at the unit price in the Bid Proposal. Payment shall include removal of existing concrete curb and gutter, as directed by the Owner's representative, and proper disposal offsite.

14. REMOVE & REPLACE EXISTING ASPHALT PAVING:

Measurement of the removal and replacement of existing asphalt paving where shown on the Plans will be based on the square yards of paving (including base) removed and replaced as called for on the Plans. Payment shall be based on the unit price per square yard in the Bid Proposal and shall include the removal and off-site disposal of the asphalt pavement (and base), furnishing, compacting and shaping the graded aggregate base, and furnishing, spreading, shaping and rolling asphalt concrete binder and surface course.

15. PAVEMENT MARKINGS:

Measurement for thermo plastic stop bars shall be based on the number of units installed in place. Payment shall be at the unit price in the Bid Schedule and shall include all labor, materials and equipment necessary to complete the work, including layout.

16. SOIL EROSION AND SEDIMENTATION CONTROL:

Payment for this item is for measures taken as indicated on the Plans and Specifications and provided in the Manual for Erosion and Sedimentation Control in Georgia. Payment is for all labor, material and equipment necessary to meet the requirements, including placement, maintenance and removal, and shall be at the lump sum price in the Bid Schedule. Work under this item shall not include inlet sediment control, permanent grassing and placed stone riprap, which are covered under other bid items.

17. PLACED STONE RIPRAP:

Measurement of the placed stone riprap furnished and installed as shown on the Plans will be on the basis of square yards of riprap in place, including filter fabric. Payment for furnishing and installing the placed stone riprap shall be at the unit price shown in the Bid Proposal.

18. GRASSING (PERMANENT):  
Measurement of permanent grassing shall be on the basis of the number of square yards furnished and installed where shown on the plans and/or as directed by the Engineer. Payment for furnishing and installing the grassing shall be at the unit price in the Bid Proposal, and will include furnishing and applying fertilizer and onsite or offsite topsoil as needed, and maintenance until a satisfactory stand of permanent grass is achieved.
19. SEWER PIPE:  
Measurement of pipe will be on the basis of the number of linear feet of pipe in place measured along center line of pipe from center of manhole to center of manhole. Depth for payment will be determined from finished grade in a cut section and existing grade in a fill section. Payment for furnishing and installing the pipe shall be based on the unit price in the Bid Proposal and shall cover all work required for excavation, bedding, and backfilling to properly install the pipe, tracing wire and videotape the pipe at completion.
20. STANDARD MANHOLES:  
Payment for furnishing and installing manholes will be based on the unit price in the Bid Proposal and shall cover all labor, materials and equipment required for excavation, installation and backfilling for the manhole, including steps and castings, formed invert and copper tracing wire.
21. CONNECT EXISTING LATERAL TO MANHOLE:  
Payment for connecting an existing sewer lateral to a new manhole shall be at the unit price in the Bid Proposal and shall include all labor, materials and equipment required for the connection and proper sealing of the manhole
22. STONE BACKFILL:  
Stone backfill will be measured by using the length for which stone is ordered by the Owner's representative, times a depth of 6-inches times a width of 18 inches wider than the barrel of the pipe. Payment will include the cost of removing the unsuitable material below the invert and furnishing and placing the stone. Payment for stone shall only be made when dewatering by well points, or by other means, is not attainable.
23. SELECT BACKFILL:  
Measurement of select backfill (suitable material) shall be based on the number of cubic yards installed where necessary to replace unsuitable material and/or where required by the Engineer. Payment shall be at the unit price in the Bid Proposal and includes furnishing and properly compacting select backfill.
24. LOWER WATER MAIN:  
Measurement of this item will be based on the number of adjustments needed in accordance with the Plans and detail. Payment shall be on the basis of each occurrence as shown in the Bid Proposal and shall include all work required for excavation and backfilling to properly install the pipe, including fittings and thrust restraint, flushing,

disinfection, pressure testing and copper tracing wire.

SECTION 02200  
EXCAVATION, FILLING AND GRADING

1. SCOPE:

Under this heading shall be included the following:

- a) Excavation required for structures.
- b) Sub-cut excavation as required or designated.
- c) Excavation as required for roadways.
- d) Shoring, sheeting and bracing as required.
- e) Wasting and disposal of excess or unsuitable materials.
- f) Furnishing and placing borrow material.
- g) Furnishing and placing granular foundation material.
- h) Compaction of all materials.
- i) Dewatering or unwatering as necessary to complete the excavations to the required depths and as necessary to maintain the excavation sufficiently dry so that all work can be accomplished.
- j) Site grading as required, including excavation and backfill.
- k) Preparation of subgrades.
- l) All other work specified herein.

Excavation and backfill for outside utility systems and other underground piping is specified in Section 02221 of these Specifications.

2. GENERAL:

The Contractor shall accept the site in its existing condition, and shall assume the risk of encountering whatever materials as may occur.

3. SOILS:

No geotechnical investigation has been performed. The Contractor shall make his own determination of the soil structure and site conditions as they may affect the work.

4. DEWATERING AND PROTECTION AGAINST WATER:

- a) The Contractor shall remove water from the site and shall lower the ground water level as necessary to complete the excavations to the required depths and as required to maintain the excavations sufficiently dry so that all required work can be accomplished. The Contractor shall do such well construction, well pointing, sheeting, ditching, diking and pumping and shall construct necessary drains, channels, sumps and cofferdams to keep his excavations and new structures clear of ground water, storm water or sewage and to keep his construction areas dry during the progress of the work and until the finished work is accepted by the Owner, except as otherwise specified.
- b) The Contractor shall be responsible for the effect of dewatering operations on adjacent property and for the effect on water supplies located in the vicinity of the project.

- c) Adequate measures and protection shall be provided by the Contractor to protect his work from damage from uplift due to ground water, storm water, or flood water. Any damages which may result shall be the Contractor's responsibility.
- d) The Contractor shall accept all responsibility for damage to the work of this Contract because of floods and water pressures and other water damages and shall accept all risks of floods and other events which may occur.
- e) All water discharged by pumping operations shall be discharged so as not to interfere with work under this Contract or with existing structures and operations. Route of dewatering pipe shall be subject to the Owner's review. Discharge facilities and water quality shall comply with applicable regulations of State and Federal agencies.
- f) Dewatering operations shall be uninterrupted and continuous during the course of the work so as not to endanger any construction in place or to present a hazard to workmen in and around the site. The Contractor shall take all measures necessary including, but not limited to, standby equipment and constant attendance to ensure that the dewatering system remains operational and effective throughout the period of time that it is required.

5. MATERIALS:

- a) Earth Fill.  
Earth fill, including pavement subgrades, shall consist of all suitable materials from required excavations. Suitable materials for earth fill shall generally be composed of sands, clay-sand mixtures and silt-sand mixtures classified as SW, SP, SM or SC (low plasticity only) by the Unified Soil Classification System. Clay-sand and silt-sand mixtures must be approved by the soil technician prior to being incorporated in fills. Clays, silts, and organic soils will be considered as unsuitable materials.
- b) Excavated Materials.  
All suitable materials from excavations shall be used in the permanent construction required under these Specifications. Suitable materials shall be excavated separately from materials to be wasted and the suitable materials shall be segregated by loads during the excavation operations and shall be placed in temporary stockpiles and later placed in the designated locations. Excavated materials, which, after drainage, are suitable for the embankment but which, when excavated are too wet for immediate compaction in the embankment, shall be placed temporarily in stockpiles until the moisture content is reduced sufficiently to permit them to be placed in the earth fills.
- c) Excess Materials.  
All excess material from required excavations shall be removed from the site unless written authorization is given by the Owner's representative to stockpile the material on the site.

6. EXCAVATION:

- a) Excavation shall include the loosening, loading, removing, transporting, stockpiling and disposing of all materials, wet or dry, necessary to be removed to

construct all structures included in this Contract to the lines and grades, and at the locations, shown on the Contract Drawings. Excavation for outside piping, storm sewers and utilities systems is included in other Sections of these Specifications.

- b) Excavation for structures shall conform to the depth and dimensions necessary for the proper installation of all structures detailed on the Contract Drawings. Unless shown on the Drawings excavation shall not be carried below the elevations shown on the Drawings. Where bottoms of excavations are slightly unstable and the Drawings do not require a stabilized granular backfill and the Engineer does not direct additional excavation and replacement, the Contractor may provide a gravel course, but such work will be considered as for the Contractor's convenience and will not be considered as extra work.
- c) Where any unauthorized excavation is made below the elevation indicated on the Contract Drawings, the excavation shall be restored to the proper elevation with compacted, well graded granular backfill. Such backfill shall be compacted as specified in the Article entitled "Compaction".
- d) Excavation for pipes under and adjacent to structures shall be made after the installation of the granular backfill. Excavations shall be made to the required depths, grades, alignment, and trench widths required for the installation of the pipe. Temporary sheeting and bracing shall be used as required to confine the trench size and width. Trench size and width shall conform to the requirements in Section 02221.
- e) Excavation shall be made for roadways and other site work to the required depths, grades and alignment.
- f) Excavations, where conditions require, shall be properly shored, sheeted and braced by the Contractor to maintain excavation in a condition to permit the safe and efficient installation of all items of Contract work. Upon completion of the various Contract items, all temporary forms, shores and bracing shall be removed. While being withdrawn, all voids left by the sheeting and bracing shall be carefully filled with sand and compacted.

7. TOPSOIL CONSERVATION:

Over areas requiring excavation and/or fill, there may be limited amounts of existing topsoil, suitable for future use. The Contractor shall strip all such topsoil and shall stockpile it for future use under this Contract. Except for topsoil material available from the excavation, topsoil shall be obtained from off-site borrow. See also the Article in Section 02480 entitled "Topsoiling" for requirements of topsoil to be used as such under this project.

8. UNSUITABLE MATERIAL:

Where material encountered is unsuitable for subgrade construction of roads, buildings and walks, such material shall be excavated to the required depth of compaction (generally two feet below pavement base course), disposed of off the site and property of the Owner and replaced with suitable material. Unsuitable materials are those classified as MH, CH, OH, OL, and Peat in accordance with the Unified Soil Classification System. Excess water in material will not be a basis for establishing unsuitable material regardless

of gradation. The Owner's representative shall be notified immediately upon encountering of unsuitable material.

9. BORROW:

It is anticipated that suitable material for required fill and backfill can be obtained from required excavation. Suitable materials shall be secured by the Contractor from off-site sources if required.

10. BACKFILLING:

- a) All excavation shall be backfilled to the lines and grades shown on the Contract Drawings. Backfill adjacent to structures shall not be placed until forms, form lumber and all debris from construction has been entirely removed from around the work. No backfilling shall be done in unsuitable weather or over ground that is frozen or too wet.
- b) Backfill shall not be placed against structures until the concrete has cured at least 7 days. Backfill, in general, shall be placed in horizontal layers not in excess of 12 inches in thickness, except in the cases of embankment construction around structures and under roadway and piping locations, where backfill shall be placed in 6 inch layers, with each layer thoroughly compacted as specified hereinafter , prior to the addition of the succeeding layer.
- c) Fill immediately adjacent to walls shall be hand tamped and special care shall be taken to prevent any wedging action or eccentric loading against the walls.
- d) Fill material shall be free of organics, roots or other deleterious materials, including frozen material, stones or cobbles over 6 inches in maximum dimension. It shall be non-plastic granular material containing less than 25 percent fines passing the No. 200 sieve.

11. COMPACTION:

a) General.

Compaction of earth fill and all pavement subgrades shall be performed to the percentages of maximum standard or modified dry densities and to the depths as shown on the drawing or as follows:

- 1) Subgrades Under Paved Areas and Structures.  
100 Percent Standard (ASTM Test D698) 24 inches
- 2) Pedestrian Traffic Subgrades.  
97 Percent Standard (ASTM Test D698) 12 Inches
- 3) Unpaved Areas To Be Grassed Or Sodded.  
95 Percent Standard (ASTM Test D698) Full Depth

b) Moisture Content.

All compaction shall be performed at material moisture contents within 3 percentage points, plus or minus of optimum. Compaction and proof rolling equipment shall be as outlined in Section 02500 or as may be required for the type of fill being compacted.

12. TESTING:

a) General.

- 1) The Contractor will select an approved independent testing laboratory for the purpose of identifying soils, checking densities, and classifying soils materials during construction. Payment for the testing will be by the Contractor. Copies of all test results shall be furnished to the Owner's representative.
- 2) The Contractor shall include the cost of one compaction test per 200 cubic yards, 500 linear feet of curb, 500 linear feet of subgrade along pavement centerline and 1,500 square yards of base and one "proctor" test for each type of fill material to determine if the proper compaction has been attained.

b) Moisture Density Tests.

Testing shall be in accordance with ASTM Methods D698. A test shall be performed on each type of material used in the work regardless of source. Tests will be accompanied by particle-size analyses of the soils tested (ASTM Methods D421 and D422). Changes in color, gradation, plasticity or source of fill material will require the performance of additional tests. Copies of all test results shall be furnished to the Owner's representative.

c) Field Density Tests.

Tests shall be made in accordance with ASTM Method D1556 and/or ASTM Method D 2922. If any compaction test reveals that fill or backfill is not compacted as specified, the Contractor shall scarify and recompact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction. These additional tests, required due to failure of the original test, shall be paid for by the Contractor and not be reimbursed by the Owner.

d) Submittals.

The soils technicians will submit formal reports of all compaction tests and retests to the Contractor, and Owner's representative as soon as possible upon completion of the required tests. This report information is to include but not be limited to the following:

- 1) Date of the test and date submitted.
- 2) Location of test.
- 3) Wet weight, moisture content and dry weight of field sample.
- 4) Description of soil.
- 5) Maximum dry density and moisture content of the lab sample which best matches the field sample in color, texture, grain size and maximum dry density.
- 6) Ratio of field dry density to maximum lab dry density expressed as a percentage.
- 7) Comments concerning the field density passing or failing the specified compaction.
- 8) Comments about recompaction if required.

e) Compaction Results.

The soils technician is to advise the Owner's representative and Contractor immediately of any compaction tests failing to meet the specified minimum requirements. No additional lift is to be placed on a lift with any portion failing.

13. GRADING:

Upon completion of other construction operations, the entire site, within the limits shown on the Drawings, shall be brought to the finished grades shown. All surfaces shall be sloped to the grades indicated and which will provide proper drainage. All surfaces shall be raked smooth and shall be free of all vegetable matter, debris and stones larger than 2-1/2 inches. Allow for thickness of required topsoil.

SECTION 02210  
EROSION CONTROL

1. SCOPE:

Under this section shall be included all measures both temporary and permanent to control erosion and sedimentation, and protect all surface waters and property both on and off site. This shall include all labor, materials and equipment necessary to meet the requirements of this Section.

2. GENERAL:

- a) It is the intent of this Specification that the Project and the Contractor comply with all applicable requirements of the Erosion and Sedimentation Act of 1975 and local regulations and ordinances.
- b) The Manual for Erosion and Sediment Control in Georgia further defines practices and requirements. The Contractor is responsible for maintaining all sediment and erosion control measures on the project site during construction. The Contractor is responsible for any damage caused due to failure to implement these requirements. A Soil Erosion and Sedimentation Control Permit has been obtained by the Owner so that periodic inspections may be made by the County. The Contractor is to cooperate with the person performing these inspections.

3. PLANS:

A Soil Erosion and Sedimentation Control Plan is included in the Contract Documents and is to be implemented as a part of the procedures necessary to implement requirements of the Act and applicable local regulations.

4. IMPLEMENTATION:

- a) Implementation of the requirements of the Act is based on the following principles:
  - 1) The disturbed area and the duration of exposure to erosion elements should be minimized.
  - 2) Stabilize disturbed areas immediately.
  - 3) Retain or accumulate runoff.
  - 4) Retain sediment.
  - 5) Do not encroach upon watercourses.

5. SYMBOLS:

The Soil Erosion and Sedimentation Control Plans contain standard symbols for the different types of measures for implementing the Act. These symbols are defined for conditions, design criteria and construction specifications in Sections II and III of the Manual.

6. SPECIFIC REQUIREMENTS:

- a) All disturbed areas shall be grassed by sodding or seeding, fertilizing, mulching and watering to obtain a ground cover which prevents soil erosion.
- b) A temporary construction egress pad shall be installed and maintained at any point where construction vehicles enter a paved road, street or parking area. The pad shall be used to prevent mud from leaving the construction area. The pad shall be constructed as shown in the Manual for Erosion and Sediment Control.
- c) All measures installed for sediment control shall be checked at the beginning and end of each day when construction is occurring to ascertain that the measures are in place and functioning properly.
- d) Erosion control measures shall be inspected by the Contractor after each rainfall event and at least daily during prolonged periods of continuous rainfall. Contractor shall make repairs and adjustments as necessary to maintain the effectiveness of all sediment and erosion control measures.

SECTION 02221  
EXCAVATION, TRENCHING AND BACKFILL FOR UTILITY SYSTEMS

1. SCOPE:

- a) Under this heading shall be included the excavation, trenching and backfilling required for all underground utility systems.
- b) Utility systems include sanitary sewers, storm sewers, water piping and force mains.

2. GENERAL:

- a) Underground piping and utility systems which are to be installed in trenches whose lowest point of excavation is below the existing ground level, and which are unaffected by an excavation for structures, may be installed at any time during the course of the work. Piping and systems to be installed in or over fill, backfill or new embankments shall not be installed until all earthwork has been completed to rough grade, nor until settlement of the fill or embankment has taken place.
- b) Braced and sheeted trenches and open trenches shall comply with all state laws and regulations, and local ordinances relating to safety, life, health and property. Also, this shall conform to the Occupational Safety and Health Standards for Excavations, Final Rule (29 CFR Part 1926) as printed in the October 31, 1989 issue of the Federal Register.
- c) The sides and bottoms of the trenches shall be protected against any instability which may interfere with the proper laying of the pipe and as necessary for the safety of the workmen and others and as may be necessary to protect adjacent structures. Refer to safety requirements of the General Conditions and Special Conditions. Protective systems for trenches shall be utilized by the Contractor and shall conform with Section 1926.652, 29 CFR Part 1926, Final Rule.

3. LOCATION AND PROTECTION OF UTILITIES AND STRUCTURES:

- a) It shall be the responsibility of the Contractor to acquaint himself with the location of all utilities and structures both present and proposed, also all existing surface structures which may be affected by work under the Contract. The location of any underground structures furnished, shown on the Plans or given on the site are based upon the available records but are not guaranteed to be complete or correct, and are given only to assist the Contractor in making a determination of the existence of underground structures.
- b) Overhead utilities, poles, etc., shall be protected against damage by the Contractor, and if damaged by the Contractor, shall be replaced by him. The Contractor shall notify those who maintain utilities sufficiently in advance of the proposed construction so that they may locate, uncover and disclose such work. If the progress of construction necessitates the removal or relocation of poles, overhead utilities and obstructions, the Contractor shall make all arrangements and assume all costs of the work involved.

- c) The Contractor shall provide for the continuance of the flow of any sewers, drains, water pipes, and water courses, and the like. Where such facilities, water courses, or electric overhead wires or conduits are interfered with by the work of the Contractor, the interruption shall be a minimum and shall be scheduled in advance with the Engineer and the utility owner.
- d) The Contractor shall restore all facilities interfered with to their original condition or acceptable equivalent. The cost of such restoration or damage caused directly by his work shall be paid for by the Contractor and shall be included in the prices bid for the items to which it pertains.

4. EXCAVATION AND TRENCHING:

- a) Excavation.  
Excavate all materials encountered. See Article 9 for payment for removal of unsuitable materials.
- b) Caution in Excavation.  
The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures in the trench zone may be determined before being damaged. He shall be held responsible for the repair or replacement of such structures when broken or otherwise damaged because of his operations.
- c) Subsurface Explorations.  
The Contractor shall make explorations and excavations at no additional charge to the Owner to determine the location of existing underground structures.
- d) Depth of Trench.  
Utilities and other piping shall be laid in open trenches as shown and specified. Trenches shall be excavated to the designated lines and grades, beginning at the outlet end and progressing toward the upper end in each case. Trenches for pipe shall be shaped to the lower 1/3 of the pipe and provide uniform and continuous bearing. Bell holes shall be dug to allow ample room for working fully around each joint.
- e) Width of Trench.  
Trenches shall be of minimum width to provide ample working space for making joints and tamping backfill. Width on each side of barrel of pipe shall be as shown on the Plans. Sides of trenches shall be closely vertical to top of pipe and shall be sheet piled and braced where soil is of unstable nature. Above the top of the pipe, trenches may be sloped. The width of the trench above this level may be wider for sheeting and bracing and the performance of the work.
- f) Alignment and Grade.  
Trenches shall be excavated on the alignments shown on the Plans, and to the depth and grade necessary to accommodate the pipes at the elevations shown. Where elevations of the invert or centerline of a pipe are shown at the ends of a pipe, the pipe shall be installed at a continuous grade between the two elevations.

g) Over Excavation.

- 1) Excavation in excess of the depth required for proper shaping shall be corrected by bringing to grade the invert of the trench with compacted coarse, granular material at no additional expense to the Owner. Bell holes shall be excavated to relieve bells of all load, but shall be small enough to ensure that support is provided throughout the length of the pipe barrel.
- 2) Excavation in excess of the depths required for manholes and other structures shall be corrected by placing a subfoundation of 1500 psi concrete, at no additional expense to the Owner.
- 3) If trenches are excavated to widths in excess of those specified, or if the trench walls collapse, the pipe shall be laid in accordance with the next better class of bedding at the expense of the Contractor.

5. TRENCHES:

- a) Trenches shall be maintained in a safe condition to prevent hazardous conditions to persons working in or around the trench.
- b) Braced and sheeted trenches and open trenches shall comply with all State and Federal Laws and Regulations, and local ordinances relating to safety, life, health and property.
- c) The top portion of the trench may be excavated with sloping or vertical sides to any width which will not cause damage to adjoining structures, roadways, utilities, etc. The bottom of the trenches shall be graded to provide uniform bearing and support each section of the pipe on undisturbed soil at every point along its entire length, except for the portions of the pipe sections excavated for bell holes and for the sealing of pipe joints. Bell holes and depressions for joints shall be dug after the trench bottom has been graded and in order that the pipe rests upon the trench bottom for its full length and shall be only of such length, depth and width for making the particular type of joints. The bottom of the trench shall be rounded so that at least the bottom one-third of the pipe shall rest on undisturbed earth for the full length of the barrel as jointing operations will permit. This part of the excavation shall be done manually only a few feet in advance of the pipe laying by workmen skilled in this type of work.
- d) The sides of all trenches and excavation for structures shall be held by stay bracing, or by skeleton or solid sheeting and bracing according to conditions encountered, to protect the excavation, adjoining property and for the safety of personnel. Bracing and shoring may be removed when the level of the backfilling has reached the elevation to protect the pipe work and adjacent property. When sheeting or shoring above this level cannot be safely removed, it may be left in place. Timber left in place shall be cut off at least 2 feet below the surface. No sheeting below the level of the top of the pipe may be removed.

6. DEWATERING AND PROTECTION AGAINST WATER:

- a) The Contractor shall remove water from the site and shall lower the ground water level as necessary to complete the excavations to the required depths and so that all required work can be accomplished in the dry. The Contractor shall do such well construction, well pointing, sheeting, ditching, and pumping, and shall construct necessary drains, channels and sumps to keep his excavations and new structures clear of ground water, storm water or sewage and to keep his construction areas dry during the progress of the Work.
- b) Adequate measures and protection shall be provided by the Contractor to protect his work from damage from uplift due to ground water, storm water, or flood water. Any damages which may result shall be the Contractor's responsibility.
- c) The Contractor shall accept all responsibility for damage to the work of this Contract because of floods and water pressures and other water damages and shall accept all risks of floods and other events which may occur.
- d) All water discharged by pumping operations shall be discharged so as not to interfere with work under this Contract or with existing structures and operations. Water from dewatering operations shall be conveyed to the existing drainage features, using piping and pumping facilities provided by the Contractor.
- e) Route of dewatering pipe shall be subject to the Owner's review. Discharge facilities and water quality shall comply with applicable regulations of State and Federal agencies.
- f) Dewatering operations shall be uninterrupted and continuous during the course of the work so as not to endanger any construction in place or to present a hazard to workmen in and around the site. The Contractor shall take all measures necessary including, but not limited to, standby equipment and constant attendance to ensure that the dewatering system remains operational and effective throughout the period of time that it is required.
- g) No water shall be allowed to run over any uncompleted portions of the work. No units of the work shall be constructed under water. The cost of dewatering shall be included in the price bid for the item of work for which it is required.

7. PILING EXCAVATED MATERIALS:

All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing roadways.

8. LIMIT TO LENGTH OF OPEN TRENCH:

The routine of operation shall be so organized to keep the length of open trench to a practicable minimum.

9. REMOVAL OF UNSUITABLE BEDDING MATERIAL:

- a) Where, in the opinion of the Owner's representative, the subgrade of the pipe trench is unsuitable material, the Contractor shall remove the unsuitable material 6" deep and furnish and place stone backfill in the trench to stabilize the subgrade. Attention is invited to the fact that the presence of water does not necessarily mean that stone

backfill is required. If well points or other types of dewatering will remove the water, the Contractor shall be required to completely dewater the trench in lieu of stone backfill. Stone backfill will be limited to areas where well pointing and other conventional methods of dewatering will not produce a dry bottom. Stone shall be placed 6" deep and 18" wider than the pipe at the barrel. The pipe shall be carefully bedded in the stone as specified or in accordance with the manufacturer's recommendations. Should overdepth excavation be necessary to remove unsuitable material below the specified bedding and to replace it with satisfactory material, the Contractor will be paid for this work, based on the following requirements:

- 1) Unsuitable materials for bedding are those classified as MH, CH, OL, OH and PT in accordance with the Unified Soil Classification System. Excavated soils that are too wet to compact shall not be classified unsuitable due to high moisture content alone.
- 2) When the trench is excavated to the plan depth or as required by these Specifications, and soft or other material not suitable for bedding purposes is encountered in the trench, the Contractor shall immediately notify the Owner's representative for inspection and measurement of the unsuitable material to be removed.
- 3) No overdepth excavation or backfilling of the overdepth excavated trench shall start until proper measurements of the trench have been taken by the Owner's representative for the determination of the quantity in cubic yards of unsuitable material excavated. Backfill material and backfilling shall conform to the requirements specified in Article 12 below.
- 4) No payment will be made for any overdepth excavation of soft unstable material due to the failure of the Contractor to provide adequate means to keep the trench dry.
- 5) No payment will be made for any overdepth excavation of the unsuitable material and replacement not inspected and measured by the Owner's representative prior to excavation.

10. BEDDING OF CONCRETE PIPE:

- a) Pipe shall be laid on foundations prepared in accordance with ASTM C12 as modified herein and in accordance with the various classes of bedding required by the trench width and trench depth for the size of pipe to be laid. Bedding shall be included in the appropriate unit price bid for concrete pipe.

- 1) Class "A" Bedding.

Class "A" Bedding shall be achieved by either of the following two construction methods:

- a. Concrete Cradle.

The pipe shall be bedded in a monolithic cradle of plain or reinforced concrete having a minimum thickness under the pipe barrel of one-fourth the inside diameter of the pipe but in no case less than 4 inches and extending up the sides to a height of at least

one-fourth of the pipe outside diameter. The cradle shall have a width equal to the full width of the trench as excavated. The pipe shall be laid to line and grade on concrete blocking after which the concrete shall be placed to the limits described. Concrete shall be 3,000 psi concrete.

b. Concrete Arch.

The pipe shall be bedded in crushed stone or rounded gravel bedding material having a minimum thickness under the pipe barrel of one-fourth the outside diameter of the pipe but in no case less than 4 inches and shall extend up the sides of the pipe to the horizontal centerline. The top half of the pipe shall be covered with a monolithic plain or reinforced concrete arch having a thickness of one-fourth the inside diameter of the pipe but in no case less than 4 inches at the crown of the pipe. The arch shall have a width equal to the full width of the trench as excavated.

2) Class "B" Bedding.

Class "B" Bedding shall be achieved by either of two construction methods:

- a. The bottom of the trench excavation shall be shaped to conform to a cylindrical surface with a radius at least 2 inches greater than the radius of the outside of pipe with a width sufficient to allow 6/10 of the width of the pipe barrel to be bedded in fine granular fill placed in the shaped excavation. Carefully compacted backfill shall be placed at the sides of the pipe to a thickness of at least 12 inches above the top of the pipe.
- b. The pipe may be bedded in compacted crushed stone, placed on a flat trench bottom. The crushed stone bedding shall have a minimum thickness of 1/4 the outside pipe diameter and shall extend halfway up the pipe barrel at the sides. The remainder of the side fills and a minimum depth of 12 inches over the top of the pipe shall be billed with carefully compacted material.

3) Class "C" Bedding.

Class "C" Bedding shall be achieved by either of two construction methods:

- a. The pipe shall be bedded in an earth foundation formed in the trench bottom by a shaped excavation which will fit the pipe barrel with reasonable closeness for a width of at least 50 percent of the outside pipe diameter. The side fills and area over the pipe to a minimum of 12 inches above the top of the pipe and shall be filled with compacted fill.
- b. The pipe shall be bedded in compacted granular material placed on a flat trench bottom. The granular bedding shall have a minimum thickness of 4 inches under the barrel and shall extend 1/6 of the

outside diameter up the pipe barrel at the sides. The remainder of the side fills and to a minimum depth of 12 inches over the top of the pipe shall be filled with compacted backfill. Class "C" Bedding shall be used except where the use of Class "A" or Class "B" bedding is shown on the Plans.

- 4) Class "D" Bedding.  
Class "D" Bedding is achieved by shaping bell holes only on a flat trench and no care is taken to secure compaction at the sides and immediately over the pipe. This type bedding is not permitted.
- 5) Bell Holes.  
Bell holes shall be provided in all classes of bedding to relieve pipe bells of all load, but small enough to insure that support is provided throughout the length of the pipe barrel.
- 6) Stone Bedding. (Backfill)  
Stone Bedding material shall consist of crushed stone or pea gravel, clean and graded, 95 to 100 percent of which shall pass a 3/4 inch sieve with 95 to 100 percent retained on a No. 4 sieve. Bedding material shall be placed on a flat bottom trench and thoroughly compacted by tamping or slicing with a flat blade shovel. Compacted bedding material shall be extended up the sides of the pipe to the heights shown for the various classes of bedding.
- 7) Overwidth Excavation.  
If trenches are excavated to widths in excess of those specified below, or if trench walls collapse, pipe shall be laid in accordance with the requirements for at least the next better class of bedding at the expense of the Contractor.
- 8) Borrow Backfill.  
Borrow backfill will be required if there is not sufficient suitable material available from other parts of the work to backfill the trenches. Borrow backfill from approved borrow pits shall be used. Only those soils in the borrow pits that meet the specified requirements for suitable material shall be used.
- 9) Trench Widths.  
Trench widths at the top of the pipe and depths for concrete pipes using the various bedding classes, shall not exceed those shown on the Plans.

11. BEDDING OF PVC PIPE:

- a) Pipe shall be bedded true to line and grade with uniform and continuous support from a firm base in accordance with ASTM D2321 as modified herein. Blocking shall not be used to bring the pipe to grade. Bedding material shall be included in the unit price for PVC pipes.
- b) Embedment materials listed here include a number of processed materials plus the soil types defined by the USCS Soil Classification Systems in ASTM D2487. These

materials are grouped into categories according to their suitability for this application:

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- 1) Class I.  
Angular 6 to 40 mm (1/4" to 1 1/2"), graded stone including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, and crushed shells.
  - 2) Class II.  
Coarse sands and gravels with maximum particle size of 40 mm (1 1/2"), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.
  - 3) Class III.  
Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC, SM and SC are included in this class.
  - 4) Class IV.  
Silt, silty clays and clays including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, ML, CH and CL are included in this class. These materials are not to be used for bedding, haunching or initial backfill.
  - 5) Class V.  
This class includes the organic soils OL, OH and PT as well as soils containing frozen earth, debris, rocks larger than 40 mm (1 1/2") in diameter, and other foreign materials. These materials shall not be used for bedding, haunching or initial backfill.
- c) Compaction of foundation, bedding, haunching and initial backfill shall extend to the trench wall.
  - d) Embedment material in the area around the pipe shall be installed with care. Care shall be used to ensure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. Precautions must be taken to prevent movement of the pipe during placing of the material through the pipe haunch. Place initial backfill material in three stages: First, to the center line of the pipe; second, to the top of the pipe; and third, to a point 12 inches above the top of the pipe. Compact each stage of haunching and initial backfill by hand or mechanical tamping to a minimum of 90 percent Standard Proctor Density. Where unstable trench walls exist because of migratory materials such as waterbearing silts or fine sands, care shall be taken to prevent the loss of side support through the migratory action.
  - e) Avoid contact between the pipe and compaction equipment. Compaction of haunching, initial backfill and backfill material shall be done in such a way so that compaction equipment will not have a damaging effect on the pipe.
  - f) Trench depths, using the various bedding classes, shall not exceed those shown below:
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MAXIMUM TRENCH DEPTH

<u>Pipe Size</u>	<u>Class IV Bedding</u>	<u>Class I or Class III Bedding</u>	<u>Class II Bedding</u>
All Sizes	Not To Be Used	16'	30'

Density (Standard Proctor) of 90 percent minimum in pipe zone.

- g) ASTM D2321 "Underground Installation of Flexible Thermoplastic Sewer Pipe" shall be used in conjunction with the above.

12. BACKFILLING:

- a) Backfilling consists of placing suitable materials removed during the excavation into the excavated areas, placing embedment materials and compacting the same to a density equal to or greater than what exists before excavation or as specified herein.
- b) Under backfilling operations is also included removal of excess materials and debris from the site, leveling all depressions caused by operation of equipment and maintaining the backfilled areas until accepted by the Owner.
- c) All backfill material shall be free of stones, concrete and clay lumps larger than 1/3 cubic foot. Roots, stumps and rubbish which will decompose will not be permitted in the backfill. Backfill material shall have its moisture content corrected, as may be necessary before being placed in the trench to bring the moisture content to approximately "optimum" for good compaction. Any rock, stone, concrete, clay lumps larger than 1/3 cubic foot in volume, rubbish and debris shall be removed from the site and disposed of by the Contractor in a lawful manner.
- d) Backfilling operations in this work are referred to herein as Backfilling at the Pipe Zone, Type "A" and Type "B".
- e) Backfilling in the excavated areas below parts of proposed structures shall be referred to hereinafter as Type "A" Backfilling.
- f) Where trenches cross or extend under structures or into present roadways, future roadways or parking areas as shown on the Plans, the backfilling shall be referred to hereinafter as Type "A" Backfilling.
- g) Backfilling in all other areas shall be referred to hereinafter as Type "B" Backfilling.
  - 1) Backfilling at the Pipe Zone.

Throughout the entire construction, backfilling at the pipe zone shall include bedding and shall be as follows: Backfill material shall be placed below, around each side, and over the top of the pipe, in approximately horizontal layers to a height of 12 inches over the top of the pipe. Layers shall be of such thickness to facilitate the required compaction. This backfill shall be well compacted by using mechanical tamping equipment in such manner as not to damage the pipe, pipe joints or shift the pipe alignment. Workmen shall not be permitted to walk over the pipe until at

least 12 inches of compacted fill has been placed over the pipe. The Contractor shall not use water to obtain compaction except for adding water to the backfill material before placing in the trench to bring the moisture content to approximately "optimum" for good compaction.

2) Type "A" Backfilling.

Type "A" backfilling consists of placing sand and gravel or other suitable materials excavated from the trench in the trench in 6 inch thick layers from a point 12 inches above the top of the pipe and mechanically tamped or compacted by rolling until the backfill density after compaction is equal to 98 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). No water shall be used to secure compaction except for adding water to the backfill material before placing in the trench to bring moisture content to approximately "optimum" for good compaction. Each 6 inch thick layer shall be mechanically tamped before additional backfill material is placed in the excavated area.

3) Type "B" Backfilling.

Type "B" Backfilling consists of placing sand and gravel or other suitable material excavated from the trench in the trench in 12 inch thick compacted layers from a point 12 inches above the top of the pipe. Each 12 inch thick layer shall be compacted before additional backfill material is placed in the excavation. Only mechanical tamping, use of roller or small tractor will be allowed. The density of the backfilled material after compaction shall be not less than 95 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). Except in the upper 12 inches, water shall be added to backfill material only before being placed in the trench in order to bring the moisture content to approximately "optimum" for good compaction.

13. PROTECTION OF WATER SUPPLY PIPES:

a) Horizontal Separation.

Sewers and force mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, such deviation may allow installation of the sewer or force main closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on the side of the sewer or force main and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer or force main.

b) Crossings.

Sewers and force mains crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer or force main. This shall be the case where the water main is

either above or below the sewer or force main. The crossing shall be arranged so that the sewer or force main joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer or force main, adequate structural support shall be provided for the sewer or force main to prevent damage to the water main.

c) Special Conditions.

When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer or force main shall be designed and constructed equal to water pipe, and shall be pressure tested to assure watertightness prior to backfilling.

14. UTILITY CONSTRUCTION IN OTHER EXCAVATION:

Where utilities are required to be constructed in areas also requiring excavation and backfill for other work, coordinate the work so that the parts come together properly and the construction of the various parts can be done without damage to other parts. Place bedding which will form bearing for pipes, using suitable material and shaping to the lower 1/3 of the pipe to provide uniform and continuous bearing. Compaction of backfill material which will form bearing shall be equal to that specified hereinbefore under Type "A" Backfilling. After the pipe or other utility is placed, backfilling shall proceed as specified hereinbefore following the requirements specified under "Backfilling at the Pipe Zone," "Type 'A' Backfilling", and "Type 'B' Backfilling" as applicable.

15. TESTING:

a) General.

The Contractor shall select an approved independent testing laboratory for the purpose of identifying soils, checking densities, and classifying soils materials during construction. All testing will be paid for by the Contractor as provided in the Special Conditions. Copies of all test results shall be furnished to the Owner's representative.

b) Moisture-Density Tests.

Testing shall be in accordance with ASTM Method D698 . A test shall be performed on each type of material used in the work regardless of source. Tests will be accompanied by particle-size analyses of the soils tested (ASTM Methods D421 and D422). Changes in color, gradation, plasticity or source of fill material will require the performance of additional tests. Copies of all test results shall be furnished to the Owner's representative.

c) Field Density Tests.

- 1) Tests shall be made in accordance with ASTM Method D1556. Tests shall be made in accordance with the following minimum schedule or as required by the soils technician or as may be directed by the Engineer:
- 2) One test for each lift of backfill for each 500 feet of trench or fraction thereof.

- d) Submittals.
- 1) The soils technicians will submit formal reports of all compaction tests and retests. The reports are to be furnished to the Owner and the Owner's representative as soon as possible upon completion of the required tests.
  - 2) This report information is to include but not be limited to the following:
    - a. Date of the test and date submitted.
    - b. Location of test.
    - c. Wet weight, moisture content and dry weight of field sample.
    - d. Description of soil.
    - e. Maximum dry density and moisture content of the lab sample which best matches the field sample in color, texture, grain size and maximum dry density.
    - f. Ratio of field dry density to maximum lab dry density expressed as a percentage.
    - g. Comments concerning the field density passing or failing the specified compaction.
    - h. Comments about recompaction if required.
- e) Compaction Results.
- 1) If any compaction test reveals that fill or backfill is not compacted as specified, the Contractor shall scarify and recompact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction. These additional tests, required due to failure of the original test, shall be paid for by the Contractor without reimbursement by the Owner.
  - 2) The soils technician is to advise the Owner's representative and the Contractor's Superintendent immediately of any compaction tests failing to meet the specified minimum requirements. No additional lift is to be placed on a lift with any portion failing.

16. CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS:

- a) Excavation, Trenching and Backfilling Operations.  
Excavation, trenching and backfilling along highways, streets and roadways shall be in accordance with the applicable regulations of the State Highway Department and City of Pooler Engineer with reference to construction operations, safety, traffic control, road maintenance and repair.
- b) Protection of Traffic.  
Provide suitable signs, barricades and lights for protection of traffic, in locations where traffic may be endangered by construction operations. All signs removed by reason of construction shall be replaced as soon as condition which necessitated such removal has been cleared. No highway, street or roadway shall be closed without first obtaining permission from the proper authorities.

- c) Construction Operations.
  - 1) The Contractor shall construct all work along highways, streets and roadways using the following sequence of construction operations, so as to least interfere with traffic:
    - a. Stripping.  
Where the pipe line is laid along road shoulders, sod, topsoil and other material suitable for shoulder restoration shall be stripped and stockpiled for replacement.
    - b. Trenching, Laying and Backfilling.  
Excavate trenches, install pipe line and backfill. The trench shall not be opened any further ahead of pipe laying operations than is necessary for proper laying operations. Trenches shall be progressively backfilled and consolidated and excess material removed immediately.
    - c. Shaping.  
Immediately after completing backfilling operation, reshape any damage to cut and fill slopes, side ditch lines, and shall replace top soil, sod and any other materials removed from shoulders.
- d) Excavated Material.  
Excavated material shall not be placed along highways, streets, and roadways in such manner as to obstruct traffic. Roadways and pavement will be maintained free of earth material and debris.
- e) Drainage Structures.  
All side ditches, culverts, cross drains and other drainage structures shall be kept clear of excavated material and be free to drain at all times.
- f) Maintaining Highways, Streets, Roadways and Driveways.
  - 1) The Contractor shall furnish a road grader which shall be available for use at all times for maintaining highways, streets and roadways. All such streets, highways and roadways shall be maintained in suitable condition until completion and final acceptance of the work.
  - 2) Repair all driveways that are cut or damaged. Maintain them in suitable condition until completion and final acceptance of the work.

17. REMOVING AND RESETTING FENCES:

Where existing fences must be removed to permit construction, the Contractor shall remove such fences. As construction progresses, reset the fences in their original location and to their original condition. All costs of removing and resetting fences and such temporary works as may be required shall be included in the prices for the utility line.

18. PROTECTING TREES, SHRUBBERY AND LAWNS:

Trees and shrubbery along trench lines shall not be disturbed unless absolutely necessary. Trees and shrubbery necessary to be removed shall be properly heeled-in and replanted. Heeling-in and replanting shall be done under the direction of an experienced

nurseryman. Where utility trenches cross established lawns, sod shall be cut, removed, stacked and maintained in suitable condition until replaced. Topsoil underlying lawn areas shall likewise be removed and kept separate from general excavated materials. Removal and replacement of sod shall be done under the direction of an experienced nurseryman.

19. REMOVE AND REPLACE PAVEMENT:

- a) Pavement and base course which must be removed for constructing sewers, manholes, force mains, water lines, and all other appurtenances in streets shall be replaced as specified in Section 02500.
  - 1) The top 18 inches of subgrade material immediately under the paving base and also road shoulder shall be carefully removed and kept separate from the rest of the excavated material. This material, if it is suitable material, shall be placed in the top 18 inches of the backfill. Further compaction shall be accomplished by leaving the backfilled trench open to traffic while maintaining the surface with crushed stone or gravel. Settlement in trenches shall be refilled with crushed stone or gravel, and such maintenance shall continue until replacement of pavement.
  - 2) Where utility lines are constructed on unpaved streets, roads or easements, the top 18 inches of soil shall be stripped and kept separate from the excavation from trenches. After the line has been installed and the backfill completed within 18 inches of the original grade, the salvaged soil, if suitable, shall be replaced. This work shall be considered as general clean up along with the removal of surplus excavated materials from the site and the restoring of the surface outside trench limits to its original condition, the cost of which shall be included in the price bid for the utility line.

20. WALKS, DRIVES, CONCRETE CURB AND GUTTER:

- a) Walks and drives removed or damaged during the course of construction shall be replaced with Class "A" Concrete at the same thickness as removed. They will be cut to a neat edge with a masonry saw after backfilling and compacting trench in 6 inch layers to a density not less than 98 percent at  $\pm 2$  percent of optimum moisture content as determined by the Standard Proctor Test.
- b) Concrete curb and gutter sections removed or damaged during the course of construction shall be replaced in full sections with concrete having a compressive strength of at least 3,000 psi.

SECTION 02400  
STORM DRAINAGE SYSTEM

1. SCOPE:  
Under this heading shall be included all operations in connection with the installation of the storm drainage system.
  
2. EXCAVATION AND BACKFILL:  
Excavation and backfilling shall be as specified in Section 02221, Excavation, Trenching and Backfilling for Utility Systems.
  
3. DELIVERY, STORAGE, AND HANDLING OF MATERIALS:
  - a) Delivery and Storage.  
Materials delivered to site shall be inspected for damage, unloaded, and stored with the minimum of handling. Do not store materials directly on the ground. Inside of pipes and fittings shall be kept free of dirt and debris.
  - b) Handling.  
Materials shall be handled in such a manner as to insure delivery to the trench in sound undamaged condition. Pipe shall be carried to the trench, not dragged. Gasket materials and plastic materials that are not to be installed immediately shall not be stored in the direct sunlight.
  
4. PIPE FOR CULVERTS AND STORM DRAINS:  
Pipe for culverts and storm drains shall be as indicated and shall conform to requirements for the following types.
  - a) Concrete Pipe.  
Except where noted pipe 12 inches and larger shall be reinforced concrete pipe conforming to ASTM C76, Class III. Pipe smaller than 12 inches shall be non-reinforced concrete pipe conforming to ASTM C14.
    - 1) Joints.
      - a. Joints shall be made by use of a continuous rubber gasket conforming to the requirements of ASTM C443. Type II or III rubber gaskets shall be used on the pipe. Joints which do not fit tightly and uniformly shall be grouted after that segment of the line has been installed. All joints under pavement shall be wrapped with a two foot wide strip of non-woven filter fabric lapped two feet.
      - b. The assembly of the gasketed joint shall be performed as recommended by the pipe manufacturer. The elastomeric gaskets may be supplied separately in cartons or prepositioned in the bell joint or coupling at the factory. In all cases, clean the gasket, the bell or coupling interior, especially the groove spigot area to remove any dirt or foreign material before assembling. Inspect the gasket, pipe spigot bevel, gasket groove, and seating surfaces for damage or deformation. When gaskets are separate, use only gaskets which are designed for and supplied with the pipe. Insert them as recommended by the manufacturer.

- c. Lubricant should be applied as specified by the pipe manufacturer. Align the spigot to the bell and insert the spigot into the bell until it contacts the gasket uniformly.

5. DRAINAGE STRUCTURES:

- a) Drainage structures shall be of the following types, constructed of the materials specified for each type and in accordance with the indicated details.
  - 1) Manholes and Inlets.  
Construction shall be of precast reinforced concrete, complete with frames and covers or gratings. Precast concrete manholes and inlets shall be designed for the required depth and to sustain the required wheel loads and/or surface pressures. When manholes and inlets are to be constructed of prefabricated materials, shop drawings shall be submitted for approval before ordering the material.
  - 2) Connection to Existing Inlets and/or Manholes.  
Pipe connections to existing inlets and/or manholes shall be in such a manner that the finished work will conform as nearly as practicable to the applicable requirements specified for new inlets and/or manholes, including all necessary concrete work, cutting and shaping.

6. MATERIALS FOR DRAINAGE STRUCTURES:

- a) Mortar.
  - 1) Mortar for connections to other drainage structures, and brick or block construction shall conform to ASTM C270, Type M, except the maximum placement time shall be one half hour.
  - 2) Hydrated lime may be added to the mixture of sand and cement in a quantity equal to 25 percent of the volume of cement used. Hydrated lime shall conform to F.S. SS-L-351, Type M, or ASTM C141, Type A.
  - 3) The quantity of water in the mixture shall be sufficient to produce a stiff workable mortar but in no case shall exceed 5 gallons of water per sack of cement. Water shall be clean and free of harmful acids, alkalis, and organic impurities. The mortar shall be used within 30 minutes after the ingredients are mixed with water.
- b) Precast Reinforced Concrete Manholes.  
Manholes shall conform to ASTM C478 or AASHTO M199. Joints between precast concrete risers and tops shall be flexible plastic gasket and shall provide a flexible watertight joint. Flexible plastic gasket shall be RAM-NEK or equal.
- c) Bricks.  
Bricks shall conform to ASTM C62, Grade SW; ASTM C55, Grade S-I or S-II; or ASTM C32, Grade MS. Mortar for jointing and plastering shall consist of one part Portland cement and two parts fine sand. Lime may be added to the mortar in a quantity not more than 25 percent of the volume of cement. The joints shall be filled completely and shall be smooth and free from surplus mortar on the inside of the structure. Brick structures shall be plastered with 3/4 inch of mortar over the entire outside surface of the walls. For square or rectangular structures, brick shall be laid in stretcher courses with a header course every sixth course. For

round structures, brick shall be laid radially with every sixth course a stretcher course.

d) Frame and Cover or Gratings.

Fabrication shall be from one or more of the material options presented in F.S. RR-F-621, except the malleable cast iron option shall conform to ASTM A220, Grade 40010. Weight, shape, size and waterway openings for grates and curb inlets shall be as indicated on the plans. Frames and covers for curb inlets and for areas not subject to vehicular traffic or storage may be malleable iron if so indicated. Malleable iron frames and covers shall conform to ASTM A220 and shall be of the weight, shape and size indicated.

7. BEDDING:

See Section 02221 "Excavation, Trenching and Backfill for Utility Systems," for additional requirements.

8. PLACING PIPE:

Each pipe shall be carefully examined before being laid, and defective or damaged pipe shall not be used. Pipe lines shall be laid to the grades and alignment indicated. Proper facilities shall be provided for lowering sections of pipe into trenches. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or weather are unsuitable for such work. Pipe shall be moved horizontally into place by use of a winch or other suitable means. A backhoe bucket or other means which could damage the pipe shall not be used. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary. All pipe in place shall be inspected before backfilling, and those damaged during placement shall be removed and replaced at no additional cost to the Owner. No additional compensation will be given to the Contractor for the required diversion of drainage and/or dewatering of trenches.

9. BACKFILLING:

Backfilling shall be done in accordance with Section 02221, "Excavation, Trenching and Backfill for Utility Systems."

10. STONE RIPRAP:

a) Materials.

The stone used for stone slope protection shall be sound, rough, dense and resistant to the action of air and water and satisfactory to the Owner's representative. The stone shall have a density of not less than 150 pounds per cubic foot. Neither the breadth nor the thickness of any piece of stone shall be less than one-third of its length. The stone will be subject to inspection on delivery and if found to be improper gradation or quality, it will be rejected. The stone shall consist of quarry run sizes, graded as specified below:

STONE SLOPE PROTECTION

SIZE OF STONE	PERCENT OF TOTAL WEIGHT SMALLER THAN THE GIVEN SIZE
	Class I
100 lb.	100
60 lb.	80
25 lb.	50
2 lb.	Not to Exceed 10

b) Placement.

The slope protection shall be placed in such a manner as to produce a reasonable well-graded mass of material with the minimum practicable percentage of voids, and shall be constructed within the limits and to the lines, grades, and sections shown on the Plans. A tolerance of plus 6 inches or minus 3 inches from the limits shown on the Plans will be allowed in the finished surface on the slope protection except that the extreme of this tolerance shall not be continuous over an area greater than 100 square feet. Filter fabric (Mirafi 700X or approved equal) shall be placed and toed-in before placing riprap. Materials shall be placed in horizontal layers starting on the lower edge of the section and worked up the slope. Dumping down the slope will not be permitted. Materials shall not be dropped from a height greater than 3 feet. Any damage to the slope due to the fault of the Contractor shall be repaired at no expense to the Owner.

SECTION 02480  
GRASSING AND SODDING

1. SCOPE:  
This section includes topsoiling, fertilizing, grassing and sodding.
  
2. GENERAL:
  - a) All disturbed areas resulting from work under this Contract shall be grassed. For roads under state jurisdiction, grassing on the right-of-way shall meet the requirements of the Department of Transportation Standard Specifications. The limits of sodding are shown on the Plans.
  - b) When the amount of grassing exceeds one acre, samples shall be taken and analyzed for pH, calcium, magnesium and Soil Fertility needs. The analyses shall be the basis for determining the composition and application rate of the fertilizer and lime, and possible varieties of grass. When these tests are taken the results shall be submitted to the Owner's representative.
  
3. TOPSOILING:  
Topsoil shall be placed 4 inches to 6 inches deep over all areas to be grassed, using salvaged topsoil to the extent possible and topsoil from offsite borrow to supplement that salvaged. Topsoil shall be natural soil of the region, free from lumps, clay, toxic substance, sticks, debris, vegetation, stones over 1 inch in maximum dimension, and suitable for growing grass. Topsoil shall be spread over the areas to be grassed and shall be fine graded so as to be suitable for sowing.
  
4. FERTILIZING:
  - a) Material.
    - 1) All areas to be grassed or sodded shall have fertilizer and lime applied as specified or as determined by the soil analyses.
    - 2) Fertilizer shall be of such composition that when uniformly applied it will furnish not less than the following quantities of available plant food per 1,000 square feet:

Nitrogen	1.0 pounds
Phosphoric Acid	1.0 pounds
Potash	1.0 pounds
    - 3) This is equivalent to a commercial 10-10-10 fertilizer. Commercial fertilizer blends which will give fractions exceeding these will be accepted, provided that no fraction exceeds the required by more than 2 times. The fertilizer shall be delivered to the job in original, unopened containers.

5. SEEDING:

- a) Seed shall be delivered in suitable sealed containers labeled in accordance with applicable laws and regulations and including name and location of the producer. The pure live grass seed mixture shall be as shown on the Plans.
  - 1) Application.

Seeds are to be sown by a mechanical spreader either hand operated or machine operated. Seeding equipment shall be such as will continuously mix the seeds to prevent segregation.
  - 2) Soil Preparation.
    - a. Immediately before seeding, the soil shall have been properly prepared for seeding. Immediately after the seed has been sown, the entire area shall be raked lightly and rolled lightly to pack the soil firmly around the seed.
    - b. Seeded areas shall be moist when seeding and shall be kept moist by sprinkling until a good stand of grass is obtained (minimum of two weeks) and until the work is accepted by the Owner. Reseeding shall be done by the Contractor at his own expense as may be necessary to obtain a satisfactory stand of grass.
    - c. The Contractor shall use mulch or other additive materials when conditions do not allow an acceptable stand of grass to grow. Mulch and additive materials shall contain no weed seeds.

6. MAINTENANCE AND RESEEDING:

- a) All seeded areas shall be maintained without additional payment until acceptance of the Contract and any regrading, re-fertilizing, or reseeding shall be done at the Contractor's expense. Any areas which fail to show a "catch" or uniform stand, for any reason whatever, shall be reseeded with the original mixture, and such reseeding shall be repeated until final acceptance. The Contractor shall properly water, mow, and otherwise maintain all seeded areas until final acceptance.
- b) Damage resulting from erosion, gulleys, washouts, or other causes shall be repaired by filling with topsoil, tamping, re-fertilizing, and reseeding by the Contractor at his expense if such damage occurs prior to acceptance of the Contract.

7. SUBMITTAL:

Manufacturer's data shall be submitted to the Owner's representative on grass seed and fertilizer before the materials are delivered to the project site.

SECTION 02500  
BASE COURSE AND BITUMINOUS PAVEMENT

1. SCOPE:

Under this heading shall be included the furnishing and installation of base course and pavement as shown including subgrade preparation, base course and pavement.

2. GENERAL:

Subgrade preparation shall include leveling, proof-rolling and compacting of the subgrade as required. Installation of the base course shall include the placing and compacting of the material with appropriate equipment. Pavement shall be placed as shown on the plans with the necessary equipment and shall include any prime coats or tack coats required. All work shall be in conformity with the lines, grades and typical cross-sections shown on the Plans. The Contractor must have all equipment and workers on the job site necessary to perform a given operation when it is initiated.

3. SUBGRADE PREPARATION:

The subgrade shall be brought to the line and grade necessary to accommodate the base and pavement at the required finished grades. All subgrade shall be proof-rolled as specified, before base course is placed on the subgrade.

4. BASE COURSE:

a) Preparation of Base.

- 1) The surface of the base course will be inspected by the Owner's representative for adequate compaction and surface tolerances specified in applicable base course or sub-base course. Any ruts or soft yielding spots that may appear in the base course, any areas having inadequate compaction, and any deviations of the surface from the requirements specified for the base course shall be corrected by loosening the affected areas, by removing unsatisfactory material and adding approved material where required, and by reshaping and recompacting to line and grade and to the specified density requirements. Compaction of base material shall be done by conventional means using a 30,000 to 40,000 pound vibratory roller or other means of obtaining the required compaction.
- 2) The lines and grades shown on the Contract Drawings for each pavement category of the Contract shall be established and maintained by means of line and grade stakes placed at the site of the work by the Contractor.

b) Graded Aggregate Base Course.

The aggregate in the base course shall consist of a mixture of either crushed gravel, together with sand, sand-gravel, soil or other materials having similar characteristics combined as necessary to give a mixture conforming to the requirements, prescribed herein. The material and installation shall meet the requirements of Section 310 of the Georgia Department of Transportation Standard Specifications.

<u>Sieve Designation</u>		<u>Percent By</u>	
		<u>Weight Passing</u>	
		<u>Group I</u>	<u>Group II</u>
2"	100	100	
1-1/2"	97-100	97-100	
3/4"	60-95		60-90
No. 10	25-50		25-45
No. 60	10-35		5-30
No. 200	7-15		4-11

c) Limerock Base Course.

- 1) At the Contractor's option limerock of either Miami or Ocala formation may be used, but limerock of only one formation may be used on any contract. Material shall meet the requirements of Georgia Department of Transportation Standard Specification Section 815.2.02 (2001 ed.). The minimum percentage of carbonates of calcium and magnesium in the limerock material shall be 70. The maximum percentage of water sensitive clay material shall be 3. The liquid limit shall not exceed 35 and the material shall be non-plastic.
- 2) Limerock material shall not contain cherty or other extremely hard pieces, or lumps, balls or pockets of sand or clay size material in sufficient quantity as to be detrimental to the proper bonding, finishing, or strength of the limerock base.
- 3) At least 97 percent (by weight) of the material shall pass a 1-1/2 sieve and the material shall be graded uniformly down to dust. The fine material shall consist entirely of dust of fracture. All crushing or breaking up which might be necessary in order to meet such size requirements shall be done before the material is placed on the road.

5. BITUMINOUS PRIME:

Bituminous prime shall be cutback asphalt RC-70, MC-70 or MC-30 applied at the rate of 0.25 gallons per square yards. The material and application shall comply with the applicable portions of the Department of Transportation Standard Specifications and the material and application rate can be adjusted when the applicable section so recommends.

6. BITUMINOUS TACK COAT:

The bituminous tack coat shall be an asphaltic material which meets the requirements of Section 413 of the Georgia Department of Transportation Standard Specifications. Application rate shall be at the rate of 0.05 gal/sy.

7. BITUMINOUS PAVEMENT:

- a) The bituminous wearing surface and binder shall be plant mixes conforming to the requirements of Section 400 of the Georgia Department of Transportation Standard Specifications. The job mix shall meet the requirements of Section 828 of the Georgia Department of Transportation Standard Specifications.

- b) A job mix formula indicating the single definite percentage for each sieve fraction of aggregate and for asphalt shall be submitted prior to surfacing operations. The job mix formula shall also show the percent voids, the percent voids filled with asphalt, and the unit weight per cubic foot of compacted mix.
- c) The general composition limits are extreme ranges of tolerances to govern mixtures made from any raw materials meeting the specifications. The submission of the job mix formula shall bind the Contractor to furnish a paving mixture meeting the exact formula within allowable tolerances of plus or minus 1/2 percent for asphalt, plus or minus 7 percent of 1/2 inch and larger sieve sizes, plus or minus 5 percent for material passing the 1/2 inch sieve and retained on the No. 200, and plus or minus 1/2 percent of material passing the No. 200.
- d) Compaction shall be done with an 8 to 10 ton steel-wheeled roller or other means approved by the Owner's representative. Thickness shall not vary more than one-fourth inch and smoothness shall not exceed one-eighth inch for a ten foot straight edge.
- e) Base and pavement shall be cored for thickness at points determined by the Owner or his representative, at a minimum of 2 per 500 L.F. (one on edge and one on centerline with edge alternating). In areas of thickness deficiency, additional cores shall be taken as directed by the Owner, and deficiencies shall be remediated to the satisfaction of the Owner without recourse.

8. REMOVE AND REPLACE PAVEMENT:

Pavement and base course which must be removed for constructing sewers, manholes, force mains, water lines, and all other appurtenances in streets shall be replaced with the paving section shown on the drawings. The pavement shall be removed to neat lines cut by a masonry saw. The top 18 inches of subgrade material, if suitable for re-use, immediately under the paving base shall be carefully removed and kept separate from the rest of the excavated material. This material shall be placed in the top 18 inches of the backfill. Further compaction shall be accomplished by leaving the backfilled trench open to traffic while maintaining the surface with crushed stone or gravel. Settlement in trenches shall be refilled with crushed stone or gravel, and such maintenance shall continue until replacement of pavement.

9. TESTING:

- a) The following tests will be made in accordance with the current edition of the appropriate Department of Transportation Standard Specifications.
- b) At least one density determination shall be made for each 900 square yards of base. Asphalt extraction and aggregate gradation on the asphaltic concrete plant mix: one for each 200 tons of material, or fraction thereof, delivered to the job site.

10. PROOF ROLLING:

Proof-rolling will be done with a fully loaded tandem axle dump truck capable of transferring a load in excess of 20 tons. Test rolling will be done parallel to the centerline at speeds between 2 and 5 miles per hour. Areas where pumping, rutting or excessive

deflection is observed after successive passes will be undercut, backfilled and properly compacted.

SECTION 02520  
CONCRETE SIDEWALKS, CURB AND GUTTER

1. SCOPE:  
Under this heading shall be included the construction of all concrete sidewalks, curb and gutter.
  
2. CONCRETE:
  - a) Concrete shall be composed of cement, admixtures, fine aggregate, coarse aggregate, and water proportioned and mixed to produce a plastic workable mix in accordance with the requirements of American Concrete Institute (ACI) Manual of Concrete Practice-1980 (MCP), and shall be suitable for the specific conditions of placement. Concrete shall be Class "A" per Georgia DOT Standard Specification Section 500.1.03 and shall have 28-day compressive strength of not less than 3,000 psi, and contain not less than 611 pounds of cement per cubic yard of concrete. The maximum size of coarse, hard aggregate shall be 3/4-inch.
  - b) All concrete shall be ready mixed concrete in accordance with ASTM C94. All reinforcement shall comply with ASTM A615.
  
3. PREPARATION:  
Before placing concrete, all debris and water shall be removed from the places to be occupied by the concrete. Wood forms shall be thoroughly wetted or oiled, and the reinforcement cleaned of coatings. Formwork and the placement of reinforcement, pipes, anchors and other inserts shall be inspected by the Owner's representative before any concrete is deposited.
  
4. PLACING:  
The placing and depositing of all concrete shall be done in accordance with requirements of the ACI. Concrete shall be rapidly handled from mixer to forms and deposited as nearly as possible in its final position to avoid segregation due to rehandling or flowing. Concrete shall not be allowed to drop freely more than 4 feet. For greater drop a tremie or other means must be used. Concrete shall be spaced and worked by hand and vibrated to assure close contact with all surfaces of forms and reinforcement and leveled off at proper grade to receive finish. No concrete that has partially hardened or been contaminated by foreign material shall be deposited in the work. Concrete shall never be deposited upon soft mud or dry porous earth.
  
5. VIBRATION:  
Concrete shall be placed with the aid of manual vibration. The intensity of vibration shall be sufficient to cause flow or settlement of the concrete into place, but shall not be long enough to cause segregation of the mix. To secure even and dense surfaces, vibration shall be supplemented by hand spading in the corners and angles of forms and along form surfaces while the concrete is plastic under the vibratory action. Caution must be

exercised to prevent any injury to the inside face of the forms or any movement of the reinforcement.

6. CONSTRUCTION JOINTS, CONTROL JOINTS AND EXPANSION JOINTS:

- a) Joints shall be formed and located as indicated on the Plans, or as recommended by applicable requirements of MCP. Final locations are subject to Owner's representative review.
- b) The rate and method of placing concrete and the arrangement of construction joint bulkheads shall be such that the concrete between construction joints shall be placed in a continuous operation. Whenever it is necessary to stop work, such stops shall be located and temporary bulkheads erected. Before concreting is resumed, the surfaces of previously placed concrete shall be roughened, cleaned, wetted and slushed with grout immediately before additional concrete is placed. Grout shall be one part Portland Cement and two parts sand.
- c) Expansion joints shall be provided in walks, and curb and gutter where shown and at walls, intersecting walks and buildings. Expansion joints in walks and curb and gutter shall be made with 1/2 inch thick premolded, non-extruding expansion joint filler, "Flexcell," or "Meadows" or equal, extending through the full thickness of the concrete except the upper 1/4 inch at 50 foot intervals. When sidewalk is adjacent to curb the expansion joints shall coincide. These shall be set accurately in place to straight lines and concreted in. Control joints in sidewalks shall be spaced at intervals equal to the width of the sidewalk and in curb and gutter at 10 foot intervals. Edges of grooves, expansion joints and edges of walks and curb and gutter shall be rounded to a 1/4 inch radius with suitable grooving and edging tools.

7. FINISHING:

Walks and curb and gutter shall be finished as specified for troweled concrete except that final finishing shall be with wood floats or broomed, as directed, to produce non-slippery finish at right angles to the length unless otherwise directed. Completed work shall be finished true to line and grade and when tested with a 10 foot straightedge shall not show a variation of more than 1/4 inch from a straight line.

8. PROTECTION AND CURING:

- a) Protect concrete against frost, freezing temperatures, rapid drying and heavy rain after placing during this period, concrete shall be maintained above 70 degrees F. for at least 3 days or above 50 degrees F. for at least 5 days.
- b) Walks and other exterior concrete shall be cured by covering first with sprayed-on curing compound applied immediately after finishing and then also completely covered with an impermeable fiber filled paper for a period of not less than 72 hours.
- c) Membrane curing compound shall comply with ASTM C309 for Type I and paper shall comply with ASTM C171.

- d) Exterior concrete work constructed during hot weather shall be protected, in addition to the curing specified above, with Spencer Kellogg Anti-Spalling Compound, or Carter-Waters "Dek-Seal," or equal, applied as soon as conditions will permit after curing and when the concrete is clean and dry. The mixture shall be applied uniformly in 2 applications, in accordance with the manufacturer's recommendations. The second application shall not be made until after the first coat has been completely absorbed by the concrete.

9. REMOVAL OF FORMS:

- a) Care shall be taken in the removal of the forms not to damage the surface of the concrete. Immediately after the forms are removed, all damaged or imperfect work shall be patched in a neat and workmanlike manner, or if badly damaged or imperfect, the work shall be rebuilt. Leave shoring in place until concrete member will support its own weight safely plus any loads that may be placed upon it.
- b) Freshly stripped surfaces shall not be pointed up or touched in any manner before having been inspected by the Owner's representative.

10. PATCHING AND FINISHING CONCRETE FORMED SURFACES:

- a) Immediately after removing forms, all concrete surfaces shall be inspected, and any honeycomb, voids, stone pockets, and tie holes shall be patched before the concrete is thoroughly dry. Defective areas shall be chipped away to a depth of not less than 1 inch with the edges perpendicular to the surface. The area to be patched and a space of at least 6 inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar. The patch shall be finished in such a manner as to match the adjoining surface.
- b) Immediately upon removing forms from finished concrete surfaces, they shall be cleaned of all cement fins and any air pockets shall be carefully filled with cement mortar worked in to insure a bond with the concrete and finished off to match the surrounding surface.
- c) All vertical exterior surfaces exposed in the finished work shall be finished to a smooth rubbed finish having a uniform appearance.

SECTION 02700  
WATER DISTRIBUTION SYSTEM

1. SCOPE:

- a) Under this heading shall be included installation of the water distribution system as shown and as specified herein.
- b) The Contractor shall comply with all local codes and regulations of Consolidated Utilities. He shall coordinate work necessary for the completion of utilities with local utility companies and cooperate with the companies as required.

2. EXCAVATION AND BACKFILL:

Excavation and backfill shall be as specified in Section 02221, Excavation, Trenching and Backfilling for Utility Systems, except that the pipe zone shall be terminated at 2 inches above the pipe until after testing. A minimum cover over the top of the pipe of 36 inches from the proposed paving subgrade, shoulder or finished grade shall be provided.

3. MATERIALS:

- a) All materials shall be certified for conformance with American National Standards Institute/National Sanitation Foundation Standard 61 (ANSI/NSF 61).

1) Metal Pipe.

a. Ductile Iron Pipe.

Ductile iron pipe shall be manufactured in accordance with ANSI/AWWA C151/A21.51, latest revision. Ductile iron pipe shall be of the thickness according to ANSI/AWWA C150/A21.50, latest revision, for Pressure Class 250. Flange pipe or Victaulic grooved pipe shall be Pressure Class 350.

b. Fittings.

Fittings shall conform to ANSI/AWWA C111/A21.11, latest revision, and shall be push-on-type unless otherwise shown. Flanged Fittings shall conform to ANSI/AWWA C110/A21.10, latest revision. The AWWA C110 fitting flanges shall have facing and drilling which match AWWA C115 threaded-on flanges which also match ANSI B16.1 Class 125 flanges except where Class 250 are specifically noted. Mechanical joint fittings shall conform to ANSI/AWWA C153/A21.53, latest revision. Bolts shall conform to ANSI B18.2.1, latest revision. Nuts shall conform to ANSI B-18.2.2, latest revision. Bolts and nuts shall conform to ANSI B1.1

c. Joints.

Push-on Joints shall conform to ANSI/AWWA C111/A21.11, latest revision. Flanged Joints shall conform to ANSI/AWWA C115/A21.15, latest revision. Mechanical Joints shall conform to ANSI/AWWA C111/A21.11, latest revision. Bolts shall conform to ANSI B18.2.1, latest revision. Nuts shall conform to ANSI B-

18.2.2, latest revision. Bolts and nuts shall conform to ANSI B1.1. Restrained joints for pipe, valves and fittings shall be mechanical joints with ductile iron retainer glands equivalent to Ford 1390 Series, Mega-Lug, EBBA Series 1100 for Ductile Iron 4" and larger, EBBA Series 2000 PV for PVC Pipe 4" and larger, Flexlock, T-lock, Uni-Flange, or approved equal or push on joints equivalent to "Lock Ring", "TR Flex", "Super Lock", "Field Lock", or "MJ FIELD LOK Gasket, Series DI or Series PV" The joints shall be in accordance with the applicable portions of ANSI/AWWA C111/A21.11.

d. Lining.

Lining for ductile iron pipe and fittings shall be a cement mortar lining meeting the ANSI/AWWA C104/A 21.4, latest revision, for standard thickness lining. After cement lining, the interior of the pipe shall be given a coat of approved bituminous material in accordance with ANSI/AWWA C104/A21.4, latest revision.

e. Exterior Coating.

Exterior coating shall be an approved bituminous coating one mil thick in accordance with ANSI/AWWA C151/A21.51, latest revision.

f. Conductive Joints

Where conductive joints are indicated on ferrous pipe that are subject to electrical thawing service, metal contact strips molded into the gasket are acceptable. Conductive gasket shall be capable of carrying 600 amps. These gaskets are not to be used where corrosion monitoring and cathodic protection are a requirement.

g. Bonded Joints

Where indicated on ferrous pipe, a metallic bond shall be provided at each joint, including joints made with flexible couplings, caulking, or rubber gaskets, of non-ferrous-metallic piping to effect continuous conductivity. The bond wire shall be Size 1/0 copper conductor suitable for direct burial shaped to stand clear of the joint. The bond shall be of the thermal weld type.

2) PVC Pipe.

PVC pipe shall be Underwriters' Laboratories approved and listed, and must meet all requirements of ASTM D2241 and must bear the seal of conformance to NSF 61. PVC pipe used for water mains shall be blue in color only. It shall meet or exceed AWWA C900 with the following supplemental specifications:

a. Pressure Pipe.

Pipe 4 inches to 12 inches shall be Class 150 with Dimension Ratio 18 or lower (thicker). Pipe less than 4 inches shall be polyethylene pipe. Pipe 14 inches and larger shall be Class 235 C905 DR 18.

- b. Routine Hydrostatic Proof Test Requirements.  
Each piece of pipe shall be tested at 4 times rated pressure class.
  - c. Outside Diameter.  
Pipe shall have cast iron pipe outside diameter.
  - d. Joints.  
Pipe shall have elastomeric-gasket integral bell end. Bell section shall have a thickened wall. Gasket groove wall thickness shall meet or exceed the thickness of the pipe barrel.
  - e. Fittings.  
Fitting shall be ductile iron conforming to ANSI /AWWA C153/A21.53, latest revision, with cement mortar lining and seal coat in accordance with ANSI/AWWA C104/A21.4, latest revision, and one mil thick petroleum exterior coating in accordance with ANSI/AWWA C104/ A21.4, latest revision, unless otherwise shown.
  - f. Affidavit of Compliance.  
The manufacturer shall furnish an affidavit that all materials delivered comply with the requirements of this standard and supplemental specification.
  - g. Couplings and Fittings.  
Couplings and fittings shall be furnished by the pipe manufacturer and shall accommodate the pipe for which they are to be used. They shall have the same minimum pressure rating as the pipe. Coupling method shall allow for expansion or contraction of each pipe section to be taken up at each end of the pipe. Couplings shall permit 5 degree deflection (2-1/2 degrees on each side of the joint) without any evidence of infiltration, exfiltration, or breaking.
  - h. Gaskets.  
PVC pipe joint gaskets shall meet the requirements of ASTM F477.
- 3) Water Service Pipe Material.
- a. Pipe shall conform to AWWA Specifications C901-08, Polyethylene Pressure Pipe and Tubing, and shall be marked with AWWA requirements and the following:

	<u>To Be Marked</u>	
<u>Polyethylene</u>	<u>On Pipe</u>	
Nominal Size	X	
AWWA C901		X
SDR 9		X
PE 3608	X	
Working Pressure - 160 psi	X	
Water Service Tubing	X	
National Sanitation Foundation (NSF 14)	X	

Pipe Color

Blue

- b. Unmarked pipe, without information noted above, will not be accepted. Brass or bronze compression type fittings shall be used. Flared connections will not be permitted. Continuous metallic tape over the pipe will be required. No gooseneck will be allotted nor will solvent weld joints be allowed. Corporation and curb stops will be required on all laterals. Minimum nominal size shall be 1 inch.
- 4) Corporation Stops.  
At each tapped point a connection to the pipe shall be made by installing a corporation stop. Corporation stops shall be Ford F1000-4-G AWWA/CC Ground Key Corporation Stop, or equal, as required for the type of pipe being tapped.
- 5) Curb Stops.  
Curb stop shall be 1 inch size or as shown on the Plans and shall be Ford C14-44G1 FIPxGJCTS, or equal, with a brass square head cored plug.
- 6) Tracing Wire & Marking Tape
  - a. Tracing wire shall be single strand #12 AWG, Vinyon - A THWN or THHN or gasoline and oil resistant II VW 600V or AWM. Tracing wire shall be continuous with all water mains, fire hydrants, post hydrants, sample stations.
  - b. Underground marking tape shall be installed over all water mains (18-inches below grade). The tape shall consist of inert polyethylene material intended for buried service. It shall have a minimum thickness of 5 mils and be a minimum of 2-inches wide. Tape for water mains shall be blue with black lettering reading "CAUTION-WATER MAIN BURIED BELOW".

4. INSTALLATION.

a) General.

- 1) Pipe, fittings, valves, hydrants and other accessories shall, unless otherwise directed, be unloaded at the point of delivery, hauled to and distributed at the site of the project by the Contractor. They shall at all times be handled with care to avoid damage. In loading and unloading, they shall be lifted by hoists or slid or rolled on skidways in such a manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench. Coated pipe shall be handled in such a manner that a minimum of damage to the coating will result. Damaged coating shall be repaired. Pipe shall be placed on the site of work parallel with the trench alignment and with bell ends facing the direction in which the work will proceed unless otherwise directed. The interior of all pipe, fittings, and other accessories shall be kept free from dirt

and foreign matter at all times. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing before installation.

- 2) Cutting pipe for inserting fittings, or closure pieces, shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise directed, pipe shall be laid with the bell ends facing the direction of laying. Wherever necessary to deflect the pipe from straight line, whether in the vertical or horizontal plane to avoid obstructions, the degree of deflection shall not exceed pipe manufacturer's recommendations. No pipe shall be laid in water or when the trench condition or the weather is unsuitable for such work. Installation shall be in accordance with manufacturer's instructions.
- 3) All pipe and fittings shall be carefully lowered into the trench piece by piece by means of derrick, ropes or other suitable tools or equipment in such a manner as to prevent damage to the pipe. Under no circumstances shall pipe or accessories be dropped into the trench. Before lowering and while suspended, ductile iron pipe shall be inspected for defects and rung with a light hammer to detect cracks. Any defective, damaged or unsound pipe shall be rejected. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench and it shall be kept clean by approved means during and after laying. Care shall be taken to prevent dirt from entering the joint space. At all times when pipe laying is not in progress, the open ends of the pipe shall be closed by approved means and no trench water shall be permitted to enter the pipe. The trench shall be backfilled and compacted as soon as possible after the pipe has been installed.

b) Ductile Iron Pipe.

Pipe shall be installed in accordance with ANSI/AWWA C600.

c) PVC Pipe.

Pipe shall be installed in accordance with AWWA C605. Excavation, bedding and backfill shall be as specified in Section 02221, and in accordance with ASTM D2321.

d) Water Service Connections.

- 1) Service lines shall be connected to 4 inch and larger mains with corporation stops. Connections to mains smaller than 4 inches shall be made with a rigid connection. Plugged tees or crosses for future connections shall be installed where shown on the Plans. A house service connection shall be provided to vacant lots and the exact location marked on the curb with a "W". The mark shall be made on the vertical face of the curb and shall be a minimum of 1/4 inch deep made with a branding iron. Where services are provided at locations without curb a 2" x 4" 30-inch long pressure treated flag stake painted white shall locate the end of the lateral. Minimum cover of 30 inches shall

be provided until a short transition to the service is stubbed out of the ground.

- 2) Water service laterals shall be installed to the property line of all lots along streets and rights-of-way in which watermain is constructed or to a distance of 5 feet from the building line for apartments, condominiums, or other uses besides subdivision lots unless shown otherwise.
- e) Hydrostatic Tests.  
The Contractor shall provide all necessary equipment and shall perform all work required in connection with the tests. Each section shall be tested by hydrostatic pressure of 150 pounds per square inch. Each section shall be slowly filled with water, care being taken to expel all air from the pipes. If necessary, the pipe shall be tapped at high points to vent the air. The required pressure as measured at the point of lowest elevation shall be applied for not less than 2 hours and all pipe, fittings, valves, hydrants and joints shall be carefully examined for defects. All defective joints shall be repaired or replaced.
- f) Damage to Water System.  
Damage to any part of the water system by the Contractor, or subcontractors, repaired by water utility forces shall be charged to the Contractor on the basis of time and material, plus 30 percent for overhead and administration.
- g) Protection of Water Supply Systems.  
See Section 02221, Paragraph 13 for protection of Water Supply Systems.

5. LEAKAGE TEST:

- a) A leakage test shall be conducted simultaneously with the pressure test in accordance with the latest edition of AWWA C600. The duration of the leakage test shall be 2 hours and during the test the main or section of main under test shall be subjected to a pressure of 150 psi based on the highest point in the line or section under test, and connected to the elevation of the test gauge. Leakage is defined as the quantity of water to be supplied into the newly laid pipe or any valved section thereof, necessary to maintain the specified leakage test pressure after the air has been expelled and the pipe has been filled with water at the test pressure. No pipe installation will be accepted until the leakage is less than the number of gallons per hour as determined by the formula.

$$L = \frac{S \times D \times (P)^{1/2}}{148,000}$$

L = allowable leakage in gallons per hour

S = the length of pipe tested in linear feet.

D = the nominal diameter of the pipe in inches

P = the average test pressure during the leakage test in pounds per square inch gauge.

- b) Should any test of pipe laid disclose leakage greater than the above specified, the Contractor shall at his own expense locate and repair the defective joints until

leakage is within the specified allowance. All visible leaks shall be repaired regardless of the allowance used for testing. Line shall be retested until Testing Allowance requirement is met. All testing shall be at the Contractor's expense.

6. CLEANING AND DISINFECTION OF NEW MAINS:

- a) All water mains must be cleaned, disinfected and the water passing through them must show by laboratory tests safe results before the system can be placed in service. Disinfection of all water lines, including disposal of heavily chlorinated water, shall be in accordance with AWWA C651. Approved methods for the accomplishment of these are as follows:
- b) Clean the interior of all pipe by brushing, swabbing or washing out all debris before laying. Stop up all branches and other openings with wooden plugs or heads until either capped or connected.
- c) Install sufficient number of sample points to give representative sampling on the newly installed lines. The sample points should be at least 18 inches higher than main and must discharge toward the ground.
- d) Flush the new pipe lines until the water runs clear at the end of all mains and laterals. A flushing velocity of not less than 2.5 feet per second shall be maintained. This shall be done after the pressure test and before disinfection. Each valved section of the newly laid pipe shall be flushed separately with potable water.
- e) Disinfect the pipe lines with chlorine. The preferable point of application of the chlorinating agent is at the beginning of the pipe line extension, or any valved section of it, and through a corporation cock inserted in the horizontal axis of the newly laid pipe. The "tablet method" of disinfection, which consists of placing calcium hypochlorite granules or tablets in the water main as it is being installed and then filling the main with potable water when installation is complete, is not allowed. Water from the existing distribution system shall be controlled to flow very slowly into the newly laid pipe during the application of the chlorine. Partially open all hydrants or valves on the newly laid line under treatment to prevent the building up of water pressure. Continue treatment until the water flowing from the hydrants at the far end of the main contains sufficient residual chlorine to develop a deep red color (50 parts per million) when orthotolidine reagent is added to a sample of water. This heavily chlorinated water shall be retained in the main for at least 24 hours, during which time all valves and hydrants shall be operated to ensure disinfection of the appurtenances. Stop the flow of water and chlorine by closing all openings. The chlorine residual after 24 hours shall be not less than 25 parts per million.
- f) Allow the treated water to remain in the pipe line for at least 24 hours, the treated water in all portions of the main shall have a residual of not less than 10 mg/l free chlorine. Re-chlorinate if required results are not obtained on all samples. After the applicable retention period, the heavily chlorinated water must not be disposed in a manner that will harm the environment. Neutralizing chemicals, such as Sulfur Dioxide, Sodium Bisulfite, Sodium Sulfite or Sodium Thiosulfate can be used to neutralize the chlorine residual remaining in the water to be wasted. Flush all mains and lines until all the heavily chlorinated water has been removed.
- g) Test water samples to make sure all chlorine has been flushed out or until the concentration of chlorine in the newly laid lines is no higher than that of a sample

taken on the supply line. After final flushing and before the water main is placed into service, water samples shall be collected from the main and tested for microbiological quality in accordance with the Georgia Rules for Safe Drinking Water, Chapter 391-3-5. The laboratory results must show the absence of coliform organisms in the water. Reflush and disinfect the lines, as necessary, until satisfactory bacteriological results are obtained.

- h) Chlorine required to produce 25 mg/l concentration in 100 feet (30.5 m) pipe by diameter.

Pipe Diameter (inches)	100% Chlorine		1% Chlorine Solution	
	(lbs)	(g)	(gal)	(L)
4	0.013	5.9	0.16	0.6
6	0.030	13.6	0.36	1.4
8	0.054	24.5	0.65	2.5
10	0.085	38.6	1.02	3.9
12	0.120	54.4	1.44	5.4
16	0.217	98.4	2.60	9.8

**Note:** 1% chlorine solution may be prepared with sodium hypochlorite (contains 5% to 15% available chlorine) or calcium hypochlorite (contains approximately 65% available chlorine by weight). To prepare 1% chlorine solution using calcium hypochlorite, add one (1) pound (454 grams) of calcium hypochlorite in approximately 8 gallons of water.

- i) Amounts and types of chemicals advised to be used for neutralizing various residual chlorine concentrations on 100,000 gallons of water.

Residual Chlorine Concentrations	Chemicals							
	Sulfur Dioxide (SO <sub>2</sub> )		Sodium Bisulfate (NaHSO <sub>3</sub> )		Sodium Sulfide (Na <sub>2</sub> SO <sub>3</sub> )		Sodium Thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> .5H <sub>2</sub> O)	
	lb	Kg	lb	Kg	lb	Kg	lb	Kg
mg/l								
1	0.8	0.36	1.2	0.54	1.4	0.64	1.2	0.54
2	1.7	0.77	2.5	1.13	2.9	1.32	2.4	1.09
10	8.3	3.76	12.5	5.67	14.6	6.62	12.0	5.44
50	41.7	18.91	62.6	28.39	73.0	33.11	60.0	27.22

## 7. IDENTIFICATION AND TRACER WIRE

- a) Mylar Tape

Mylar tape shall be installed 18 inches below the finished grade over the top of the water mains. The tape shall be 2 inches wide, of blue color and have imprinted on

the tape "Caution - Water Line Below." The tape shall be laid the entire length of the trench.

---

b) Tracer Wire

- 1) No. 12 AWG solid plastic-coated copper wire shall be installed on top of all water mains where non-metallic pipe is used and attached by means of securing the wire on top of the water main with a 12-inch long by 2-inch wide piece of duct tape. Attach the wire to the main every ten (10) feet.
- 2) Wire shall be bonded at splices with 3M DBY-6 Direct Bury Splice Kit at every connection
- 3) The wire shall be laid the entire length of the trench and shall be continuous. The Contractor shall demonstrate continuity in wire through the entire length of the project. At every valve manhole the wire shall be run through the pipe opening, up to the ring and cover, secured at the ring by means of grouting the ring to the top of the manhole. The wire shall continue in the same loop back to the opposite pipe opening, through it and continuing in one continuous loop along the main.
- 4) At every fire and post hydrant, the wire shall be run from the main to the hydrant tee, to the gate valve, wrapped around the gate valve once, then run to the bottom of the hydrant flange, up the hydrant, wrapped around it once at the finish grade, then back to the main in one continuous loop, and continuing along the water main.
- 5) At every water service lateral, the wire shall be run from the main and corporation stop to the curb stop and attached to the polyethylene pipe by a piece of duct tape wrapped around the wire and tubing. The wire shall be connected to the tracer wire at the main with a single strand from the water main to the curb stop or into the meter box.
- 6) At every sampling station, the wire shall be run from the main service connection up to the bottom inside of the sampling station, then back in one continuous loop to the water main, then continuing with the utility along the water main.
- 7) Tracing wire shall be a single strand installed from the main to all Utility Marking Post line markers with sufficient length at the marker to be wrapped around the marker several times. The system owner will test all tracer wire prior to acceptance.

8. CLEANUP:

Upon completion of the installation of water lines and appurtenances, all debris and surplus materials resulting from the work shall be removed.

SECTION 02720  
SANITARY SEWERS

1. SCOPE:  
Under this heading shall be included the complete construction of sewers.
  
2. LOCATION AND GRADE:
  - a) The line and grade of the sewer and the position of all manholes and other appurtenances will be according to the Plans. The grade line as given on the profile or mentioned in these Specifications means the invert or bottom of the inside of the pipe, and the price for trenching shall include the trench for the depth below this line necessary to lay the sewer to this grade, but measurements for payment will be made only to the grade line.
  - b) All necessary lines and grades will be laid out by the Contractor from the control lines and benchmarks furnished by the Owner.
  
3. PROTECTION OF OTHER UTILITIES AND STRUCTURES:
  - a) Damage to Existing Utility Lines.
    - 1) Any damage done to existing utility lines, services, poles and structures of every nature shall be repaired or replaced by the Contractor at his own expense. The approximate positions of certain known underground lines are shown on the Plans for information. Existing small lines may not be shown. The Contractor shall locate these and other possible unknown utility lines and shall excavate and expose all existing underground lines in advance of trenching operations.
    - 2) At locations where the sewer is to be constructed in roadways, the Contractor shall take all precautions, and comply with all requirements, as may be necessary to protect the improvements, including installation and maintenance of lights and barricades for protection of traffic.
  - b) Protection of Water Supply Systems.  
See Section 02221 for protection of water supply pipes.
  
4. PIPE MATERIALS
  - a) Unless otherwise specified or shown on the Drawings, the following types of pipe shall be used:
    - 1) PVC Sewer Pipe (Solid Wall)
      - a. PVC pipe and fittings shall meet the requirements of ASTM D3034 for pipe 15" and smaller, latest revision (SDR 26). Pipe 18" and larger shall conform to ASTM F679. Pipe and fittings shall be homogeneous throughout and free from cracks, holes, foreign inclusions, or other injurious defects. The pipe shall be as uniform as commercially practicable in color, opacity, density and other physical properties. Pipe shall be subject to inspection by the

Owner's representative. Pipe which does not meet the requirements of this Section shall be so marked by the Owner's representative and the Contractor shall remove it from the job site upon notice being received of its rejection.

- b. Joints  
Joints for PVC pipe shall be integral wall bell and spigot rubber gasketed joints. Joints shall conform to ASTM D3212 and the gasket to ASTM F-477.
- c. Certification  
Each length of pipe shall be marked with the following information: Manufacturer, Size, PVC Cell Classification, Type PSM, SDR, PVC Gravity Sewer Pipe, ASTM D3034 and Code Number.
- d. At the time of shipment, the manufacturer shall submit 3 copies of written certification and test results to the Engineer that the pipe was manufactured and tested in accordance with the above specifications.

2) Ductile Iron Pipe

- a. Material  
Ductile iron pipe shall be manufactured in accordance with ANSI A21.51, latest revision. Ductile iron pipe shall be of the thickness according to ANSI A21.50, latest revision, for Laying Condition Type 2.
- b. Joints  
Joints shall conform to ANSI/AWWA C111/A21.11, push-on-type as described in latest revision.
- c. Fittings
  - 1. Fittings shall conform to ANSI/AWWA C111 A21.11, latest revision, and shall be mechanical joint type.
  - 2. Mechanical Fittings shall conform to ANSI/AWWA C153/A21.53, latest revision. Bolts shall conform to ANSI B18.2.1, latest revision. Nuts shall conform to ANSI B-18.2.2, latest revision. Bolts and nuts shall conform to ANSI B1.1.
  - 3. Flanged Fittings shall conform to ANSI /AWWA C110/A21.10, latest revision. The ANSI/AWWA C110/A21.10 fitting flanges shall have facing and drilling which match ANSI/AWWA C115/A21.15 threaded-on flanges which also match ANSI B16.1 Class 125 flanges except where Pressure Class 250 is noted.

3) Lining

Lining for the interior of ductile iron pipe and fittings shall be 40 mils nominal dry film thickness of ceramic epoxy, conforming to ASTM E-96-66, ASTM B-117, ASTM 6-95, ASTM D-714-87, latest revision. Ceramic

epoxy shall be Protecto 401, or equal. Lining application, inspection, certification, handling and surface preparation of the area to receive the protective coating shall be in accordance with the manufacturer's specifications and requirements.

4) Exterior Coating

Exterior coating shall be an approved bituminous coating 1 mil thick in accordance with ANSI/AWWA C153/A21.51, latest revision.

5. EXCAVATION, TRENCHING AND BACKFILL FOR UTILITY SYSTEMS:

Shall be as specified in Section 02221, "Excavation, Trenching and Backfill for Utility Systems."

6. LAYING PRE-FABRICATED JOINT PIPE:

- a) All sewer pipe shall be laid upgrade; spigots shall point downgrade. The pipe shall be laid in the trench so that after the sewer is completed, the interior surface shall conform on the bottom accurately to the grades and alignment shown on the Plans.
- b) No joints shall be made where surfaces of pipe and bell to be joined have been soiled by earth in handling, until such soiled surfaces are thoroughly cleaned by brushing and wiping so that all traces of the earth are removed. The interior of the pipe shall be carefully made free from all dirt and superfluous material of every description as the work proceeds.
- c) All pipes shall be carefully examined for cracks and other defects; no pipe shall be laid which is found defective. If pipe is found to be defective after being laid, it shall be removed and replaced with sound pipe, at no additional expense to the Owner.
- d) The surfaces of pipe to be joined, as well as the gaskets, shall be cleaned and lubricated with a vegetable soap or other lubricating agents recommended by the pipe manufacturer. Lubricating agent shall not be injurious and detrimental to the gaskets. Gaskets shall be checked for proper position prior to installation of the succeeding length of pipe.
- e) No pipe shall be laid on blocking of any kind except at manholes and other structures where temporary blocking may facilitate installation of the pipe. After installation of the pipe, blocking shall be carefully removed and all voids left by the blocking shall be filled with selected material and tamped.
- f) When the work of laying pipe is suspended, for the night and at other times, the end of the sewer shall be closed with a tight cover. The Contractor will be held responsible for keeping the sewer free from obstructions.

7. LAYING DUCTILE IRON PIPE:

- a) No pipe shall be laid which is known to be defective. The pipe shall be thoroughly cleaned before being laid and shall be kept clean until accepted in the completed work.

- b) Pipe shall be laid to conform accurately to the lines and grades shown on the drawings.
- c) When pipe is laid in trenches, care shall be taken to give the pipe a solid bearing throughout its entire length, and in refilling the trenches the earth filled into the bottom of the trench under and up to a cover of 1 foot over the top of the pipe, shall be of selected material and shall be carefully tamped with proper tools for the purpose. Refer to Section 02221.

8. LAYING PVC PIPE:

- a) No pipe shall be laid which is known to be defective. All pipe shall be thoroughly cleaned before being laid and shall be kept clean until accepted in the completed work.
- b) Pipe shall be laid to conform accurately to the lines and grades shown on the drawings.
- c) PVC sewer pipe shall be installed in accordance with ASTM D2321 and Section 02221. Bedding shall be Class I, II or III.

9. MANHOLES:

a) General.

- 1) Manholes shall be constructed at such points as designated on the plans. In all cases the channel shall be smooth and properly rounded. Special care shall be exercised in laying the channel and adjacent pipes to grade. The connection of the sewer with the wall and channel of the manholes shall be tight and smooth. Pipe connections shall be made to manholes using water stops, standard O-ring joints, special manhole couplings, or shall be made in accordance with the manufacturer's recommendations.
- 2) The top of manholes outside of roads, streets and highways shall be built to grades 2 inches above ground surface, unless otherwise shown. Manholes in roads, streets and highways shall be built to grades shown on the plans, to match pavement elevations.
- 3) When directed by the Owner's representative, the manhole shall be placed on 9 inches of coarse granular material to insure adequate bearing.

b) Precast Concrete Manholes.

- 1) Precast Concrete manholes shall be constructed of reinforced Class "A" Concrete. Walls shall be not thinner than 5 inches, or 1/12 of the inside diameter, whichever is greater. Precast manholes shall meet all requirement of ASTM C478, "Specification for Precast Reinforced Concrete Manhole Sections". Horizontal alignment changes greater than 90 degrees at a single manhole shall not be allowed. A wide sweep invert shall be required for all manholes where the horizontal alignment change is 90 degrees.
- 2) Rings shall be custom made with openings to meet the necessary pipe alignment conditions and invert elevations. Shop drawings shall be

submitted consisting of manufacturer's standard details of various sections, before placing order for manholes. Joints and gaskets shall conform to the applicable provisions of ASTM C443, "Joints for Circular Concrete Sewer and Culvert Pipe using Rubber Gasket" or Ram-Nek Premoulded Plastic Joint Sealer. The crushed stone shall extend not less than 6 inches outside the walls of the manhole and under the entire length of pipe within the excavation for the manhole.

c) Manhole Steps.

Manhole steps shall be cast into the manhole riser and cone sections by the manufacturer. Steps shall be 12 inches wide, 5 inch projection, arranged in a single row 16 inches on center. Steps shall be of a tough copolymer polypropylene that encapsulates a 1/2-inch, Grade 60, steel reinforcing rod and shall be equal to step PS1-PF as manufactured by A.M. Industries.

d) Manhole Castings and Covers.

1) Provide covers with the inscription "SANITARY SEWER" cast into the cover in lettering at least 2 inches high. The manhole frame and cover shall be made of Class 400 ductile iron and conform to ASTM A536. The frame and cover shall also meet AASHTO – H20 loading requirement and federal specification RRF-631-C. The frame and cover shall have a clear opening of 24-inches and be 4-inches in height.

2) Watertight manhole rings and covers are to be used whenever the manhole top may be flooded by high water (All manholes located within the 100 year flood plain or from street run-off). USF 227 AS-ORS for water tight, or AS covers with PARSON MANHOLE INSERT, or equal. Manhole cover shall have non-penetration pick-hole without vent hole or other penetration.

e) Inverts

The completed channel (invert) cross-section shall be U-shaped and constructed to the crown (top) of the pipes. The bench shall provide good footage for workmen and a surface to place minor tools. A bench slope shall be at least 1/2"/foot and shall not exceed 1"/foot.

10. ADAPTORS:

Prefabricated flexible couplings or adaptors shall be used for connecting pipe of dissimilar materials.

11. MYLAR DETECTABLE WARNING TAPE

Mylar detectable warning tape shall be installed 18-inches below finished grade in the trench above all sanitary sewers. The tape shall be 2 inches wide, of green color and have imprinted on the tape "Caution-Sanitary Sewer Below". The tape shall be laid the entire length of the trench.

12. SERVICE CONNECTIONS:

Service pipe shall be ductile iron pipe or PVC Sewer Pipe conforming to ASTM D3034,

SDR 26. Mylar detectable tape shall be installed where PVC pipe is used.

13. TESTING AND CLEANING:

- a) Before acceptance of the sewer lines, they shall be tested and cleaned. Where obstruction is met, the Contractor shall be required to clean the sewers by means of rods or swabs or other instruments. The pipe line shall be straight and show a uniform grade between manholes.
- b) The Contractor shall notify the Owner's representative when the sewer lines have been cleaned and are ready for inspection. The Owner's representative in cooperation with the Contractor and the Owner will agree upon a date when all parties will be present and make the inspection and perform the tests specified hereinafter.

14. INSPECTION:

All sewer pipes, manholes and appurtenances shall be inspected by the Owner's representative and the Contractor. Inspection shall include lamping each sewer segment from manhole to manhole. All defects will be noted and a list thereof transmitted to the Contractor. The Contractor may be required to televise any lines which fail any test.

15. TEST FOR DEFLECTION:

- a) When PVC Sewer Pipe is used, the Contractor will be required to perform a deflection test. The deflection may be checked by one of two techniques. One of these is through the use of a specially designed deflectometer which when pulled through a sewer section automatically measures and records at frequent intervals the pipe's vertical and horizontal diameters.
- b) The other technique is to use a "go, no-go" mandrel which is sized to such dimension that it will not "go" when encountering a deflection greater than 5 percent. This type of mandrel, as well as a deflectometer, must be of such design as to minimize the possibility of its being hung up in the pipe by silt or other residues.
- c) Test for deflection shall be conducted no less than 30 days after installation of the pipe.
- d) If deflection is found to be greater than five percent of the inside pipe diameter, the Contractor shall repair or replace that portion of pipe at his expense. Another deflection test will be conducted 30 days after repaired or replacement.

16. LEAKAGE TESTING: GRAVITY SEWER MAINS AND LATERALS:

- a) All new public and private gravity sewers and laterals shall be pressure tested a minimum of 30 days following final backfill in accordance with the Time-Pressure Drop Method specified in ASTM F1417 - Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air, latest revision.
- b) The pressure drop shall be measured for the following time period, depending on the diameter of the sewer pipe being tested (based on a maximum test section length of 400 feet between manholes):

6 inch	6 minutes
8 inch:	6 minutes
10 inch	8 minutes

12 inch	12 minutes
15 inch	18 minutes
18 inch	26 minutes

- c) The pressure drop over the time period shall not exceed 0.5 psi. The testing shall be performed by the Contractor, and a representative of the sewer utility shall be present to observe the test. The Contractor shall be responsible for all costs associated with performing the leakage testing, locating leaks, repairing leaks, and conducting additional leakage testing as necessary until the system passes the pressure test. No gravity sewers or laterals will be accepted by the sewer utility without a passing pressure test.

17. TESTING MANHOLES:

Each manhole shall be visually inspected for leaks. Any visible leakage into the manhole, around the casting, or from laterals will be unacceptable. All joints shall be tight and any visible leakage in the joints shall be repaired at the Contractor's expense.

18. RECORD DRAWINGS

The Contractor shall provide "Record Drawings" seventy two (72) hours before final inspection will be made. The Contractor shall keep on the work site one (1) set of clean Drawings on which at the end of every day the necessary information will be marked by the Contractor's superintendent. All deviations from the Drawings shall be stationed and clearly marked. Drawing shall provide sewer tee location stationed from downstream manhole. Where construction deviates from the Drawings the sewer lateral shall be stationed from a minimum of two permanent markers.

**ATTACHMENT A**

**DRUG - FREE WORKPLACE CERTIFICATION**

THE UNDERSIGNED CERTIFIES THAT THE PROVISIONS OF CODE SECTIONS 50-24-1 THROUGH 50-24-6 OF THE OFFICIAL CODE TO GEORGIA ANNOTATED, RELATED TO THE **\*\*DRUG-FREE WORKPLACE\*\***, HAVE BEEN COMPLIED WITH IN FULL. THE UNDERSIGNED FURTHER CERTIFIES THAT:

1. A Drug-Free Workplace will be provided for the employees during the performance of the contract; and
2. Each sub-contractor under the direction of the Contractor shall secure the following written certification:

\_\_\_\_\_ (CONTRACTOR)

certifies to Chatham County that a Drug-Free Workplace will be provided for the employees during the performance of this contract known as procurement **HAMPTON PLACE DRAINAGE IMPROVEMENTS** (PROJECT) pursuant to paragraph (7) of subsection (B) of Code Section 50-24-3. Also, the undersigned further certifies that he/she will not engage in the unlawful manufacture, sale, distribution, possession, or use of a controlled substance or marijuana during the performance of the contract.

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
DATE

\_\_\_\_\_  
NOTARY

\_\_\_\_\_  
DATE

**ATTACHMENT B**

**PROMISE OF NON-DISCRIMINATION STATEMENT**

Know All Men By These Presence, that I (We), \_\_\_\_\_  
Name

\_\_\_\_\_  
Title Name of Bidder

(herein after Company) in consideration of the privilege to bid/or propose on the following Chatham County project procurement **HAMPTON PLACE DRAINAGE IMPROVEMENTS** hereby consent, covenant and agree as follows:

- (1) No person shall be excluded from participation in, denied the benefit of or otherwise discriminated against on the basis of race, color, national origin or gender in connection with the bid submitted to Chatham County or the performance of the contract resulting therefrom;
- (2) That it is and shall be the policy of this Company to provide equal opportunity to all business persons seeking to contract or otherwise interested with the Company, including those companies owned and controlled by racial minorities, and women;
- (3) In connection herewith, I (We) acknowledge and warrant that this Company has been made aware of, understands and agrees to take affirmative action to provide minority and women owned companies with the maximum practicable opportunities to do business with this Company on this contract;
- (4) That the promises of non-discrimination as made and set forth herein shall be continuing throughout the duration of this contract with Chatham County;
- (5) That the promises of non-discrimination as made and set forth herein shall be and are hereby deemed to be made a part of and incorporated by reference in the contract which this Company may be awarded;
- (6) That the failure of this Company to satisfactorily discharge any of the promises of non-discrimination as made and set forth above may constitute a material breach of contract entitling the County to declare the contract in default and to exercise appropriate remedies including but not limited to termination of the contract.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## ATTACHMENT C

### DISCLOSURE OF RESPONSIBILITY STATEMENT

Failure to complete and return this information will result in your bid/offer/proposal being disqualified from further competition as non-responsive.

1. List any convictions of any person, subsidiary, or affiliate of the company, arising out of obtaining, or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract.

---

2. List any indictments or convictions of any person, subsidiary, or affiliate of this company for offenses such as embezzlement, theft, fraudulent schemes, etc. or any other offenses indicating a lack of business integrity or business honesty which affects the responsibility of the contractor.

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3. List any convictions or civil judgments under states or federal antitrust statutes.

---

4. List any violations of contract provisions such as knowingly (without good cause) to perform, or unsatisfactory performance, in accordance with the specifications of a contract.

---

5. List any prior suspensions or debarments by any governmental agency.

---

6. List any contracts not completed on time.

---

7. List any penalties imposed for time delays and/or quality of materials and workmanship.

---

8. List any documented violations of federal or any state labor laws, regulations, or standards, occupational safety and health rules.

\_\_\_\_\_  
I, \_\_\_\_\_, as \_\_\_\_\_  
Name of individual Title & Authority

of \_\_\_\_\_, declare under oath that

Company Name \_\_\_\_\_

the above statements, including any supplemental responses attached hereto, are true.

\_\_\_\_\_  
Signature

State of \_\_\_\_\_

County of \_\_\_\_\_

Subscribed and sworn to before me on this \_\_\_\_\_ day of \_\_\_\_\_

20\_\_ by \_\_\_\_\_ representing him/herself to be

\_\_\_\_\_ of the company named herein.

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

My Commission expires:

\_\_\_\_\_

Resident State: \_\_\_\_\_

DPC Form #45

**ATTACHMENT D**

**CONTRACTOR AFFIDAVIT under O.C.G.A. § 13-10-91(b)(1)**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of CHATHAM COUNTY has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

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

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

\_\_\_\_\_  
Name of Project

\_\_\_\_\_  
Name of Public Employer

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

Executed on \_\_\_\_\_, \_\_\_\_, 201\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

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

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

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

**SUBCONTRACTOR AFFIDAVIT under O.C.G.A. § 13-10-91(b)(3)**

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with \_\_\_\_\_ (name of contractor) on behalf of CHATHAM COUNTY has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91 (b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five (5) business days of receipt. If the undersigned subcontractor receives notice of receipt of an affidavit from any sub-subcontractor that has contracted with a sub-subcontractor to forward, within five (5) business days of receipt, a copy of such notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

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

\_\_\_\_\_  
Name of Subcontractor

\_\_\_\_\_  
Name of Project

\_\_\_\_\_  
Name of Public Employer

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

Executed on \_\_\_\_\_, \_\_\_\_, 201\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

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

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
NOTARY PUBLIC  
My Commission Expires:

**ATTACHMENT E**

**CHATHAM COUNTY, GEORGIA**

**BIDDER'S CERTIFICATION REGARDING DEBARMENT, SUSPENSION,  
INELIGIBILITY AND VOLUNTARY EXCLUSION**

**The undersigned certifies, by submission of this proposal or acceptance of this contract, that neither Contractor nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntary excluded from participation in this transaction by any Federal department or agency, State of Georgia, City of Savannah, Board of Education or local municipality. Bidder agrees that by submitting this proposal that Bidder will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts and subcontracts. Where the Bidder or any lower tier participant is unable to certify to this statement, that participant shall attach an explanation to this document.**

**Bidder must verify Sub-Tier Contractors and Suppliers are not debarred, suspended, ineligible, pending County litigation or pending actions from any of the above government entities.**

**Certification - the above information is true and complete to the best of my knowledge and belief.**

---

(Printed or typed Name of Signatory)

---

(Signature)

---

(Date)

**NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001**

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**END OF DOCUMENT Mod. CC P & C 6/2005**

**ATTACHMENT F**

**Chatham County  
Minority and Women Business Enterprise Program  
M/WBE Participation Report**

Name of Bidder: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Bid No: \_\_\_\_\_

M/WBE Firm	Type of Work	Contact Person/ Phone #	City, State	%	MBE or WBE

MBE Total \_\_\_\_\_

WBE Total \_\_\_\_\_%

M/WBE Combined \_\_\_\_\_%

The undersigned should enter into a formal agreement with M/WBE Contractor identified herein for work listed in this schedule conditioned upon execution of contract with the Chatham County Board of Commissioners.

Signature \_\_\_\_\_ Print \_\_\_\_\_

Phone ( ) \_\_\_\_\_

Fax ( ) \_\_\_\_\_

ATTACHMENT G

*Systematic Alien Verification for Entitlements (SAVE)  
Affidavit Verifying Status for Chatham County Benefit Application*

By executing this affidavit under oath, as an applicant for a Chatham County, Georgia Business License or Occupation Tax Certificate, Alcohol License, Taxi Permit, Contract or other public benefit as reference in O.C.G.A. Section 50-36-1, I am stating the following with respect to my bid for a Chatham County contract for \_\_\_\_\_. [Name of natural person applying on behalf of individual, business, corporation, partnership, or other private entity]

1.) \_\_\_\_\_ I am a citizen of the United States.

**OR**

2.) \_\_\_\_\_ I am a legal permanent resident 18 years of age or older.

**OR**

3.) \_\_\_\_\_ I am an otherwise qualified alien (8 § USC 1641) or non-immigrant under the Federal Immigration and Nationality Act (8 USC 1101 et seq.) 18 years of age or older and lawfully present in the United States.\*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of Code Section 16-10-20 of the Official Code of Georgia.

Signature of Applicant:

Date

\_\_\_\_\_  
Printed Name:

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE  
\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

\* \_\_\_\_\_  
Alien Registration number for non-citizens.

Notary Public  
My Commission Expires:

**ATTACHMENT H**

**Chatham Apprentice Program Documentation**

(must be submitted to Arneja Riley County MWBE Coordinator with 1<sup>st</sup> Pay Request)

Contractor \_\_\_\_\_

Name of Project \_\_\_\_\_

Contract No. \_\_\_\_\_

1) Contractor has contact CAP office to determine availability of specific labor classes which may be utilized for the project:

Date of Inquiry

# of Available Participants

\_\_\_\_\_

\_\_\_\_\_

2) Anticipated number of CAP students that will be hired and related trade category:

# \_\_\_\_\_

Trade Category \_\_\_\_\_

# \_\_\_\_\_

Trade Category \_\_\_\_\_

# \_\_\_\_\_

Trade Category \_\_\_\_\_

3) If CAP students are not anticipated to be hired for this project, the contractor must briefly explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Any questions regarding the Construction Apprentice Program and available participant labor should be directed to Daniel Dodd-Ramirez at (912) 232-6747.

**REFERENCE FORM**

**REFERENCES - \$499,999 or less:** On July 25, 2003 the Board of Commissioners directed that all construction projects with a bid of \$499,999 or less, for bidders to be responsive each must provide information on the most recent three (3) projects with similar scope of work as well as other information to determine experience and qualifications as follows. If the contractor has performed any work for the Chatham County Board of Commissioners within the last five (5) years, at least one (1) of the three (3) owner references must be from the appropriate party within the Chatham County Government

a. Project Name: \_\_\_\_\_  
Location: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Address: \_\_\_\_\_  
City and State: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone & Fax: \_\_\_\_\_  
\*Architect or Engineer: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Phone & Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

- b. The awarded bid amount and project start date. \_\_\_\_\_
- c. Final cost of project and completion date.
- d. Number of change orders. \_\_\_\_\_
- e. Contracted project completion in days. \_\_\_\_\_
- f. Project completed on time. Yes \_\_\_\_\_ No \_\_\_\_\_ Days exceeded \_\_\_\_\_
- g. List previous contracts your company performed for Chatham County by Project Title, date and awarded/final cost.
- h. Has contractor ever failed to complete a project? \_\_\_\_\_ If so, provide explanation.
- i. Have any projects ever performed by contractor been the subject of a claim or lawsuit by or against the contractor? \_\_\_\_\_ If yes, please identify the nature of such claim or lawsuit, the court in which the case was filed and the details of its resolution.

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## CHECKLIST FOR SUBMITTING BID

**Sign below and submit this sheet with Bid**

**NOTE: All of the following items must be submitted with your Bid to be considered "responsive".**

1. ACKNOWLEDGMENT OF ANY/ALL ADDENDUMS (Page 3 of ITB).
2. **ORIGINAL SURETY BOND (5% OF BID) ALONG WITH SURETY REQUIREMENTS SHEETS FILLED OUT.**
3. **BID SHEET COMPLETELY FILLED OUT AND SIGNED.**
4. **"LIST OF SUBCONTRACTORS" SHEET FILLED OUT WITH ALL SUBCONTRACTORS AND SUPPLIERS.**
5. **"% TO MBE SUBCONTRACTORS/SUPPLIERS' SHEET COMPLETELY FILLED OUT SHOWING \$ AMOUNT AS WELL AS % OF PROJECT THAT IS PROJECTED TO GO TO MBE/WBE SUBCONTRACTORS/SUPPLIERS.**
6. SECTION 2.31 OF ITB - **REFERENCES:** Read this section and submit the correct number of "References" (based on total dollar amount of project) Note: Supply ALL the information that is requested for each Reference. *NOTE: Forms for Reference Information are attached to this Bid Package.*
7. **ALL FIRMS REQUESTING TO DO BUSINESS WITH CHATHAM COUNTY MUST REGISTER ON-LINE AT [HTTP://PURCHASING.CHATHAMCOUNTY.ORG](http://PURCHASING.CHATHAMCOUNTY.ORG).**
8. **COMPLETE AND SUBMIT ALL ATTACHMENTS TO THE ITB (Attachments A thru H). D-2 IS TO BE FILLED OUT FOR EACH SUBCONTRACTOR.**

\_\_\_\_\_  
NAME/TITLE

\_\_\_\_\_  
COMPANY NAME

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
CITY/STATE/ZIP

\_\_\_\_\_  
PHONE NUMBER

\_\_\_\_\_  
FAX NUMBER

LEGAL NOTICE

CC NO. 165892

Invitation to Bid

Sealed Bids will be received until **2:00 P.M.** on **AUGUST 14 , 2014** and publicly opened in **Chatham County Purchasing & Contracting Department, at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia 31406**, for: **BID NO : 14-0085-4 HAMPTON PLACE DRAINAGE IMPROVEMENTS**

**PRE-BID CONFERENCE:** Conference will be held at **The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia on JULY 31, 2014, at 2:00 PM.** You are encouraged to attend.

Plans are available and **must be purchased from Clayton Digital Reprographics (CDR) located at 1101 Chatham Parkway, Suite A2, Garden City, Georgia, 31408.** CDR phone: 912-447-5445, fax 912-233-7020, e-mail: [cdrwest@cdrepro.com](mailto:cdrwest@cdrepro.com)

The Bid Package can be downloaded and printed from the County website <http://purchasing.chathamcounty.org> Also, all firms requesting to do business with Chatham County must also register on-line at website: <http://purchasing.chathamcounty.org>

For any additional questions regarding this bid , please contact Robert Marshall, Senior Procurement Specialist, at 912-790-1622.or [rmarshall@chathamcounty.org](mailto:rmarshall@chathamcounty.org)

Bid Bond is required at the time of bid. (5% of total bid)  
Payment and Performance Bonds (100% of bid) will be required for this project at the time of contract award.

CHATHAM COUNTY HAS THE AUTHORITY TO REJECT ALL BIDS AND WAIVE MINOR FORMALITIES.

"CHATHAM COUNTY IS AN EQUAL OPPORTUNITY EMPLOYER, M/F/H, ALL BIDDERS ARE TO BE EQUAL OPPORTUNITY EMPLOYERS"



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MARGARET H. JOYNER, PURCHASING AGENT

SAVANNAH NEWS/PRESS INSERT: Jul.15, Jul. 29, 2014

Please send affidavit to:

Chatham County Purchasing & Contracting Department  
1117 Eisenhower Drive, Suite C  
Savannah, Georgia 31406  
(912) 790-1622