

INVITATION TO BID  
PROPOSAL

**BID NO. 11-10-5-4**

**SUGAR TREE COURT EAST AND WEST STREET DRAINAGE IMPROVEMENTS**

**PREBID CONF: 2:00PM, JUNE 1, 2011**

**BID OPENING: 2:00PM, JUNE 15, 2011**

THE COMMISSIONERS OF CHATHAM COUNTY, GEORGIA

PETE LIAKAKIS, CHAIRMAN

COMMISSIONER HELEN J. STONE	COMMISSIONER HARRIS ODELL JR.
COMMISSIONER JAMES J. HOLMES	COMMISSIONER DAVID M. GELLATLY
COMMISSIONER PATRICK O. SHAY	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.**

  X   GENERAL INFORMATION AND INSTRUCTIONS TO BID WITH ATTACHMENTS

  X   SURETY REQUIREMENTS (A Bid Bond of 5% with this ITB)

  X   PROPOSAL

   PLANS/DRAWINGS - Plans and specifications 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 Roger Oliver at (912) 352-3880, fax (912) 352-3881 or email: [cdrsouth@cdrepro.com](mailto:cdrsouth@cdrepro.com).

  X   BID SCHEDULE

   PERFORMANCE BOND - UPON AWARD OF CONTRACT

   PAYMENT BOND - UPON AWARD OF CONTRACT

   CONTRACT

  X   LEGAL NOTICE

  X   AFFIDAVIT OF PAYMENT

  X   ATTACHMENTS: A. DRUG FREE WORKPLACE; B. NONDISCRIMINATION STATEMENT; C. DISCLOSURE OF RESPONSIBILITY STATEMENT; D. IMMIGRATION & SECURITY FORM; E. CONTRACTOR/SUBCONTRACTOR AFFIDAVIT & AGREEMENT. F. DEBARMENT CERTIFICATION

   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 female owned businesses. In order to accurately document participation, businesses submitting bids or proposals are encouraged to report ownership status. A minority or female business is defined as a business with 51% or greater minority of female ownership. Please check ownership status as applicable:

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

Native American or Alaskan Indian \_\_\_\_\_ Female \_\_\_\_\_

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 NUMBERS \_\_\_\_\_

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  
POST OFFICE BOX 15180  
SAVANNAH, GEORGIA 31416  
(912) 790-1622

Date: May 12, 2011

BID NO. 11-10-5-4

**GENERAL INFORMATION FOR INVITATION FOR BID/PROPOSAL**

This is an invitation to submit a bid or proposal to supply Chatham County with construction, equipment, supplies and/or services as indicated herein. Sealed bids or proposals will be received at the Office of the Purchasing Agent, **at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia, up to 2:00PM, JUNE 15, 2011** at which time they will be opened and publicly read. **The County reserves the right to reject all bids or proposals for any bid or proposal that is non-responsive or not responsible.**

Instructions for preparation and submission of a bid or proposal are contained in this Invitation For Bid/Proposal package. Please note that specific forms for submission of a bid/proposal are required. Bids must be typed or printed in ink. If you do not submit a bid/proposal, return the signed bid invitation sheet and state the reason; otherwise, your name may be removed from our bidders list.

A **pre-bid conference** has been scheduled to be conducted **at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia, at 2:00PM, JUNE 1, 2011** to discuss the specifications and resolve any questions and/or misunderstanding that may arise. **You are encouraged to attend this conference.**

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 Special Purpose Local Option Sales Tax (SPLOST) Project. See paragraph 2.22 for MBE/WBE participation goals.**

## INSTRUCTIONS TO BIDDERS/PROPOSERS

1.1 **Purpose:** The purpose of this document is to provide general and specific information for use in submitting a bid or proposal to supply Chatham County with equipment, supplies, and/or services as described herein. All bids/proposals 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 Bid Proposals:** All bid proposals 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 proposal. **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 Bid Proposals:** All bid proposals shall be:

- a. **Submitted in sealed opaque envelopes, 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: Purchasing Agent, Post Office Box 15180, Savannah, Georgia 31416.**
  2. **Hand Delivery: Purchasing Agent, Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia.**

**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 **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.
- 1.9 **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.
- 1.10 **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.
- 1.11 **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.
- 1.12 **\*Local Preference:** On 27 March, 1998 the Board of Commissioners adopted a Local Vendor Preference Ordinance. This Ordinance does not apply to construction contracts. However, contractors are encouraged to apply the same method when awarding bids to local and local M/WBE businesses when ever possible in order to promote growth in Chatham County's economy. **NOTE: Local Preference does not apply to Public Works Construction contracts.**
- 1.13 **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. Also, any contractor or subcontractor that has pending litigation with the County will not be considered for contract award.

**\*\* 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.

- 1.14 **Performance Evaluation:** On April 11, 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.

- 1.15 **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 April 8, 1994.

- 1.16 **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 July 1, 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).

**A copy of your licence must be a part of your bid documents at the time of the bid opening.**

- 1.17 **Immigration:** On July 1, 2008 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.

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.

### 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 mention 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 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:** Unless otherwise specified by the County, the bidder shall unconditionally guarantee the materials and workmanship 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 (912) 201-4300 for additional information.

- 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) 652-7905 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 or contractor 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 County's Rights Concerning Award:

The County reserves the right, and sole and complete discretion to waive technicalities and informalities. The County 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 County 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 sufficient cash flow to undertake the project as evidenced by a Current Ratio of 1.0 or higher;
- (d) 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
- (e) 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.
- (f) Whether the bidder has made a **Good Faith Effort** to meet local participation goals as set forth herein in Paragraph 2.22.

2.22 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/FBE 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% MBE/ WBE combined.**

- c. A Minority/Female Business Enterprise (M/FBE) is a business concern that is at least 51% owned by one or more minority/female individuals (2) and whose daily business operations are managed and directed by one or more of the minority/female owners.

- 2.23 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 all questions regarding M/WBE participation and Good Faith Effort only**, contact : Arneja Riley, Chatham County M/WBE Coordinator, 124 Bull Street, Suite 310 Savannah, Ga. 31401. Ph 912-652-7860; fax 912-652-7849; e-mail [alriely@chathamcounty.org](mailto:alriely@chathamcounty.org) or <http://purchasing.chathamcounty.org>

- 2.24 **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 IFBs will be read allowed at public bid openings. After Bid Tabulations, the IFB 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.

**2.25 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.

**2.26 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 th three (3) years following completion. Again, this is contract specific to the County contracts only.

**2.27 EXCEPTIONS-**All proceedings, records, contracts and other public records relating to procurement transactions shall be open to the inspection of any citizen, or any interested person, firm or corporation, in accordance with the Georgia Open Records Act except as provided below:

- a. Cost estimates relating to a proposed procurement transaction prepared by or for a public body shall not be open to public inspection.
- b. Any competitive sealed bidding bidder, upon request, shall be afforded the opportunity to inspect bid records within a reasonable time after the opening of all bids but prior to award, except in the event that the County decides not to accept any of the bids and to rebid the contract. Otherwise, bid records shall be open to public inspection only after award of the contract. Any competitive negotiation offeror, upon request, shall be afforded the opportunity to inspect proposal records within a reasonable time after the evaluation and negotiations of proposals are completed but prior to award except in the event that the County decides not to accept any of the proposals and to reopen the contract. Otherwise, proposal records shall be open to the public inspection only after award of the contract except as provided in paragraph "c" below. Any inspection of procurement transaction records under this section shall be subject to reasonable restrictions to ensure the security and integrity of the records.
- c. Trade secrets or proprietary information submitted by a bidder, offeror or contractor in connection with a procurement transaction shall not be subject to public disclosure under the Georgia Open Records Act; however, the bidder, offeror or contractor must invoke the protections of this section prior to or upon submission of the data or other materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary.
- d. Nothing contained in this section shall be construed to require the County, when procuring by "competitive negotiation" (Request for Proposal), to furnish a statement of the reasons why a particular proposal was not deemed to be the most advantageous to the County.

**2.28 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. Contractor shall immediately notify County in the event any subcontractor is added to either Federal or State listing after award of the subcontract.

## 2.29 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.

## 2.30 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.

2.31 **REFERENCES - \$500,000 or more:** On July 25, 2003 the Board of Commissioners directed that all construction projects with a bid of \$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: \_\_\_\_\_  
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.



**\$499,000 and less:** Provide references from owners of at least three (3) projects of various sizes for which contractor was the prime contractor. 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. **Price Change:** Preference shall be given to the bidder submitting the lowest and best firm price as his bid. Should it be found that due to unusual market conditions it is to the best interest of the County to accept a price with an escalation clause, the following shall apply:

The contract price shall be frozen for a specified period. This period must be shown on your bid **11-10-5-**  
**4** Cost data to support any proposed increase must be submitted to the Purchasing Agent not less than ten (10) days prior to the effective date of any such requested price increase.

Any adjustment allowed shall consist of bona fide material cost increases which may be passed on to the consumer.

No adjustment shall be made to compensate a supplier for inefficiency in operation, or for additional profit. Bids indicating "price in effect at time of shipment" will be considered invalid.

3.2. **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.

3.2.1. **FORCE ACCOUNT:** When no agreement is reached for additional work to be done at Lump Sum or Unit Prices, then such additional work shall be done based on the following Cost-Plus-Percentage basis of payment. The Georgia Department of Transportation specifications for the use of a force account will not be used.

- a. For work performed by the prime contractor/general contractor, the contractor shall be reimbursed for actual cost incurred in doing the work, and an additional payment of 15% to cover overhead and profit.
- b. For work performed by a sub-contractor, the sub-contractor shall be reimbursed for actual cost incurred in doing the work, and an additional payment of 10% to cover overhead and profit. The contractor shall be allowed an overhead and profit mark-up not to exceed 7% on the subcontractor's price. The County shall not recognize subcontractors of subcontractors.
- c. The term "Actual Cost" shall include the cost of material and labor as follows:
  - i. Material cost - Direct cost of material, sales tax, freight and equipment rental.
  - ii. Labor cost - Man hour cost listed separately by trade, payroll costs including workman's compensation, social security, pension and retirement.
- d. The term "Overhead and Profit" shall include bonds (Payment & Performance, Roof & Wall), insurance (Liability, Builders Risk), permits, supervision costs (cost of subcontractor to supervise own work, cost of contractor to supervise work of sub-contractor), proposal preparation and all administrative costs.

3.2.2. **LIQUIDATED DAMAGES:** Failure to complete the work within the duration of **125 calendar days** plus any extension authorized in writing by the County Engineer shall entitle the County to deduct as "Liquidated Damages" from the monies due the Contractor the amount of **\$250** for each calendar day in excess of the authorized construction time.

### 3.3 SURETY REQUIREMENTS and Bonds: (Check where applicable)

- X 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.
- X B.** Contractor(s) 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.

- X 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.
- X 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 sureties 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, and;

### 3.3.1 ALTERNATE BONDING PROGRAM:

Chatham County Board of Commissioners has approved an agreement with a company that will provide an Alternate Bonding Program for Disadvantaged Businesses within Chatham County area (\*MSA) for registered contractors and sub-contractors. Must be registered in the Vendor Information Management System (VIMS) at the Chatham County web site found at the Purchasing and Contracting link.

It is the desire of the Board of Commissioners to provide more contracting opportunities to County small, minority and women businesses to bid projects not only as sub-contractors, but as prime or general contractors, thereby growing local business enterprises.

For additional information on this Program, you may contact Ms. Arneja Riley, M/WBE Coordinator, at 912-652-7860, [alriley@chathamcounty.org](mailto:alriley@chathamcounty.org), or in person at 124 Bull St. 3<sup>rd</sup> Floor, Human Resources and Services Department, Suite 310 ( Old Courthouse).

\*MSA: Metropolitan Statistical Area for Chatham County is Bryan, Chatham, and Effingham Counties.

- 3.4 **Warranty Requirements:** (Check where applicable):
  - a. Provisions of item 2.12 apply.
  - b. Warranty required.
    - 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

b. One-time Purchase

**X** c. Other **ONE TIME CONTRACT**

**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.

## 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* SHEET FILLED OUT (page 23 of ITB)**
- 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 M/WBE SUBCONTRACTORS / SUPPLIERS.**
- 6. SECTION 2.28 OF ITB (page 15) 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. COMPLETE AND SUBMIT ALL *ATTACHMENTS* TO THE ITB (Attachments A thru G).**
- 8. SUBMIT A COPY OF YOUR *STATE OF GEORGIA CONTRACTORS LICENSE*.**

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NAME / TITLE

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COMPANY

---

ADDRESS

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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 will 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 as liquidated damages 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 as liquidated damages 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:

### **SUGAR TREE COURT EAST AND WEST STREET DRAINAGE IMPROVEMENTS**

**BID NO. 11-10-5-4**

This Project is located at Sugar Tree Court East and West in the Golden Isles Subdivision in Unincorporated Chatham County.

The project consists of the installation of a storm drainage system including 30" and 24" reinforced concrete pipes and storm drainage inlets, and other work as detailed on the drawings.

Soil erosion and sedimentation control is required and must be implemented prior to, and maintained during construction of the work. Construction phasing and maintenance of traffic is required.

**Note: 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 125 CALENDAR DAYS AFTER THE TEN DAY PERIOD.**



**Bid Form**

**PROJECT: GOLDEN ISLES SUBDIVISION SUGAR TREE COURT EAST AND WEST DRAINAGE IMPROVEMENTS  
4/4/2011**

Item	Description	Unit	Quantity	Unit Price	Item Total
<b>General</b>					
1.	General Conditions / Mobilization (shall not exceed 3% of the total bid amount) payable after pre construction inspection photos are provided to the County and after initial erosion and sedimentation inspection is complete.	LS	1		
2.	Failure to conform to the sediment and erosion control plan, per Occurance	EA	0	\$300.00	\$0.00
<b>Earthwork</b>					
3.	Clearing & Demolition: Includes removal of piping, headwalls, driveways, etc.	LS	1		
4.	Grading, Complete	LS	1		
4.	Remove and Replace Unsuitable Subgrade Material, payable based on field measurements performed in the presence of County Inspector and maximum trench width of inside pipe diameter plus 2 feet.	CY	750		
<b>Roadway</b>					
6.	Saw Cut, Remove and Patch Street Pavement (Includes 8 inches of G.A.B. and #57 Stone trench backfill)	SY	370		
7.	Saw Cut, Remove and Replace Concrete Driveways (Includes 4" G.A.B. and #57 Stone trench backfill)	SY	1500		
<b>Drainage</b>					
8.	30" RCP w/Stone Bedding and fabric	LF	640		
9.	24" RCP w/Stone Bedding and fabric	LF	510		
10.	18" RCP w/Stone Bedding and fabric	LF	445		
11.	Ditch Inlets Over New Pipe	EA	15		
12.	Ditch Inlets Over Existing Pipe	EA	4		
13.	Connect to Existing 24" and 30" RCP (SD-12)	LS	1		
14.	Storm Manhole	EA	1		
15.	Remove and Replace Pipe Between SD-17 and Existing Manhole	LS	1		
16.	Fill Existing Pipe With Flowable Fill	LS	1		

**PROJECT: GOLDEN ISLES SUBDIVISION SUGAR TREE COURT EAST AND WEST DRAINAGE IMPROVEMENTS**

Erosion Control					
17.	Construction Exit	EA	1		
18.	Type "A" Silt Fence	LF	2600		
19.	Type "C" Silt Fence	LF	150		
20.	Temporary Grassing	SY	6550		
21.	Sodding	SY	13100		
22.	Sediment Traps	EA	24		
23.	Tree Protection Fence	LF	500		
24.	Install Rip Rap at Outfall	LS	1		

Traffic					
24.	Traffic Control	LS	1		
25.	Remove and Replace Mailboxes and Signs	LS	1		

**Total Bid**\_\_\_\_\_  
NAME / TITLE\_\_\_\_\_  
COMPANY\_\_\_\_\_  
ADDRESS\_\_\_\_\_  
PHONE / FAX NO'S.

## LIST OF SUBCONTRACTORS

I do \_\_\_\_\_, do not \_\_\_\_\_, propose to subcontract some of the work on this project. I propose to subcontract work to the following subcontractors:

[illegible]

SIGNED: \_\_\_\_\_  
CONTRACTOR

[illegible]

**Project Description and Special Conditions**  
**for**  
**Sugar Tree Court East and West Street Drainage Improvements**

**Project Description:**

The project is located at Sugar Tree Court East and West in the Golden Isles Subdivision in Unincorporated Chatham County.

The project consists of all work required to install a storm drainage system including 30" and 24" reinforced concrete pipes and storm drainage inlets, and other work as detailed on the drawings.

Soil erosion and sedimentation control is required and must be implemented prior to, and maintained during construction of the work. Construction phasing and maintenance of traffic is required.

The project includes liquidated damages for not completing work within the specified time. The project time of completion specified by the contract includes normal expected periods of wet weather (rain days) and wet or flowing water conditions in ditches, pipes and streams. No adjustment in the time of project completion will be considered unless the contractor provided documented evidence of normal conditions and actual conditions at the site.

**Contract Documents Include:**

- I. Technical Specifications
  - A. Section 01600 Special Conditions
  - B. Section 02070 Selective Demolition
  - C. Section 02200 Earthwork
  - D. Section 02270 Erosion and Sedimentation Control
  - E. Section 03300 Cast in Place Concrete
  
- II. Drawings
  - Sheet 1 Cover
  - Sheet 2 General Notes and Legend
  - Sheet 3 Sugar Tree Court West Plan and Profile
  - Sheet 4 Sugar Tree Court East Plan and Profile
  - Sheet 5 Sugar Tree Court East and West Profiles
  - Sheet 6 Initial E, S & P Control Plans
  - Sheet 7 Intermediate E, S & P Control Plans
  - Sheet 8 Final E, S & P Control Plans
  - Sheet 9 Erosion & Sedimentation Control Notes
  - Sheet 10 Erosion & Sedimentation Control Details
  - Sheet 11 Construction Details

### **Contractor's Access and Responsibility to Maintain Public Access**

Access to the site shall be along the existing roads in the subdivision. The contractor shall submit a Traffic Control Plan to the Chatham County Department of Engineering for approval prior to beginning work. All necessary traffic control devices, flagmen, notifications shall be provided for by the contractor and approved by the Chatham County Department of Engineering. The Contractor shall obtain an Encroachment Permit from the Department of Public Works prior to any work within road rights of way.

The contractor shall maintain public access to all lots at all times. Driveways and road driving surfaces shall be restored to vehicular use at the end of each working day. Mailboxes shall be temporarily relocated or other arrangements made as approved by the County so that mail delivery is not interrupted. Barricades and warning devices shall be used at all times to protect the public from open excavations and other hazards created by the contractor's operations.

### **Work Hours**

Work hours shall be limited to 7:00 am to 5:30 pm Monday through Friday and shall exclude all Federal and County observed holidays. The contractor shall maintain public access through the project construction site at all times and shall not install lane closures, pace traffic or move equipment or materials between 8:00 am to 9:00 am and between 3:15 pm to 4:30 pm. A single lane of traffic may be closed during other times with adequate traffic control devices in place and as provided below. All lanes of all roads shall be open to traffic during all non-working hours.

### **Preconstruction Inspection**

A preconstruction photographic record is required and must be submitted to Chatham County Department of Engineering for approval prior to start of any land disturbing work. The photographic record shall consist of a bound photo album (such as a 3-ring binder with plastic sleeves) with 3" by 5" color photographs. Each photograph shall be described as to location and feature represented.

Special emphasis shall be given to record pre-disturbance condition of roadway pavements, curbing, sidewalks, driveways, buildings, utilities and other improvements located within or within 50 feet of the project limits. The preconstruction photographic record shall be provided to and accepted by the County prior to issuance of Notice to Proceed. This is in addition to other inspections and surveys required of the Contractor or performed by the County.

### **Post-construction Inspection**

The Contractor shall provide and pay all costs of a video inspection record of the completed pipe produced by a qualified sewer inspection company or agency (Chatham County or City of Savannah inspection crews are acceptable, however the Contractor shall remain responsible for paying all costs). The video inspection record shall be provided on standard DVD and compatible with County viewing software.

Prior to final inspection of the project, the contractor shall restore the site to a condition equal or better than its pre construction condition. This includes but is not limited to restoration of lawn grasses, replacement of mailboxes, pavement repair, and cleaning up debris. All deficiencies identified by the inspection shall be corrected by the Contractor prior to acceptance of the work as substantially complete.

### **Erosion and Sedimentation Control:**

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. This includes compliance with the County Grading Permit dated March 30, 2011, copy attached.

The contractor shall perform all sediment and erosion control inspection and reporting requirements, recording daily precipitation amounts, and other duties as described in the contract documents. Inspection reports shall be provided on forms provided by the County (see attached) or as approved by the County. Signed copies of the Contractor's reports shall be submitted to the County with each Request for Payment. Water quality testing and reporting will be provided by the County.

The total contract amount will be reduced by an amount specified on the bid form 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.

### **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:

1. Inspection reports of the sediment and erosion control facilities as described in the attached General Permit No. GAR100002. A copy of the Georgia Soil and Water Conservation Commission certification card(s) of the person(s) completing the reports shall also be submitted. Missing or incomplete documentation of inspection reports may be cause for denial of payment.
2. Copies of material delivery tickets acknowledged and dated by the County's representative (engineer, inspector, project manager). The Contractor shall be responsible for collecting these documents at the time of delivery and presenting them to the County's agent at the time of delivery or as soon as possible thereafter for countersignature. The representative's acknowledgement of 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 denial of payment.
3. 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.

### **Construction Staking and Control of Work**

The County shall engage a surveyor to provide initial construction stakeout and demarcation of 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.

### **Special Requirements of Construction**

1. The Contractor shall confine all personnel, equipment, materials and work to the area defined as the project limits shown on the drawings.
2. The Contractor shall accommodate dry weather and wet weather drainage flows through the project site without hindrances or damage to the work.
3. The Contractor shall include saw cutting of all concrete driveways as an incidental cost to the project allowing the limits of pavement removal to be as shown on the drawings (to existing joints) or as directed by the County (not at a joint).
4. Trench backfill beneath all pavements shall consist of #57 Stone. Cost to be included in the price per square yard of respective pavement sections.
5. Contractor shall establish new driveway profiles between street and existing driveway pavement to remain in a manner to establish positive drainage toward drainage inlets.
6. Contractor shall coordinate relocation of water service lines with the provider to ensure no disruption in water service to affected home occupants. If an interruption is determined to be necessary, the contractor shall notify the home occupant not less than 3 days prior to the interruption.
7. All utility coordination shall be performed by the contractor at no additional cost to the County.



## NPDES Inspection Report (1 of 2)

<b>Contractor</b>		<b>Inspector</b>	
<b>Job Name</b>		<b>Date</b>	
Weather Conditions		Rain (Inches)	

Circle One:    Daily                  14 Days                  After Rain (More than ½")                  Monthly

**1. Disturbed Areas (not stabilized): All Inspections**

Location:	Activity (yes / no)	14-day rule? (yes / no)	Action Required.	Action Complete Date

**2. Petroleum Storage or Use: All inspections**

Location:	Type Use	Spill / Leak? (yes / no)	Action Required.	Action Complete Date

**3. Vehicle Exit Areas: All inspections**

Location:	Gravel Clean (yes / no)	Tracking Offsite? (yes / no)	Action Required.	Action Complete Date

**4. Exposed (Uncovered) Material Storage Areas with no Final Stabilization: 14 Days, After Rain**

Location:	Type of Material	Spill / Leak? (yes / no)	Action Required.	Action Complete Date

## NPDES Inspection Report (2 of 2)

<b>Contractor</b>		<b>Inspector</b>	
<b>Job Name</b>		<b>Date</b>	

### 5. Structural Control Practices / Vegetative Practices (BMPs): 14 Days, After Rain

Location / Type of Control:	Type Use	Spill / Leak? (yes / no)	Action Required.	Action Complete Date

### 6. Receiving Waters (Downstream of Outfalls): 14 Days, After Rain

Location:	Stormwater Flows? (yes/no)	Stormwater Impacts? (yes / no)	Action Required.	Action Complete Date

### 7. Other Pollution: 14 Days, After Rain

Location:	Debris? (yes / no)	Sheens? (yes / no)	Action Required.	Action Complete Date

### 8. Stabilized Areas: Monthly

Location:	Evidence of / Potential for Pollutant Discharge	Action Required.	Action Complete Date

Certification: I hereby certify that the above report is a true and complete representation of actual site conditions.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

\_\_\_\_\_  
Certification No.

Original: Chatham County Department of Engineering

Copies: \_\_\_\_\_



## CHATHAM COUNTY DEPARTMENT OF ENGINEERING

124 Bull Street, Room 430

P.O. Box 8161

Savannah, Georgia 31412-8161

FAX 912-652-7818

912-652-7800

Albert G. Bungard, P.E.  
County Engineer

Leon Davenport, P.E.  
Assistant County Engineer

March 30, 2011

Mr. William Uhl, P.E.  
Chatham County Department of Engineering  
By Email

Re: **Golden Isles Drainage Improvements (Grading Permit #2010-057)**

Dear Mr. Uhl,

The plans received on March 25, 2010 are approved. One set of the construction plans has been stamped approved and signed, and it is ready to be picked-up. **The contractor must have the approved plans on site at all times during land disturbing activities.** Notices of violation will be issued if the approved set of plans cannot be produced on site at any time.

Second, the permit will be issued after initial BMP's have been properly installed and we receive written certification from you that the BMP's were installed according to the approved construction plans and a copy of the executed NOI. **Only clearing that is necessary for installation of BMP's is permitted at this time.** This initial approval letter will expire after one year from the approval date if a permit is not issued.

The issuance of this permit will not relieve the owner/developer, designer(s) and contractor(s) nor their representatives from their individual or collective responsibility to comply with the applicable provisions of the local, State and/or Federal regulations. The review of the submitted documents is not to be construed as a check of every item in the submitted documents, and does not prevent Chatham County officials from hereafter requiring corrections and/or omissions in the submitted documents and/or construction.

Let me know if you have any questions or concerns.

Respectfully,

Chris Rains, P.E.  
Civil Engineer I

cc: Al Bungard, County Engineer  
George Peters, Jeff Kirkland, Inspectors

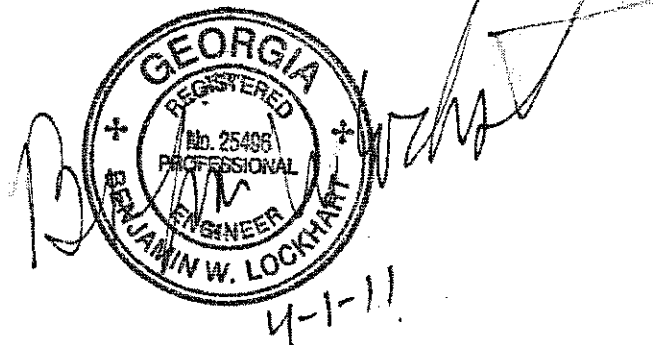
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**TECHNICAL SPECIFICATIONS  
FOR  
GOLDEN ISLES SUBDIVISION  
SUGAR TREE COURT EAST AND WEST  
STREET DRAINAGE IMPROVEMENTS**

**PREPARED FOR:  
CHATHAM COUNTY, GEORGIA**

**EMC PROJECT NO. 10-1967**

**March 2011**



**INDEX TO  
SECTION 02070 – SELECTIVE DEMOLITION**

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**SECTION 02070  
SELECTIVE DEMOLITION**

**PART I - GENERAL**

**1.01 DESCRIPTION OF WORK:**

Extent of selective demolition work is indicated on drawings.

Types of Selective Demolition Work: Demolition requires the selective removal and subsequent off-site disposal of the following:

Removal of piping and miscellaneous items indicated on plans.

**1.02 SUBMITTALS:**

Schedule: Submit schedule indicating proposed methods and sequence of operations for selective demolition work to the Engineer for review prior to commencement of work. Include coordination for shut-off, capping, and continuation of utility services as required, together with details for dust and noise control protection.

**1.03 JOB CONDITIONS:**

Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.

Storage or sale of removed items on-site will not be permitted.

Protections: Provide temporary barricades and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.

Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.

Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, and other adjacent occupied or used facilities.

Do not close, block or otherwise obstruct roads, or other occupied or used facilities without written permission from the owner. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

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Explosives: Use of explosives will not be permitted.

Utility Services: Maintain existing utilities and protect against damage during demolition operations.

**PART II - PRODUCTS (Not Applicable).**

**PART III - EXECUTION**

**3.01 INSPECTION:**

Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions of structures equipment or surrounding properties which could be misconstrued as damage resulting from selective work; file with the Engineer prior to starting work.

**3.02 DEMOLITION:**

Perform selective demolition work in systematic manner. Use such methods as required to complete work indicated on drawings in accordance with demolition schedule and governing regulations.

**3.03. DISPOSAL OF DEMOLISHED MATERIALS:**

Remove debris, rubbish and other materials resulting from demolition operations from the project site immediately. Transport and legally dispose of materials off site.

If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.

Burning of removed materials is not permitted on project site.

**3.04 CLEAN-UP AND REPAIR:**

Upon completion of demolition work, remove tools, equipment and demolished materials from site.

Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selection demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

**END OF SECTION**

**INDEX TO  
SECTION 02200 – EARTHWORK**

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3.01	Compaction Testing	02200 - 5



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**SECTION 02200  
EARTHWORK**

**PART 1 - PRODUCTS**

**1.01 MATERIALS:**

- A. General: Where the terms "approved", "suitable", "unsuitable" and similar designations are used in specifications section pertaining to earthwork, it means earth or material designated as being approved, suitable or unsuitable for their intended use by the Engineer.
- B. Suitable Soil Materials are defined as those complying with ASTM D-2487 soil classification groups: GW, GP, GM, SM, SW, and SP.
- C. Unsuitable Soil Materials are defined as those complying with ASTM D-2487 soil classification groups GC, SC, MH, ML, CL, CH, OL, OH, PT. Clays, silts, and organic soils will be considered as unsuitable materials. Excess water in materials will be a basis for establishing unsuitable material regardless of gradation.
- D. Backfill and Fill Materials shall be suitable soil materials, free of clay, rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter. Suitable materials for earth fill shall generally be composed of sands, clay-sand and silt-sand mixtures and shall be approved by the Engineer prior to being incorporated in fills.

**PART 2 - EXECUTION**

**2.01 TOP SOIL**

- A. Contractor shall strip and stockpile topsoil.
- B. Topsoil shall be placed to a depth of 4" over all disturbed areas.
- C. Any remaining topsoil will be hauled off site and disposed of at the Contractor's expense.
- D. Additional topsoil shall meet Georgia Department of Transportation Specification 893.1. Any additional topsoil which is required to repair disturbed areas and complete the contract shall be provided by the Contractor at his expense.

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**2.02 EXCAVATION**

- A. Excavation is unclassified and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.
- B. All excavation shall be in conformity with the lines, grades and cross sections shown on the Plans or established by the Engineer. All suitable material removed in the excavation shall be used as far as practicable in formation of embankment, subgrades and shoulders and at such other places as may be indicated on the drawings or directed by the Engineer.
- C. Unauthorized Excavation consists of removal or loosening of materials beyond indicated subgrade elevations or dimensions without specific directions of the Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, and as specified herein shall be at Contractor's expense.

Under footings, foundation bases, or retaining walls, fill unauthorized excavations by extending indicated bottom elevation of footing or base to the bottom of the excavation, without altering required top elevation.

Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by the Engineer.

- D. Additional Excavation: When excavation has reached required subgrade elevations and unsuitable materials exist, carry excavations deeper and replace excavated materials as directed by the Engineer. Dispose of unsuitable material as directed by the Engineer.

The Contractor shall dispose of unsuitable and surplus materials except where the Engineer permits the use of such fill slopes, or unless specific disposal areas are shown on the Plans.

- E. Dewatering: Prevent surface water and subsurface or ground water flowing into excavations and from flooding project site and surrounding area. Do not allow water to accumulate in excavations. Remove water to prevent softening of roadway subgrades and foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

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Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

The Contractor will be responsible for all damage incurred in handling water conditions.

- F. **Material Storage:** Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage and to minimize erosion. Locate and retain soil materials away from edge of excavations. Do not store within drip-line of trees indicated to remain.
- G. **Excavation for Structures:** Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10', and extending of sufficient distance from footings and foundations to permit placing and removal of concrete framework, installations to permit placing and removal of concrete framework, installation of services, other constructions, and for inspection.

In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.

- H. **Proper drainage shall be maintained at all times.**

## **2.03 BORROW**

- A. Shall be excavated and hauled by the Contractor from his own sources and shall meet the requirements as specified.
- B. Borrow shall be procured by the Contractor.
- C. Contractor shall bear all expenses in developing borrow sources including drying material, haul roads, excavation and hauling.

## **2.04 GROUND SURFACE PREPARATION FOR FILL**

- A. All vegetation such as roots, brush, heavy sods, heavy growth of grass, decayed vegetation matter, rubbish, and other unsuitable material within the areas to be filled shall be stripped and removed prior to beginning the fill operation.
- B. Sloped ground surfaces steeper than 1 vertical to 4 horizontal, on which fill is to be placed shall be plowed, stepped, benched or broken up as

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directed, in such a manner that the fill material will bond with the existing surface.

- C. Surfaces on which fill is to be placed and compacted shall be plowed, wetted or dried as may be required to obtain the specified compaction.

**2.05 BACKFILL/FILL PLACEMENT OPERATIONS**

- A. During the placement and compaction of backfill, the contractor shall take all necessary measures to place backfill and compact it at the proper moisture content so that there will be no pumping of the backfill during placement. No fill shall be placed on top of any fill material that is found to be pumping even if the fill that is being placed is meeting and passing the compaction requirements. If any fill is found to be pumping, it shall be stabilized by the contractor at no additional cost or time to the Owner before placing the next lift. Any backfill lifts shall be no more than 12" but shall not exceed the capacity of compaction equipment.

**2.06 FINISH GRADING**

- A. All areas covered by the project including excavated and filled sections and adjacent transition areas shall be smooth graded and free from irregular surface changes.
- B. Degree of finish shall be that ordinarily obtainable from either blade-grader or scraper operations, supplemented with hand raking and finishing, except as otherwise specified.
- C. The finished surface of unpaved areas shall be not more than 0.05' feet above or below the established grade or designed cross-section. Grading shall be done in order that no ponding will occur.
- D. Ditches shall be finished smooth to reduce erosion and permit adequate drainage.

**2.07 DISPOSAL OF WASTE MATERIAL**

- A. All vegetation, roots, brush, sod, broken pavements, curb and gutter, rubbish, and other unsuitable or surplus material stripped or removed from the limits of construction shall be legally disposed of by the Contractor.

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**2.08 PROTECTION**

- A. The Contractor shall be responsible for protection of below grade utilities shown on the drawings or indicated to him by the Owner at all times during earthwork operations.
- B. Graded areas shall be protected from traffic, erosion, settlement, or any washing away that may occur from any cause prior to acceptance.
- C. Any repair or reestablishment of grades prior to final acceptance shall be at the Contractors expense.

**PART 3 - TESTING**

**3.01 COMPACTION TESTING**

- A. General: Compaction of earth fill and all pavement subgrades shall be performed to the percentage of maximum standard of modified dry densities and to the depths as indicated below:
  - B. Pipe Backfill under pavements and driveways: 98% Standard (ASTM Test D-698) Compact top 8" under pavement and top 4" under driveways to 100% standard.
  - C. Fill under all structures, slabs, and backfill behind walls: 98% Standard (ASTM Test D-698).
    - 1. Pipe backfill in unpaved Areas to be grassed, sodded or landscaped: 90% Standard (ASTM Test D-698) full depth.
- All other areas not described above: as directed by the Engineer.
- D. Moisture Control: All compaction shall be performed at material moisture contents within 3 percentage points, plus or minus, of optimum. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations. Remove, and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing or pulverizing until moisture content to a satisfactory value.
  - E. Field Density Tests: Tests shall be made in accordance with ASTM Method D-1556 and/or ASTM 2922. Minimum testing frequency shall be

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based on the most stringent of the following requirements (as applicable).  
Additional tests may be required by the Engineer in areas he deems  
critical.

- One every layer of fill,
- Areas where degree of compaction is in question

If in opinion of Engineer, based on testing service reports and inspection,  
subgrade or fills which have been placed are below specified density,  
additional compaction and testing will be required.

END OF SECTION

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SECTION 02270 – EROSION AND SEDIMENTATION CONTROL**

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**SECTION 02270  
EROSION AND SEDIMENTATION CONTROL**

**PART 1 - PRODUCTS**

**1.01 CHEMICALS FOR DUST CONTROL:**

- A. Calcium Chloride, Anionic Asphalt Emulsion, Latex Emulsion or Resin-in-Water Emulsion may be used for dust control.

**1.02 SILT FENCE FABRIC:**

- A. Silt fence fabric shall be a woven fabric certified to meet FHWA's Task Force 25 minimum roll average per ASTM-D-4354. The geotextile fabric shall be a woven sheet of plastic yarn, of a long chain synthetic polymer composed of at least 85% by weight propylene, ethylene, amide, ester, or vinylidene chloride, and shall contain stabilizer and/or inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultra-violet and/or heat exposure. The fabric should be finished so that the filaments will retain their relative position with respect to each other. The fabric shall be free of defects, rips, holes, or flaws.

The fabric shall meet the requirements on the plans.

Silt fencing shall not be placed in waterways or areas of concentrated flow.

**1.03 HAY BALES:**

- A. Hay bales rectangular in shape shall be bound with wire or nylon to securely contain the material. Pine straw bales may be used in lieu of hay bales.

**1.04 PLASTIC FILTER FABRIC:**

- A. Plastic filter fabric shall be a pervious sheet of plastic yarn, of a long chain synthetic polymer composed of at least 85% by weight propylene, ethylene, amide, ester, or vinylidene chloride, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultra-violet and/or heat exposure. The cloth should be finished so that the filaments will retain their relative position with respect to each other. The cloth shall be free of defects, rips, holes, or flaws. During shipment and storage, the filter fabric shall be wrapped in a protective material. The fabric shall meet the following requirements.

Woven Fabrics:

Tensile Strength (any direction)	315 lbs.
Bursting Strength	600 psi



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Elongation Before Breaking	15%
Permittivity	4 gal/min/sf

Product shall be equivalent to mirafi 500-x

- B. Seams - Fabric may be sewn together with thread of a material having the same chemical requirements as the material forming the fabric or shall be bonded by cementing or by heat. The strength of the seams shall be equal to that of the unaged fabric. Fabrics to be used under Rip-Rap are allowed to be bonded or sewn together forming sections not less than six feet wide.

**1.05 STONE:**

- A. Stone shall be hard quarry, granite or field stone and shall be of such quality that the stone will not disintegrate on exposure to water or weather. The stone size, type and weight shall be as shown in conjunction with the structure with which it is associated. The stone shall be accepted by the Engineer prior to delivery.

**1.06 RIP-RAP:**

- A. Rip-rap shall meet Georgia Department of Transportation specifications as shown on the drawings. The stone pieces shall have a minimum plane dimension of 12 inches. The stone analysis, source and other pertinent data shall be submitted for review by the Engineer prior to delivery. The filter fabric for permanent Rip-rap shall be Mirafi 500X or equivalent. Rip Rap shall not be placed on slopes steeper than 1.5 horizontal to 1.0 vertical.

**PART 2 - EXECUTION**

**2.01 GENERAL:**

- A. Every effort shall reasonably be employed by the Contractor to control erosion with the use of, but not limited to, terraces, grassing, and silt fencing during the project. All erosion and sedimentation control measures or facilities, whether temporary or permanent, shall be continuously maintained by the Contractor so as to be effective, or as ordered by the Owner.

**2.02 BUFFER ZONE:**

- A. Buffer zone is an undisturbed zone or "green belt" surrounding the site, bordering streams or environmentally sensitive areas. Contractors shall not trespass on or in these areas unless he has prior acceptance by the Owner. Trespass in these areas will not be permitted unless there is no alternative method to accomplish the task. Cost shall not come into consideration in the evaluation of this type of request.

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**2.03 CONSTRUCTION EXIT:**

- A. Construction exits shall be located at the exits of the project to remove mud from the tires of all vehicles leaving the site. The construction exit shall consist of a minimum of six (6) inch thick pad of washed stone meeting AASHTO M288-96, Section 7.4, Stabilization Requirements. The aggregate size shall be in accordance with National Stone Association R-2 ( 2"-3 " diameter in size and of the necessary length to accomplish the task for which it is intended. The pad may require periodic top dressing with 2" of similar stone. Geotextiles are required and a Separation/Stabilization fabric to keep the aggregate stone from becoming contaminated with subgrade soils. The geotextile shall be based on AASHTO M288-96 Specifications. The entrance area must be excavated to a depth of 3 inches and be cleaned of all vegetation and roots. Geotextile underliner must be placed the full length and width of the entrance.

**2.04 DISTURBED AREA STABILIZATION:**

- A. Vegetative cover will be placed on completed areas. This vegetative plan will be carried out on road cut and fill slopes, shoulders, and other critical areas created by construction. Plant grass seed as soon as construction in an area is completed. Planting will be made to control erosion, to reduce damage from sediment and runoff to downstream areas and to improve the safety and beauty of the development area.

Due to grading and construction, the areas to be treated are mainly subsoil and substrate. Fertility is low and the physical characteristics of the exposed material are unfavorable to all but the most hardy plants.

Conventional Seeding Equipment - Grade, shape and smooth where needed to provide for safe equipment operation at seeding time and for maintenance purposes. The lime and fertilizer in dry form will be spread uniformly over the area immediately before seedbed preparation. A seedbed will be prepared by scarifying to a depth of 1 to 4 inches as determined on site. The seedbed must be well pulverized, smoothed and firmed. Seeding will be by either a cultipacker-seeder, drill, rotary seeder, mechanical seeder, hand seeder or hydro-seeding. Seed will be distributed uniformly over a freshly prepared seedbed and covered lightly. Within 24 hours after seeding, with exception to hydro-seeding, straw or hay mulch will be spread uniformly over the area, leaving about 25 percent of the ground surface exposed. Mulch will be spread with blower-type mulch equipment or by hand and anchored immediately after it is spread. A disk harrow with the disk set straight or a special packer disk may be used to press the mulch into the soil.

**2.05 DUST CONTROL ON DISTURBED AREAS:**

- A. Dust raised from vehicular traffic will be controlled by wetting down the access road with water or by the use of a deliquescent chemical, such as calcium chloride, if the relative

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humidity is over 30%. Chemicals shall be applied in accordance with the manufacturer's recommendations. Calcium chloride, anionic asphalt emulsion, latex emulsion or resin-in-water emulsion may be used for dust control.

**2.06 SILT FENCE:**

- A. Silt fence shall be placed at the approximate location shown on the plans and installed in accordance with the Georgia Erosion and Sediment Control Manual recommendations. Type C@ wire-reinforced silt fence shall be used where fill slopes exceeds 3:1. Silt fence shall not be placed in waterways or areas of concentrated flow.

**2.07 STONE PLACEMENT:**

- A. The minimum thickness or depth of the stone layer shall be shown on the drawings or the detail with which the device is associated. When used with a plastic filter fabric, the stone placing shall begin in a trench at the bottom of the slope with the filter fabric wrapped in stone. The entire mass of stone shall be placed so as to be in conformance with the lines, grades, and thickness shown on the drawings.

**2.08 RIP-RAP:**

- A. Rip-rap shall be placed in accordance with the notes on the drawings. Any rip rap that shall be permanent shall have an underlayment of filter fabric.

**2.09 STORM DRAIN OUTLET PROTECTION:**

- A. Storm drain outlets shall be paved or have a rock or other energy dispersion device associated with it, as called for on the drawings.

To prevent undermining of the rip-rap apron a separation geotextile shall be used beneath the entire length of apron. The geotextile shall be mirafi 500X or equal.

**2.10 SITE RESTORATION:**

- A. The site shall be restored in a manner suitable to accommodate the erosion control device or system of devices for the use which they are intended.

**2.11 TOPSOIL:**

- A. If topsoil is stripped and stored on site to be used after construction, the stockpile side slopes shall be 2:1 or flatter. Stockpiled topsoil shall not obstruct natural drainage. Topsoil replacement shall be spread at minimum of 4" thickness.

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**2.12 SITE SAFETY:**

- A. The Contractor shall incorporate and utilize all necessary fencing and other safety barriers as necessary, or directed by Owner, to prevent trespassing into potentially dangerous areas of the erosion control area.

END OF SECTION

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**SECTION 02400  
STORM DRAINAGE**

**PART 1 - PRODUCTS**

**1.01 PIPE:**

- A. Concrete Pipe – Shall be reinforced Class III and shall conform to ASTM Specification C-76.
  - 1. Joints – Shall be water tight flexible rubber gasket and shall meet ASTM Specification C-443 and AASHTO M-198.
- B. Filter Fabric – Mirafi 140N or equivalent.
- C. Concrete pipe shall be designed with no lifting holes. The lifting holes will jeopardize the structural integrity and hydraulic capacity of the pipe once installed.

A minimum depth of 12 inches cover is required for RCP Class III.

**1.02 DRAINAGE STRUCTURES:**

- A. Details - See plans.
- B. Concrete - Reinforced and non-reinforced.
  - 1. Shall have a compressive strength of 4,000 PSI in 28 days. Concrete shall be ready mixed conforming to ASTM C-94.
  - 2. Reinforcing steel shall conform to ASTM A-615, Grade 60. Mesh reinforcing shall conform to ASTM A-185. Reinforcing shall be covered by a minimum 2" of concrete for covers and 2" for walls and flooring and 3" where concrete is deposited directly against the ground.
  - 3. Expansion joint filler materials shall conform to ASTM Specification D-1751, to AASHTO M-90 or shall be resin impregnated fiberboard conforming to the physical requirements of ASTM Specification D-1752.

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**Mortar:**

1. Mortar used at connections of pipe and drainage structures shall be composed of one part by volume of portland cement and two parts of sand. The Portland cement shall conform to ASTM C-150, Type I or II. The sand shall conform to AASHTO Standard M-45 and shall be of an accepted gradation. Hydrated lime may be added to the mixture of sand and cement in an amount equal to 25% of the volume of cement used. Hydrated lime shall conform to ASTM C-141, Type A. The quantity of water in the mixture shall be sufficient to produce a workable mortar, but shall in no case exceed 7 gallons of water per sack of cement. Water shall be clean and free of harmful acids, alkalies and organic impurities. The mortar shall be used within 30 minutes from the time the ingredients are mixed with water.

- D. Precast - Shall be constructed in accordance with ASTM C-478 and conform to the details on the project drawings.

1. Joints - Shall be tongue and groove sealed with flexible gaskets or mastic sealant. Gaskets shall be O-Ring or Type A or B "Tylox" conforming to A.S.T.M. C- 443 and mastic shall be "Ram-nek", or equivalent, with primer. The primer shall be applied to all contact surfaces of the manhole joint at the factory in accordance with the manufacturer's instructions.
2. Steps - Shall be polypropylene equivalent to M.A. Industries, Type PS-1 or PS-1-PF. The steps shall be installed at the manhole factory and in accordance with the recommendations of the step manufacturer. Manholes will not be acceptable if steps are not installed accordingly, and properly aligned vertically.
3. Leaks - No leaks in the manhole will be acceptable. All repairs made from inside the manhole shall be made with mortar composed of one part portland cement and two parts clean sand; the mixing liquid shall be straight bonding agent equivalent to "Acryl 60".

- E. Frames & Covers shall conform to the details shown on the project drawings.

**1.03 STONE BACKFILL:**

- A. Shall be #57 Stone

**1.04 SAND BACKFILL**

Shall be free from clay and organic material. Not more than 10% shall pass the No. 100 sieve.

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**1.05 BORROW:**

- A. Where it is determined by the Engineer that sufficient suitable material is not available from the site to satisfactorily backfill the pipe to at least 2 feet above the top of the pipe, the Contractor shall furnish suitable sandy borrow material to accomplish the requirements. The material shall have not more than 60% passing the No. 100 sieve, nor more than 20% passing the No. 200 sieve.

**PART 2 - EXECUTION & TESTING**

**2.01 LOCATION AND GRADE:**

- A. The line and grade of the sewer and ditches and the position of all manholes and other structures are shown on the drawings. The grade line as given on the profile or mentioned in these specifications means the invert or bottom of the inside of the pipe or bottom of ditch. The Contractor shall be responsible for the proper locations and grade of the sewers.

**2.02 EXCAVATION FOR PIPE:**

- A. Excavated material shall be piled a sufficient distance from the trench banks to avoid overloading to prevent slides or cave-ins.
- B. Remove from site all material not required or suitable for backfill.
- C. Grade as necessary to prevent water from flowing into excavations.
- D. Remove all water accumulating in the excavation from surface flow, seepage or otherwise, by pumping or other accepted method.
- E. Sheet piling, bracing or shoring as necessary for the protection of the work and safety of personnel.

**2.03 TRENCHING FOR PIPE:**

- A. Trenching for Pipe – Shall be as indicated on the drawings.
- B. Removal of Unstable Material - Where wet or otherwise unstable soil, incapable of supporting the pipe, as determined by the Engineer, is encountered in the bottom of the trench, such material shall be removed to the depth required and replaced to the proper grade with select material, compacted as provided in the paragraph "BACKFILLING PIPE", hereinafter.



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**2.04 BRACING AND SHEETING:**

- A. The sides of all trenches shall be securely held by stay bracing, or by skeleton or solid sheeting and bracing, as required by the soil conditions encountered, to protect the adjoining property and for safety. Where shown on the drawings or where directed by the Engineer, the Contractor must install solid sheeting to protect adjacent property and utilities. The sheeting shall be steel or timber and the Contractor shall submit design data, including the section modules of the members and the arrangement for bracing at various depths, to the Engineer for review before installing the sheeting. It shall penetrate at least 3 feet below the pipe invert. Sheeting shall be removed in units when the backfilling has reached the elevation necessary to protect the pipe, adjoining property and utilities.

When sheeting or shoring above the elevation cannot be safely removed, it shall be left in place. Timber left in place shall be cut off at least 2 feet below the surface. No separate payment shall be made for bracing and sheeting except where shown on the drawings or authorized by the Owner.

**2.05 BEDDING:**

- A. The bedding surface for the pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe. The trench bottom shall be dewatered before laying pipe by the use of well points. Where the nature of the soil is such that well points will not remove the water, the Contractor shall construct sumps and use sump pumps to remove all water from the bedding surface. The pipe shall be carefully bedded in a foundation that has been accurately shaped and rounded to conform to the lowest one-fourth (1/4) of the outside portion of circular pipe, or to the lower curved portion of arch pipe for the entire length of the pipe. When necessary, the bedding shall be tamped to compact it to 98% of optimum density. Bell holes and depressions for joints shall be only of such length, depth and width as required for properly making the particular type joint.
- B. Stone Backfill - Where, in the opinion of the Engineer, the subgrade of the pipe trench is unsuitable material, the Contractor shall remove the unsuitable material a minimum of six inches (6") deep and furnish and place stone backfill in the trench to stabilize the subgrade. The stone shall be 3/4-inch graded but variations in the gradation will be permitted upon acceptance by the Engineer. 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. Pipe shall be carefully bedded in the stone as specified above.

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**2.06 PLACING PIPE:**

- A. 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. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary. All pipe in place shall have been checked before backfilling. When storm drain pipe terminates in a new ditch, the headwall or end section together with ditch pavement, if specified, shall be constructed immediately as called for on the plans. Ditch slopes and disturbed earth areas shall be grassed and mulched as required. The Contractor will be responsible for maintaining these newly constructed ditches and take immediate action subject to acceptance to keep erosion of the ditch bottom and slopes to a minimum during the life of the contract. No additional compensation will be given to the Contractor for the required diversion of drainage and/or dewatering of trenches.

**2.07 JOINTS IN PIPES:**

- A. Concrete Pipe – Flexible watertight joint shall be made with rubber-type gaskets for concrete pipe. The design of joints and the physical requirements for rubber-type gaskets shall conform to ASTM Specification C-443 or AASHTO Standard M-198. Gaskets and jointing materials shall have not more than one splice, except that two splices of the rubber gaskets type will be permitted if the nominal diameter of the gasket exceeds 54-inches.
- B. Installation of Filter Fabric at Joint – After each joint is joined together, the Contractor shall place two layers of filter fabric around the joint a minimum width of four feet, centered on the joint.

**2.08 BACKFILLING PIPE:**

- A. After the bedding has been prepared and the pipe installed, select material from excavation or borrow, at a moisture content that will facilitate compaction, shall be placed along both sides of the pipe in layers not exceeding six-inches (6") in compacted depth. The backfill shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to insure thorough compaction of the fill under the haunches of the pipe. Each layer shall be thoroughly compacted with mechanical tampers or rammers. This method of filling and compaction shall continue until the fill has reached an elevation of at least 12-inches above the top of the pipe. The remainder of the trench shall be backfilled and compacted by spreading and rolling or compacted by mechanical tampers or rammers in layers not to exceed 8-inches. Soil density relations tests and moisture density relations tests may be performed by a testing firm or laboratory and shall be taken as directed in conformance with the compaction

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requirements specified in subparagraph "COMPACTION" hereinafter. Deficiencies shall be corrected by the Contractor without additional cost to the Owner. Where it is necessary in the opinion of the Owner, any sheeting and/or portions of bracing used shall be left in place. Untreated sheeting shall not be left in place beneath structures or pavements.

- B. For pipe placed in fill sections, the backfill material and the placement and compaction procedures shall be as specified above and in subparagraph "COMPACTION" hereinafter. The fill material shall be uniformly spread in layers longitudinal on both sides of the pipe, not exceeding six inches (6") in compacted depth, and shall be compacted by rolling parallel with pipe or by mechanical tamping or ramming. Prior to commencing normal filling operations, the crown width of the fill at a height of 12-inches above the top of the pipe shall extend a distance of not less than twice the outside diameter on each side of the pipe or 12 feet, whichever is less. After the backfill has reached at least 12-inches above the top of the pipe, the remainder of the fill shall be placed and thoroughly compacted in layers not exceeding 8-inches.
- C. In compacting by rolling or operating heavy equipment parallel with the pipe, displacement of or injury to the pipe shall be avoided. Movement of construction machinery over a culvert at any stage of the construction shall be at the Contractor's risk. Any pipe damaged thereby shall be repaired or replaced at the expense of the Contractor.

**2.09 COMPACTION:**

- A. Soil and compaction tests shall be made by a testing laboratory accepted by the Owner and shall be made at the Owner's direction and expense. Failed tests shall be rescheduled at the Engineer's direction and retesting shall be paid for by the Contractor. Laboratory tests of the soil shall be made in accordance with ASTM D-1556 or ASTM 2922. Results of the tests shall be furnished to the Owner, Engineer and Inspector by the testing laboratory.

The minimum number of tests required shall be:

Backfill over pipe under pavement and driveways: 1 per lift.

Backfill over pipe in areas to be grassed, sodded, or landscaped:  
1 per lift.

The minimum percent of compaction of the backfill material shall be the following:

Under pavement and driveways: 98% Standard (ASTM Test D-698) , Compact top 12" under pavement and top 4" under driveways to 100% standard.

In unpaved areas to be grassed, sodded, or landscaped: 90% Standard (ASTM D-698) full depth.

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**2.10 LEAKAGE:**

- A. All visible leaks shall be repaired, regardless of the amount of leakage.

**2.11 CLEANING:**

- A. Before acceptance of the sewer system it shall be tested and cleaned to the satisfaction of the Owner. Where any obstruction is met, the Contractor will be required to clean the sewers by means of rods and swabs or other instruments. The pipe line shall be straight and show a uniform grade between each end.

**2.12 REGRADE EXISTING DITCH:**

- A. Designated existing ditches shall be regraded and shaped to provide a bottom with a uniform slope, without depressions that hold water, and that conforms to the plan grades. The side slopes shall be smooth and uniform, dressed by hand if necessary, conforming to the indicated slopes.

**2.13 CONSTRUCT NEW DITCHES:**

- A. New ditches as shown on the construction drawings shall be graded and shaped to provide a bottom with a uniform slope, without depressions that hold water, and that conforms to the plan grades. The side slopes shall be smooth and uniform, dressed by hand if necessary, conforming to the indicated slopes. Ditches with side slope greater than 3:1 (Horizontal: Vertical) shall be stabilized by means of woven jute fabric engineered for erosion control and soil stabilization, or approved equal.

**END OF SECTION**

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**SECTION 03300  
CAST-IN PLACE CONCRETE**

**PART I - GENERAL**

**1.01 WORK INCLUDED:**

- A. Provide all cast-in place concrete, complete, in place, as indicated on the Drawings, specified herein, and required for the complete installation.

**1.02 RELATED WORK:**

- A. Standards: Comply with the latest provisions of the following Codes, Specifications and Standards except where additional or more stringent requirements are contained herein.

ACI 301 "Specifications for Structural Concrete".

ACI 311 "Guide for Concrete Inspection."

ACI 318 "Building Code Requirements for Structural Concrete."

ACI 347 "Guide to Formwork for Concrete."

ACI 304 "Guide for Measuring Mixing, Transporting and Placing Concrete."

Concrete Reinforcing Steel Institute:

"Placing Reinforcing Bars."

"Manual of Standard Practice."

Portland Cement Association: Design and Control of Concrete Mixtures.

American Society of Testing and Materials (ASTM)

American Association of State Highway Transportation Officials (AASHTO)

- B. Inspection: The Contractor shall plan his work so that time is allowed for the Engineer to inspect all embedded work prior to placement of concrete. The Contractor shall notify the Engineer of his intent to pour at least 48 hours prior to the time that he estimates the work will be ready for inspection. The Contractor shall not pour any concrete without approval of the Engineer.
- C. Workmanship: The Contractor is responsible for correction of concrete work which does

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not conform to the specified requirements, including strength tolerances and finishes. Correct deficient concrete as directed by the Engineer.

**D. Test for Concrete Materials:**

1. Portland Cement shall be sampled and tested to determine the properties in accordance with ASTM C 150.
2. Aggregates shall be sampled and tested in accordance with ASTM C 33 (normal weight) or ASTM C 330 (lightweight).

**E.** Submit written reports to the Engineer for each material sampled and tested, prior to the start of work. Provide the project identification name and number, date of report, name of contractor, name of concrete testing service, source of concrete aggregates, material manufacturer and brand name for manufactured materials, values specified in the referenced specification for each material, and test results. Indicate whether or not material is acceptable for intended use. All test reports shall not be older than 12 months and shall be from the exact same source as used for the job.

**F.** Supervision: All reinforced concrete construction shall be performed under the personal supervision of the contractor's superintendent. This superintendent shall keep a record of all concrete poured on the job. The record shall show in detail the area poured, the time and date of the pour and weather conditions which existed at the time of the pour. Upon completion of the work, this record shall be turned over to the Engineer.

**1.03 SUBMITTALS:**

**A.** General: Comply with provisions of General Conditions.

**B.** Manufacturer's Data; Concrete Work: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, and waterstops, to the Engineer.

**C.** Shop Drawings; Concrete Reinforcement:

1. Shop drawings shall be submitted by the Contractor to the Engineer and review action received prior to fabrication. When corrections are required, copies will be returned noting such. Drawings shall then be corrected and resubmitted until final review action is received. Coordination of shop drawings shall be such that corrections noted on one (1) sheet that affects another drawing will be transmitted and made on all sheets and resubmitted.

**2.** Shop drawings shall also include:

- a. Location of all proposed construction joints, keying and waterstops;
- b. Location of all openings, depressions, construction and control joints,

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trenches, sleeves, inserts and items affecting the reinforcement and placing of concrete.

3. The Contractor shall be responsible for checking quantities and dimensions in accordance with contract drawings. Where discrepancies in dimensions are noted, the Contractor shall notify the Engineer of such discrepancies and corrected dimensions will then be furnished by the Engineer. Corrected dimensions shall be reflected on shop drawings.
  4. Contract drawings receive precedence over shop drawings unless otherwise authorized in writing.
  5. Shop drawings furnished for reinforcing steel shall contain fabrication details as well as placement drawings which are to be used in conjunction with contract drawings.
  6. Detailing and fabrication of reinforcing shall conform to ACI. "Details And Detailing of Concrete Reinforcement" (ACI 315).
- D. Laboratory Test Results: Concrete work: Submit eight (8) copies of laboratory test results for concrete materials and mix design test as specified herein.

**1.04 PRODUCT HANDLING:**

- A. Protection: Protect the materials of this Section, before, during and after installation, and protect the work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements to the approval of the Engineer and at no additional cost to the Owner.

**PART 2 - PRODUCTS**

**2.01 FORM MATERIALS:**

- A. Forms for Exposed Finish Concrete: Unless otherwise shown on the drawings or specified herein, construct formwork for exposed surfaces with plywood, metal or metal-framed plywood faced, to provide continuous, straight, smooth, exposed surfaces. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.
- B. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces to be cured with water or curing compound.



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**2.02 REINFORCING MATERIALS:**

A. Reinforcing Bars:

1. Reinforcing: Size #3 to #18: ASTM A 615 "Standard Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement: Grade 60, Deformed.

B. Supports for Reinforcement:

1. General: Provide supports for reinforcement including bolsters, chairs and spacers for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise indicated on the drawings. Wood, brick or other devices will not be acceptable unless specifically noted herein.

**2.03 CONCRETE MATERIALS:**

A. Portland Cement: ASTM C 150, Type 1, unless otherwise specified by the Engineer. Use only one brand of cement throughout the project.

B. Normal Weight Aggregates: ASTM C 33, and as herein specified.

1. Local aggregates not complying with ASTM C 33 but which have shown by special test or actual service to produce concrete of adequate strength and durability may be used with prior approval by the Engineer.
2. Do not use aggregates containing soluble salts, iron sulphides, pyrite, marcasite or other which can cause stains on exposed concrete surfaces.
3. Dune sand, bank run sand and manufactured sand are not acceptable.
4. Coarse Aggregate: Clean, uncoated processed aggregate containing no clay, mud, loam, or foreign matter as follows:
  - a. Crushed stone, processed from natural rock or stone.
  - b. Washed gravel, either natural or crushed. Use of pit or bank run gravel is not permitted.
  - c. Maximum Aggregate Size: Not larger than one-fifth of the narrowest dimension between sides of forms, one-third of the depth of slabs, nor three-fourths of the minimum clear spacing between individual reinforcing bars or bundles of bars not over 1" in maximum size except for block fill where maximum size shall not exceed 1/2".

These limitations may be waived if, in the judgment of the Engineer,

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workability and methods of consolidation are such that concrete can be placed without honeycomb or voids.

- C. Lightweight Aggregates: ASTM C 330.
- D. Water: Clean, fresh, drinkable. ASTM C 94
- E. Air Entrained Admixture: ASTM C 260.
- F. Water Reducing Admixture: ASTM C 494, as follows:
  - Type A, Standard Water Reducing
  - Type B, Retarding
  - Type C, Acceleration
  - Type D, Water-reducing and retarding
  - Type E, Water-reducing, and Accelerator (Non-corrosive)
  - Type F or G, High Range Water Reducing (Max. 1% Chloride Ions)
- G. Calcium Chloride: Calcium Chloride will not be permitted in concrete.

**2.04 RELATED MATERIALS:**

- A. Waterstops: Provide serrated type, flat dumbbell type or center bulb type waterstops at construction joints as shown on drawings. Size to suit joints. Waterstops shall be polyvinyl chloride (PVC); Corps of Engineers CRD- C 572.
- B. Preformed Expansion Joint Filters: Premolded fillers shall meet "Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction", ASTM D 1751.
- C. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 3.
- D. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
  - Waterproof Paper
  - Polyethylene Film
  - Polyethylene-coated Burlap
- E. Membrane-Forming Curing Compound: Fed. Spec. TT-C-800A, 30% solids content minimum.

**2.05 PROPORTIONING AND DESIGN OF MIXES:**

- A. Design Mixes: Prepare design mixes for each type and strength of concrete in

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accordance with provisions of ASTM C 94. Use an independent testing facility approved by the Engineer for preparing and reporting proposed mix designs. The mix design shall not be less than 12 months old and use the exact same materials that will be installed.

- B. Shop Drawings: Submit mix designs to the Engineer of each proposed mix for each class of concrete for review. Do not begin concrete production until mixes have been approved by the Engineer. Shop drawings for each proposed mix design shall include the following items:

1. All information to be filled in of the concrete suppliers data sheet.
2. Copies of past test results where the proposed mix has been used. The mix design on the test result form shall match the mix design number of the concrete manufacturers data sheet.
3. Material certification letters for the various components of the concrete mix with current dates.

- C. Minimum Properties: Design mixes to provide normal weight concrete with the following properties:

1. Concrete: 4000 psi 28-day compressive strength. Air entrained.

- D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, at no additional cost to the Owner and as accepted by the Engineer before using in the work. If adjustments need to be made a new mix design must be submitted and approved by the Engineer prior to use.

- E. Admixtures:

1. Use air entraining admixture in exposed concrete, unless otherwise indicated on the drawings. Add air-entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having total air content by volume of 3.5% to 6.5%.
2. Use admixtures for water-reducing and set-control in compliance with the manufacturer's directions and when specifically approved by the Engineer.

- F. Slump Limits: Proportions and design mixes to result in concrete slump at the point of placement as follows:

1. Reinforced foundation systems: not less than 1" and not more than 4".
2. Reinforced concrete walls: Not less than 1" and up to 8" with a water reducing

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admixture.

3. All other concrete: not less than 1" and not more than 4".

**G. Water Cement Ratio:**

1. Provide concrete for the following conditions with maximum water-cement (WC) ratios as follows:

Subjected to brackish water, salt, spray or deicers; WC 0.40

**2.06 CONCRETE MIXING:**

**A. Ready-Mix Concrete** Comply with the requirements of ASTM C 94, and as herein specified.

1. Addition of water to batch at the jobsite will not be permitted.
2. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be used. When the air temperature is between 85-90 degrees fahrenheit, reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees fahrenheit, reduce the mixing and delivery time to 60 minutes.
3. Reduce placement time to 45 minutes when super plasticizers are used.

**PART 3 - EXECUTION**

**3.01 INSPECTION:**

- A. General:** Examine the areas and conditions under which work of the section will be performed. Correct conditions detrimental to the completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

**3.02 FORMS:**

**A. General:**

1. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by the concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment elevation and position. The design and engineering of all formwork as well as its construction shall be the responsibility of the contractor.
2. Formwork to be readily removable without impact, shock or damage to

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cast-in-place concrete surfaces and adjacent materials.

3. Earth cuts shall not be used as forms for vertical surfaces.

**B. Construction**

1. Construct forms complying with ACI 347, to sizes, shapes, lines and dimensions shown on the drawings, and to obtain accurate alignment, location, grades, levels and plumb work in finished structure. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts. Use selected materials to obtain finishes. Butt joints and provide back-up at joints to prevent leakage of cement paste.
2. Fabricate forms for easy removal without hammering or prying against the concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Use wood inserts for forming keyways, reglets, recesses that prevent swelling and for easy removal.
3. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Brace temporary openings and set to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.
4. Chamfer exposed corners and edges as shown on the drawings, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

**C. Form Ties: Factory fabricated, adjustable length, removable or snap-off-metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.**

1. Unless otherwise shown on the drawings, provide ties so portion remaining within concrete after removal is at least 1 1/2" inside concrete.
2. Unless otherwise shown on the drawings, provide form ties which will not leave holes larger than 1" diameter in concrete surfaces.

**D. Cleaning and Tightening: Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt and debris just before concrete is placed. Retighten forms after concrete placement to eliminate mortar leaks.**

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**3.03 PLACING REINFORCEMENT:**

- A. General: Comply with the specified codes and standards, and Concrete Reinforcing Steel Institute's Recommended Practice for "Placing Reinforcing Bars", latest edition for details and methods of reinforcement placement and support, and as herein specified.
- B. Procedure:
  - 1. Clean reinforcement of loose rust and mill scale, earth, ice and materials which reduce or destroy bond with concrete.
  - 2. Position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers.
  - 3. Do not place reinforcement bars more than 2" beyond the last leg of continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and construction loads.
  - 4. Welding of reinforcing bars or welded wire fabric is strictly prohibited.
- C. Splices: No splicing at points of maximum stress. All reinforcing steel shall be placed and wired before concrete operations start.
- D. Embedment of Steel: Control embedment by use of standard chairs. Concrete cover over steel shall be as follows unless specifically noted on drawings:
  - 1. Concrete against ground, without use of forms shall be 3".
  - 2. Concrete exposed to ground or weather, poured against forms, 2" .
  - 3. In all cases, concrete cover over steel shall be at least equal to the diameter of the Steel.

**3.04 JOINTS:**

- A. Construction Joints: Locate and install construction joints, which are not shown on the drawings, so as not to impair the strength and appearance of the structure.
  - 1. Provide keyways at least 1-1/2" deep in all construction joints in walls, slabs and between walls and footings; accepted bulkheads designed for this purpose may be used for slabs.
  - 2. Place construction joints perpendicular to the main reinforcement. Continue all

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reinforcement across construction joints.

- B. Waterstops: Provide waterstops in construction joints as shown on drawings. Install waterstops to form a continuous diaphragm in each joint. Make provisions to support and protect waterstops during the progress of work. Fabricate field joints in waterstops in accordance with manufacturer's printed instructions. Protect water stop material from damage where it protrudes from any point.
- C. Sawed or Tooled Weakened Plane (Dummy) Joints: Joint to be 1" to 1-1/4" deep constructed when concrete has hardened sufficiently so it will not ravel or spawl when joint formed.

**3.05 PREPARATION OF FORM SURFACES:**

- A. General: Coat the contact surfaces of forms with a form-coating compound before reinforcement is placed.
- B. Form-Coating Compounds: Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of the form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in the forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
- C. Steel Formed Surfaces: Coat steel forms with a non-staining, rust preventative form oil. Rust-stained steel formwork is not acceptable.

**3.06 CONCRETE PLACEMENT:**

- A. Placement Inspection: Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit the installation of their work; cooperate with other trades in setting such work. Wet wood forms immediately before placing concrete where form coatings are not used. All formwork and reinforcing shall be accepted by the Engineer or his representative prior to placing concrete.
  - 1. Coordinate the installation of joint materials with placement of forms and reinforcing steel.
- B. General: Comply with ACI 304, and as herein specified.
  - 1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause to formation of seams or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or

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flowing.

- C. **Placing Concrete in Forms:** Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consist of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand- spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309 to suit the type of concrete and project conditions. "Jitterbugging" will not be permitted.
2. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the placed layer and at least 6" into the preceding layer. Do not insert vibrator into lower layers of concrete that have begun to set. At each insertion limit the duration of vibration to the time necessary to consolidate the concrete and complete embedment of reinforcement and other embedded items without causing segregation of the mix.
3. When placing concrete with a high slump into wall forms the slump shall be decreased accordingly as the concrete pour progresses up the wall.

- D. **Cold Weather Placing:**

1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306.1 and as herein specified.
2. When air temperature has fallen to or is expected to fall below 40 degrees fahrenheit, uniformly heat all water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees Fahrenheit, and not more than 80 degrees fahrenheit at point of placement.
3. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
4. Do not use calcium chloride, salt, and materials containing antifreeze agents.

- E. **Hot Weather Placing:**

1. When hot weather conditions exist that would impair the quality and strength of concrete, place concrete in compliance with ACI 305R and as herein specified.



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2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees fahrenheit. Mixing water may be chilled, or chopped ice may be used to control the concrete temperature provided the water equivalent of the ice is calculated to the total amount of mixing. Concrete above 90 degrees Fahrenheit shall be rejected.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
4. Wet forms before placing concrete.
5. Do not use retarding admixtures unless otherwise accepted in approved mix designs.

**3.07 CONCRETE FINISHING:**

All exposed to view surfaces shall have a smooth form finish and smooth rubbed finish.

**A. Finish of Formed Surfaces:**

**1. Rough Form Finish:**

- a. Provide as-cast rough form finish to formed concrete surfaces that are to be concealed in the finish work or by any other construction.
- b. Standard rough concrete shall be concrete surface having the texture imparted by the form facing material used, with tie holes and defective areas repaired and patched, and all fins and projections exceeding 1/4" in height rubbed down or chipped off.

**2. Smooth Form Finish:**

- a. Provide as-cast smooth form finish for formed concrete surfaces that are to be exposed to view, or that are to be covered with a coating material other than cement plaster applied directly to the concrete.
- b. Produce smooth form finish by selected form material to impart a smooth, hard, uniform texture and arraigning them with a minimum of seams.
- c. Repair and patch defective areas with all fins and projections removed and smoothed.

**3. Smooth Rubbed Finish: Provide smooth rubbed finish to scheduled concrete**

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surfaces left uncoated and which have received Smooth Form Finish treatment, not later than one day after form removal. Moisten concrete surfaces and rub with carborundum brick or abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.

4. **Related Uniformed Surfaces:** At tops of walls and horizontal offsets, occurring adjacent to formed surfaces, strike off smooth and finish with a smooth troweled finished. Continue final surface treatment of formed surfaces uniformly across adjacent uniformed surfaces, unless otherwise shown on the drawings.

**3.08 CONCRETE CURING AND PROTECTION:**

- A. **General:** Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time for hydration on cement and hardening. All concrete shall be maintained between 50 and 70°F when the outdoor temperature is or is expected to be 40°F or less at anytime during the daylight or nighttime hours. The phrase "mean daily outdoor temperature is less than 40°F" will not be used.
  1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours.
  2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing at least seven (7) days in accordance with ACI 308-92 procedures. Avoid rapid drying at end of final curing period.
- B. **Curing Methods:** Perform curing of concrete by moist curing, by moisture-retaining cover curing, by membrane curing, and by combinations thereon, as herein specified. Flooding structure from water in the canal will not be allowed.
  1. Provide moisture curing by following methods:
    - a. Keep concrete surface continuously wet by covering with water.
    - b. Continuous water-fog spray.
    - c. Covering concrete surface with specified absorptive cover, saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.
  2. Provide moisture-covering curings as follows:

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- a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- 3 Provide membrane curing as follows:
  - a. Apply membrane-forming curing compound to concrete surfaces as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas which are subjected to heavy rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - C. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams and supported slabs, by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above.

**3.09 SHORES AND SUPPORTS:**

- A. General: Comply with ACI 347 for shoring and reshoring and as herein specified.
- B. Removal: Remove shores and reshore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate reshoring to support the work without overstress or exceeding limiting deflection.
- C. Reshores: Keep reshores in place a minimum of 15 days after placing, or longer, until the concrete has attained its required 28-day strength and any heavy loads due to construction operations have been removed. All cantilevers are to remain reshored for a minimum of 28 days.

**3.10 REMOVAL OF FORMS:**

- A. Non-Load Supporting Forms: Formwork not supporting weight of concrete, such as sides of beams, walls and columns, may be removed after cumulatively curing at not less than 50 degrees Fahrenheit for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- B. Load Supporting Forms: Formwork supporting weight of concrete, beam soffits, joints, slabs, and structural elements, may not be removed until concrete has reached a minimum of 75% of the design 28-days strength. Reshore concrete until it has attained design minimum compressive strength. Determine potential compressive strength of in-

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place concrete by testing field-cured specimens representative of concrete location or members. Additional concrete test cylinders may be taken by the testing lab at the request of the contractor. The contractor shall bear all costs for the preparation and testing of extra concrete cylinders.

- C. Form Facings: Form facing material may be removed four (4) days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

**3.11 RE-USE OF FORMS:**

- A. Clean and repair surfaces of forms to be re-used in the work. Split, frayed, delaminated or damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact form surface as specified for new formwork.
- B. When forms are extended for successive concrete placement, clean surfaces, remove fins and laitances, and tighten forms to close joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to Engineer.

**3.12 MISCELLANEOUS CONCRETE ITEMS:**

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown on the drawings or directed by the Engineer, after work of other trades is in place. Mix, place and cure concrete as herein specified to blend with in-place construction. Provide other miscellaneous concrete filling shown on the drawings to complete work.

**3.13 CONCRETE SURFACE REPAIRS:**

- A. The repairs outlined in this Section are to only be used in the event that any areas need to be repaired in the opinion of the Engineer after form work is removed. The repairs in this section in no way relieve the contractor of his responsibility to properly form and place the concrete as outlined in the plans and specifications. The contractor shall make every effort to prevent having to make repairs to newly poured concrete. The contractor shall bear all time and expense associated with repairs. All concrete repairs shall be at the discretion of the Engineer.
- B. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms.
  - 1. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods, and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar or proprietary patching compound, clean, dampen with water and

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brush coat the area to be patched with neat cement grout, or proprietary bonding agent.

2. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surfaces.

C. **Repair of Formed Surfaces:** Remove and replace concrete having defective surfaces if defects cannot be repaired to the satisfaction of the Engineer. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and projections on surface; and stains and discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces that contain defects that adversely affect the durability of the concrete. If defects cannot be repaired, remove and replace with concrete.

**3.14 TESTING:**

A. Field sampling and testing shall be performed by an independent testing lab hired and paid for by the **Owner**. Samples of concrete shall be taken at random locations and at such times to represent the quality of the materials and work throughout the project. The laboratory shall provide the necessary labor, materials, equipment, and facilities for sampling the concrete and for casting, handling and storing the concrete samples at the site of work. Sampling of plastic concrete will be in accordance with ASTM C172. Samples for pumped concrete shall be taken at the hose discharge point. Samples for other concrete shall be taken at the hopper of concreting equipment or transit mix truck.

B. The Contractor shall pay for the following services when required:

1. All testing, test results, or certifications required to verify that a proposed material item or mix design meets the requirements of the specifications.
2. Additional testing and inspection required because of changes in materials or proportions requested by the Contractor.
3. Additional testing of materials or concrete occasioned by their failure by test or inspection to meet specification requirements. For example, if compressive test results indicate concrete in place may not meet structural requirements, tests shall be made to determine if the structure or portion thereof is structurally sound. Tests may include, but not be limited to, cores in accordance with ASTM C 42 and any other load tests acceptable to the Engineer. Costs of such tests will be

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borne by the Contractor.

- C. To facilitate testing and inspection, the Contractor shall advise the Owner, Engineer, and the designated testing agency a minimum of 48 hours in advance of operations to allow for the assignment of personnel and for the completion of quality tests and inspection of forms.
- D. **STRENGTH TESTS**
1. General: The strength of the concrete will be verified by the testing laboratory during placement of the concrete. Verification shall be accomplished by testing standard cylinders of concrete samples taken at the job site.
  2. Frequency: As a minimum, one set of four standard cylinders shall be cast of each class of concrete based on the most stringent of the following requirements as applicable:
    - for each 50 cubic yards or less
    - for each 4000 square feet of surface area
    - for each day a pour is made
  3. Lab testing: Testing of specimens for compressive strength shall be in accordance with ASTM C39. Tests shall be made at 7 and 28 days from time of casting. Two test cylinders from each group of four shall be tested at the end of 7 days and two shall be tested at the end of 28 days. Each strength test result shall be the average of the strengths of two test cylinders (cast from material taken from a single load of concrete) at 28 days.
- E. **Slump Tests:** The slump shall be as specified when measured in accordance with ASTM C 143. Samples for slump determination shall be taken from the concrete during placing. Tests shall be made at the beginning of concrete placing operations and at subsequent intervals to insure that the specification requirements are met. When concrete is pumped, slump tests shall be taken from concrete at the discharge end of the pump hose. Slump tests shall also be performed whenever standard cylinders are cast.
- F. **Temperature and Air Content Tests:** Temperature tests shall be made at frequent intervals during hot or cold weather conditions until satisfactory temperature control is established. Whenever standard cylinders are cast, temperature tests shall be performed. Air content tests shall be in accordance with ASTM C 231 and shall be measured whenever standard cylinders are cast.

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**3.15 FLOWABLE FILL:**

- A. The mixture of dry material per cubic yard shall be 50 pounds cement, 600 pounds fly-ash, and 2,500 pounds sand. Depending on the slump requested for the specific job, water added shall be 65 gallons for a 6-inch slump, to 55 gallons for a 3-inch slump. One cubic yard of 6-inch slump will contain more than 27 cubic feet due to the additional water. Unconfined compressive strength will be 80 psi at 7 days and 150 psi at 28 days.

END OF SECTION 3300

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 **Sugar Tree Court East and West Street 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

(herein after

"Company"),

Title

Name of Bidder

in consideration of the privilege to bid/or propose on the following

Chatham County project procurement Sugar Tree Court East and West Street 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.  

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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.  

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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.  

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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 \_\_\_\_\_

2008 by \_\_\_\_\_ representing him/herself to be

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

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

My Commission expires:

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

## Attachment D

### IMMIGRATION AND SECURITY FORM

SB529 (The Ga Security and Immigration and Compliance Act) requires contractors to file an affidavit that the contractor and its subcontractors have registered and participate in a federal work authorization program intended to insure that only lawful citizens or lawful immigrants are employed by the contractor or subcontractor. This requirement of SB529 is a phased-in affidavit filing requirement based on the size of the contractor. Contractors with 500 or more employees are required to file an affidavit of compliance beginning 7/1/07. However, because the requirement is set forth in OCGA 13-10-91 which is a part of Chapter 10 of Title 13 governing public works contracts, the affidavit filing requirements of SB529 therefore only apply to public works contracts.

A. In order to insure compliance with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act OCGA 13-10-90 et.seq., Contractor must initial one of the sections below:

\_\_\_\_\_ Contractor has 500 or more employees and Contractor warrants that Contractor has complied with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act by registering at <https://www.vis-dhs.com/EmployerRegistration> and verifying information of all new employees; and by executing any affidavits required by the rules and regulations issued by the Georgia Department of Labor set forth at Rule 300-10-1-.01 et.seq.

\_\_\_\_\_ Contractor has 100-499 employees and Contractor warrants that no later than July 1, 2008, Contractor will register at <https://www.vis-dhs.com/EmployerRegistration> to verify information of all new employees in order to comply with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act; and by executing any affidavits required by the rules and regulations issued by the Georgia Department of Labor set forth at Rule 300-10-1-.01 et.seq.

\_\_\_\_\_ Contractor has 99 or fewer employees and Contractor warrants that no later than July 1, 2009, Contractor will register at <https://www.vis-dhs.com/EmployerRegistration> to verify information of all new employees in order to comply with the Immigration Reform and Control Act of 1986 (IRCA), D.L. 99-603 and the Georgia Security and Immigration Compliance Act; and by executing any affidavits required by the rules and regulations issued by the Georgia Department of Labor set forth at Rule 300-10-1-.01 et.seq.

B. Contractor warrants that Contractor has included a similar provision in all written agreements with any subcontractors engaged to perform services under this Contract.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

Firm Name: \_\_\_\_\_

Street/Mailing Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Attachment E

CONTRACTOR AFFIDAVIT AND AGREEMENT

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

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

EEV / Basic Pilot Program\* User Identification Number

BY: Authorized Officer or Agent  
(Contractor Name)

Date

Title of Authorized Officer or Agent of Contractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE

\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_

Notary Public

My Commission Expires:

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

## SUBCONTRACTOR AFFIDAVIT

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

\_\_\_\_\_  
EEV / Basic Pilot Program\* User Identification Number

\_\_\_\_\_  
BY: Authorized Officer or Agent  
(Subcontractor Name)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title of Authorized Officer or Agent of Subcontractor

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

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE

\_\_\_\_ DAY OF \_\_\_\_\_, 200\_\_

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

My Commission Expires:

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

ATTACHMENT F

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 voluntarily excluded from participation in this transaction by any Federal department or agency, State of Georgia, City of Savannah, Board of Education of 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

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**Attachment G**

**Chatham County  
Minority and Women Business Enterprise Program  
M/WBE Compliance 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 (\_\_\_\_) \_\_\_\_\_



# # 1

## 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.

# 2

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.

### # 3

#### 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.

LEGAL NOTICE

CC NO. 164491

Invitation to Bid

Sealed Bids will be received until 2:00 P.M. on JUNE 15, 2011 and publicly opened in Chatham County Purchasing & Contracting Department, at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia, for: BID NO : 11-10-5-4 SUGAR TREE COURT EAST AND WEST STREET DRAINAGE IMPROVEMENTS.

PRE-BID CONFERENCE: 2:00 P.M., JUNE 1, 2011. A Pre-Bid Conference will be held at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia. You are encouraged to attend this conference.

Bid Packages and Plan sheets are available and must be purchased from Clayton Digital Reprographics (CDR) located at 1000-I Eisenhower Drive, Savannah, Georgia, 31406. CDR phone: 912-352-3880, fax 912-352-3881, e-mail: [cdrsouth@cdrepro.com](mailto:cdrsouth@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>

Bid Bond shall be 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"

  
\_\_\_\_\_  
WILLIAM R. PARSON, CPPO, PURCHASING AGENT

SAVANNAH NEWS/PRESS INSERT: May 17, May 30, 2011

Please send affidavit to:  
Chatham County Purchasing & Contracting Department  
P.O. Box 15180  
Savannah, Georgia 31416  
(912) 790-1622