

INVITATION TO BID
PROPOSAL

BID NO. 10-12-4-4

KINGS FERRY PARK IMPROVEMENTS

PREBID CONF: 2:00PM, JULY 14, 2010

BID OPENING: 2:00PM, JULY 28, 2010

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.**

☒ GENERAL INFORMATION AND INSTRUCTIONS TO BID WITH ATTACHMENTS

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

☒ PROPOSAL

☐ PLANS/DRAWINGS - (Plans and Specifications are available and must be purchased at the Purchasing Department for \$50 non-refundable)

☒ BID SCHEDULE

☐ PERFORMANCE BOND - UPON AWARD OF CONTRACT

☐ PAYMENT BOND - UPON AWARD OF CONTRACT

☐ CONTRACT

☒ LEGAL NOTICE

☒ AFFIDAVIT OF PAYMENT

☒ 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: **June 22, 2010**

BID NO. 10-12-4-4

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, JULY 28, 2010** 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 Purchasing & Contracting Office located at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia, at 2:00PM, JULY 14, 2010** to discuss the specifications and resolve any questions and/or misunderstanding that may arise. You are encouraged to attend.

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

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

This project is 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.

**** 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.
- e. Contractor will provide an affidavit, with each pay request, certifying whether he **and his subcontractors**, for the specified period, have complied with the County required payment of prevailing wage as defined by the U.S. Department of Labor.

2.21 Not Used.

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

ADDITIONAL CONDITIONS

- 3.1 **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 10-12-4-4. 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 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 **\$500** for each calendar day in excess of the authorized construction time.

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

- ☒ **A. Such bidder shall post a bid bond, certified check or money order made payable to the Chatham County Finance Department in the amount of 5% of the bid price.**
- ☒ **B. Contractor(s) shall 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;
- 3.4 **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.

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 if he/she fails to enter a contract with Chatham County as stated in (B) above, within fifteen (15) days of the date on which he/she is awarded the bid, and/or;
- E. Forfeit the amount of the Performance Bond if he/she fails to execute and fulfill the terms of the contract entered. The amount of forfeiture shall be:
 - 1. The difference between his/her bid and the next lowest, responsible bid that has not expired or been withdrawn, or;
 - 2. The difference between his/her bid and the amount of the lowest, responsible bid received as a result of rebidding, including all costs related to rebidding.

COMPANY

DATE

SIGNATURE

TITLE

TELEPHONE NUMBER

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 15 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 F).**
- 8. SUBMIT A COPY OF YOUR *STATE OF GEORGIA CONTRACTORS LICENSE*.**

NAME / TITLE

COMPANY

ADDRESS

PHONE / FAX NO'S.

PROPOSAL

SPECIFICATIONS FOR:

KINGS FERRY PARK IMPROVEMENTS

BID NO. 10-12-4-4

The project is located on the west side of Ogeechee Road between Larchmont Drive and Berwick Boulevard in unincorporated Chatham, County.

The work consists of making improvements to the existing Kings Ferry Park which includes the installation of pavement and signage, drainage, and erosion and sediment control. This will require the installation of approximately 104,000 SF of parking area and all items to support it as shown in the plans and specifications. The construction shall be done in accordance with the plans and specifications as well as the ADA Standards for Accessibility, Appendix A, Part 36.

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 FOR THIS PROJECT MUST BE ACCOMPLISHED WITHIN 150 CALENDAR DAYS.

KINGS FERRY PARK IMPROVEMENTS

BID NO. 10-12-4-4

BID SHEETS

SECTION I - EARTHWORK & SITEWORK

Item No.	Description	Quantity	Units	Unit Price	Cost
1	Grading	1	L.S.		

EARTHWORK & SITEWORK SUBTOTAL:

SECTION II - DEMOLITION

Item No.	Description	Quantity	Units	Unit Price	Cost
1	Relocate Ex. Guy Wire	1	L.S.		
2	Remove Ex. Wooden Park Sign (As shown on plan)	1	L.S.		
3	Remove Ex. Timber Pole Fencing (As shown on plan)	1	L.S.		
4	Remove Ex. Trees (As shown on plan)	9	EA.		
5	Remove Ex. Concrete	210	S.Y.		
6	Remove Ex. Handicap Signs	1	L.S.		
7	Remove Ex. Asphalt and Base Material	3,600	S.Y.		
8	Remove Ex. 12x12 Post and Cable Fencing	1	L.S.		
9	Remove Ex. 18" RCP	1	L.S.		
10	Fill Ex. 18" RCP with Flowable Fill	2	EA.		
11	Fill Ex. Grate Inlet with Concrete	1	EA.		

DEMOLITION SUBTOTAL:

SECTION III - PAVEMENT AND SIGNAGE

Item No.	Description	Quantity	Units	Unit Price	Cost
1	1.5" Asphaltic Concrete Surface Course	11,600	S.Y.		
2	7.5" Granite GAB	11,600	S.Y.		
3	24" Suitable Subgrade Material	7,700	C.Y.		
4	Prime Coat	11,600	S.Y.		
5	6' Sidewalks	3,700	S.F.		
6	Flush Header Curb	1,727	L.F.		
7	Pitched Curb and Gutter	1,088	L.F.		
8	Standard Curb and Gutter	850	L.F.		
9	Proof Roll	12	HR.		
10	Handicap Signs	10	EA.		
11	"No Parking" Signs	4	EA.		
12	"Do Not Enter" Signs	3	EA.		
13	"One Way" Signs	2	EA.		
14	Stop Signs	5	EA.		
15	"No Right Turn" Signs	1	EA.		
16	Pedestrian Crosswalks	2	EA.		
17	Striping	1	L.S.		
18	Type A H/C Ramps w/detectable warning	4	EA.		
19	Type B H/C Ramps w/detectable warning	1	EA.		
20	24" Stop Bars	5	EA.		
21	Detectable Warning Surfaces	4	EA.		

PAVEMENT AND SIGNAGE SUBTOTAL:

SECTION IV - DRAINAGE

Item No.	Description	Quantity	Units	Unit Price	Cost
1	Grass Swale	1,051	L.F.		
2	20' Width Grass Filter Strips	990	L.F.		
3	15' Width Grass Filter Strips	350	L.F.		
4	10' Rip-Rap Lined Weir	2	E.A.		
5	Stormwater Pocket Wetland	2	E.A.		
6	Remove Ex. Temp HDPE and 8' Sidewalk Section	1	L.S.		
7	Intersection Swale	60	L.F.		
8	18" Class IV RCP	63	L.F.		
9	18" FES	2	E.A.		
10	Gravel Bedding	7	C.Y.		
11	Select Backfill	21	C.Y.		
DRAINAGE SUBTOTAL:					

SECTION V - SOIL AND EROSION CONTROL

Item No.	Description	Quantity	Units	Unit Price	Cost
1	Type A Silt Fence (Sd1-A)	1,080	L.F.		
2	Type C Silt Fence (Sd1-C)	2,150	L.F.		
3	Rip-Rap (St)	41	S.Y.		
4	Tree Protection	800	L.F.		
5	Dust Control (Du)	15,020	S.Y.		
6	Temporary Seeding (Ds1/Ds2)	15,020	S.Y.		
7	Construction Exit (Co)	1	E.A.		
8	Retrofit (Rt-B)	2	E.A.		
9	Check Dams (Cd)	1	E.A.		
10	Filter Ring (Fr)	1	E.A.		
11	Permanent Vegetation (Ds3)	15,020	S.Y.		
SOIL AND EROSION CONTROL SUBTOTAL:					

SECTION VI - MISCELLANEOUS ITEMS

Item No.	Description	Quantity	Units	Unit Price	Cost
1	Rope Fence with Wooden Pylons	1	L.S.		
2	Wooden Boardwalks	3	E.A.		
3	Wheel Stops	25	E.A.		
4	6" Pipe Bollards	4	E.A.		
5	Landscaping*	1	L.S.		
MISCELLANEOUS SUBTOTAL:					

* This description includes the items listed below in addition to the general landscaping:

Plantings for Pocket Wetlands
Non-Netted Hay Mats
Moving of Playground

EARTHWORK AND SITEWORK SUBTOTAL
DEMOLITION SUBTOTAL
PAVEMENT AND SIGNAGE SUBTOTAL
DRAINAGE SUBTOTAL
SOIL AND EROSION CONTROL SUBTOTAL
MISCELLANEOUS SUBTOTAL

TOTAL

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]

TOTALS

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 **KINGS FERRY**
PARK 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 KINGS FERRY PARK IMPROVEMENTS hereby consent, covenant and agree as follows:

(1) No person shall be excluded from participation in, denied the benefit of or otherwise discriminated against on the basis of race, color, national origin or gender in connection with the bid submitted to Chatham County or the performance of the contract resulting therefrom;

(2) That it is and shall be the policy of this Company to provide equal opportunity to all business persons seeking to contract or otherwise interested with the Company, including those companies owned and controlled by racial minorities, and women;

(3) In connection herewith, I (We) acknowledge and warrant that this Company has been made aware of, understands and agrees to take affirmative action to provide minority and women owned companies with the maximum practicable opportunities to do business with this Company on this contract;

(4) That the promises of non-discrimination as made and set forth herein shall be continuing throughout the duration of this contract with Chatham County;

(5) That the promises of non-discrimination as made and set forth herein shall be and are hereby deemed to be made a part of and incorporated by reference in the contract which this Company may be awarded;

(6) That the failure of this Company to satisfactorily discharge any of the promises of non-discrimination as made and set forth above may constitute a material breach of contract entitling the County to declare the contract in default and to exercise appropriate remedies including but not limited to termination of the contract.

Signature

Date

Attachment C

DISCLOSURE OF RESPONSIBILITY STATEMENT

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

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

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

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

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

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

-
6. List any contracts not completed on time.

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

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

_____, 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 Georgia 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.

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

(Printed or typed Name of Signatory)

(Signature)

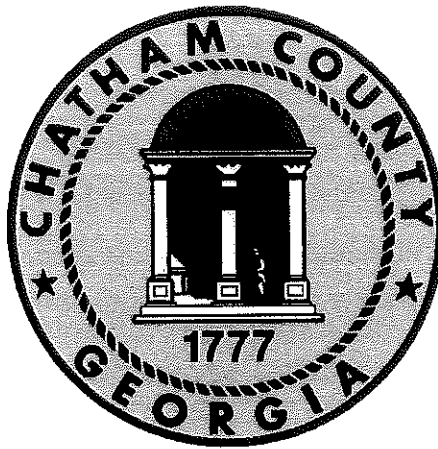
(Date)

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

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

**BID PACKAGE
IMPROVEMENTS TO KINGS FERRY PARK**

PREPARED FOR: CHATHAM COUNTY ENGINEERING DEPARTMENT



PREPARED BY: KERN-COLEMAN, CO. LLC.



March 9, 2010

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TAKEOFF AND ESTIMATE

MEASUREMENT AND PAYMENT

Specification Information for Improvements to Kings Ferry Park

Project Name: Improvements to Kings Ferry Park.

Project Summary:

The project consists of making improvements to the existing Kings Ferry Park which includes the installation of pavement and signage, drainage, and erosion and sediment control. This will require the installation of approximately 104,000 S.F. of parking area and all items to support it as shown in the approved plans and specifications. The construction shall be done in accordance with the standards and specifications provided for this project as well as the ADA Standards for Accessibility, Appendix A, Part 36.

Technical Specifications:

The construction shall be done in accordance with the Standards and Specifications provided for this project and meet all ADA Standards for Accessibility, Appendix A, Part 36.

SECTION 02200
EXCAVATION, FILLING AND GRADING

PART 1 - GENERAL

1.01 SUMMARY

This Section specifies the requirements for the following:

- A. Excavation required for structures and roadways.
- B. Dewatering
- B. Shoring, sheeting and bracing as required.
- D. Wasting and disposal of excess or unsuitable materials.
- E. Furnishing and placing borrow material.
- F. Furnishing and placing granular foundation material.
- G. Subgrade preparation.
- H. Compaction.
- I. Site grading.

1.02 EXISTING CONDITIONS

Soils information provided by the Owner is for reference only. The Contractor shall make his own determination of the soils and conditions on site. The Contractor shall accept the site in its existing condition, and shall assume the risk of encountering whatever materials as may occur.

PART 2 - MATERIALS

2.01 EARTH FILL

Earth fill, including pavement subgrades, shall consist of all suitable materials from required excavations. Suitable materials for earth fill shall generally be composed of sands, clay-sand mixtures and silt-sand mixtures. Clay-sand and silt-sand mixtures shall be approved by the soil technician prior to being incorporated in fills. Clays, silts, and organic soils will be considered as unsuitable materials.

2.02 EXCAVATED MATERIALS

Suitable materials from on-site excavations shall be used in the permanent construction required under these Specifications. Suitable materials shall be excavated separately from materials to be wasted and the suitable materials shall be segregated by loads during the excavation operations and shall be placed in temporary stockpiles and later placed in the designated locations. Excavated materials, which, after drainage, are suitable for fill but which, when excavated, are too wet for immediate compaction shall be placed temporarily in stockpiles until the moisture content is reduced sufficiently to permit them to be placed in the earth fills.

2.03 UNSUITABLE MATERIAL

Where material encountered is unsuitable for subgrade construction of roads, sidewalks, curb and gutter and other structures, the material shall be excavated to the required depth of compaction (generally two feet below pavement base course or finished floor elevation), disposed of off the site and property of the Owner and replaced with suitable material. Unsuitable materials are those classified as MH, CH, OH, OL, and Peat in accordance with the Unified Soil Classification System. Excess water in material will not be a basis for establishing unsuitable material regardless of gradation. The Owner's representative shall be notified immediately upon encountering of unsuitable material.

2.04 BORROW

Borrow material shall consist of sand or sand-clay soils free of particles greater than 2 inches in diameter, roots, trash, and other deleterious material. Borrow material shall be capable of being shaped and compacted to the density specified herein.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavation shall include the loosening, loading, removing, transporting, stockpiling and disposing of all materials, wet or dry, necessary to be removed to construct all structures included in this Contract to the lines and grades, and at the locations, shown on the Contract Drawings.
- B. Excavation for structures shall conform to the depth and dimensions necessary for the proper installation of all structures detailed on the Contract Drawings to a tolerance of 0.1 feet. Unless shown on the Drawings excavation shall not be carried below the elevations shown on the Drawings. Where bottoms of excavations are slightly unstable and the Drawings do not require a stabilized granular backfill and the Owner's representative does not direct additional excavation and replacement, the Contractor may provide a gravel course, but such work will be considered as for the Contractor's convenience and will not be considered as extra work.
- C. Where any unauthorized excavation is made below the elevation indicated on the Contract Drawings, the excavation shall be restored to the proper elevation with compacted, well graded granular backfill. Such backfill shall be compacted as specified in Section 3.06 of this Section.
- D. Excavations for pipelines and underground utilities shall meet the requirements of Section 02221.

3.02 SHEETING AND SHORING

- A. Excavations, shall be properly shored, sheeted and braced by the Contractor to maintain excavation in a condition to permit the safe and efficient installation of all items of Contract work. Braced and sheeted trenches and open trenches shall comply with all state laws and regulations, and local ordinances relating to safety, life, health and property. Also, this shall conform to the Occupational Safety and Health Standards for Excavations, Final Rule (29 CFR Part 1926) as printed in the October 31, 1989 issue of the Federal Register.
- B. The sides and bottoms of the trenches shall be protected against any instability which may interfere with the proper laying of the pipe and as necessary for the safety of the workmen and others and as may be necessary to protect adjacent structures.

3.03 DEWATERING AND PROTECTION AGAINST WATER

- A. The Contractor shall remove water from the site and shall lower the ground water level as necessary to complete the excavations to the required depths and as required to maintain the excavations sufficiently dry so that all required work can be accomplished. The Contractor shall do such well construction, well pointing, sheeting, ditching, diking and pumping and shall construct necessary drains, channels, sumps and cofferdams to keep his excavations and new structures clear of ground water, storm water or sewage and to keep his construction areas dry during the progress of the work and until the finished work is accepted by the Owner, except as otherwise specified.
- B. The Contractor shall be responsible for the effect of dewatering operations on adjacent property and for the effect on water supplies located in the vicinity of the project.
- C. Adequate measures and protection shall be provided by the Contractor to protect his work from damage from uplift due to ground water, storm water, or flood water. Any damages which may result shall be the Contractor's responsibility.
- D. The Contractor shall accept all responsibility for damage to the work of this Contract because of floods and water pressures and other water damages and shall accept all risks of floods and other events which may occur.
- E. All water discharged by pumping operations shall be discharged so as not to interfere with work under this Contract or with existing structures and operations. Route of dewatering pipe shall be subject to the Engineer's review. Discharge facilities and water quality shall comply with applicable regulations of State and Federal agencies.

- F. Dewatering operations shall be uninterrupted and continuous during the course of the work so as not to endanger any construction in place or to present a hazard to workmen in and around the site. The Contractor shall take all measures necessary including, but not limited to, standby equipment and constant attendance to ensure that the dewatering system remains operational and effective throughout the period of time that it is required.

3.04 BACKFILLING

- A. All excavation shall be backfilled to the lines and grades shown on the Contract Drawings. Backfill adjacent to structures shall not be placed until forms, form lumber and all debris from construction has been entirely removed from around the work. No backfilling shall be done in unsuitable weather or over ground that is frozen or too wet.
- B. Backfill shall not be placed against structures until the concrete has cured at least 7 days. Backfill, in general, shall be placed in horizontal layers not in excess of 12 inches in thickness, except in the cases of embankment construction around structures and under roadway and piping locations, where backfill shall be placed in 6 inch layers, with each layer thoroughly compacted as specified hereinafter, prior to the addition of the succeeding layer.
- C. Fill immediately adjacent to walls shall be hand tamped and special care shall be taken to prevent any wedging action or eccentric loading against the walls.

3.05 EARTHFILL

Earth fill materials shall be placed in successive layers not exceeding 8 inches in loose depth for the full width of the area being filled. Fill material shall be compacted as required with heavy compaction equipment.

3.06 COMPACTION

- A. General
Compaction of earth fill and all pavement subgrades shall be performed to the percentages of maximum standard or modified dry densities and to the depths as shown on the drawing or as follows:
1. Subgrades Under Roadways
100 Percent Standard (ASTM Test D698) for a depth of 24 inches.
 2. Subgrade and Fill for Structure
100% Standard (ASTM D-698). Compact top 12 inches of subgrade and each layer of fill.

3. Subgrade under Sidewalks, Curbs and Gutters
98% Standard (ASTM D-698). Compact top 6 inches.
4. Unpaved Areas To Be Grassed, Sodded, or Landscaped.
85% Standard (ASTM D-698).

B. Moisture Content

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

3.07 TESTING

A. General

The Contractor will select a qualified independent testing laboratory for the purpose of identifying soils, checking densities, and classifying soils materials during construction. Payment for the testing will be by Contractor with the cost included in other items of the work.

The Contractor shall include the cost of one compaction test per 500 cubic yards of fill material, 300 linear feet of curb, 200 linear feet of subgrade along pavement centerline and 1,500 square yards of base and one "proctor" test for each type of fill material to determine if the proper compaction has been attained.

B. Moisture-Density Tests

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

C. Field Density Tests

Tests shall be made in accordance with ASTM Method D1556 or such other test as may be approved by the Owner. If any compaction test reveals that fill or backfill is not compacted as specified, the Contractor shall scarify and re-compact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction.

D. Submittals

The soils technicians will submit formal reports of all compaction tests and retests to the Contractor and the Owner as soon as possible upon completion of the required tests.

This report information is to include but not be limited to the following:

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

E. Compaction Results

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

3.08 GRADING

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

END OF SECTION 02200

Revised August 2006

SECTION 02210

EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.01 SUMMARY

- A. This section specifies the requirements for temporary and permanent erosion and sedimentation controls.
- B. The Contractor shall not begin work until he is in full compliance with the LDA Permit that has been approved for the work associated with this project. Failure to install and maintain erosion control and sedimentation on the site shall constitute a violation of this permit for each day on which such failure occurs.

1.02 RELATED DOCUMENTS

- A. A Land Disturbing Activity Permit (LDA) is required for each project over 1.0 acre and is part of the Work associated with the project. The Contractor is required to comply with the best management practices for the control of erosion and sediment from the work site.
- B. NPDES Phase 2 General Permit Nos. GAR 100001, GAR 100002, GAR 100003 for the discharge of storm water associated with construction activity for projects one (1) acre and larger is required and is a part of the work associated with this project. Both the Owner and the Contractor are primary permittees (any entity that has submitted a Notice of Intent) of the Erosion, Sedimentation and Pollution Control Plan (ES&PCP). The owner provides the ES&PCP to the Contractor. A copy of this permit will be provided to the Contractor and the Contractor shall comply with its provisions until the work is completed and accepted by the Owner.
- C. The Contractor cannot start work until 7 days after the Owner has filed the Notice of Intent (NOI).
- D. The ES&PCP and Comprehensive Monitoring Plan (CMP) will indicate when, where and how often the site inspection and water testing should be conducted. Inspections will be made by Chatham County.
- E. NPDES Phase 2 Stormwater Discharge Permit Fees as required by Rules & Regulations for Water Quality Control Chapter 391-3-6, revised October 2003 is part of the permit requirement. These fees shall be paid prior to the commencement of any land disturbing activity.

1.03 EROSION AND SEDIMENTATION ACT – DEFINED

- A. It is the intent of this specification that the Project and the Contractor comply with all applicable requirements of the State of Georgia Erosion and Sedimentation Control Act of 1975 as amended and any County or Municipal Soil Erosion Ordinance.

Implementation of the requirements of the Act is based on the following:

1. The disturbed area and the duration of exposure to erosion elements should be minimized.
 2. Stabilize disturbed areas immediately.
 3. Retain or accumulate runoff.
 4. Retain Sediment.
 5. Do not encroach upon watercourses.
- B. The Manual for Erosion and Sediment Control in Georgia further defines practices and requirements. All erosion and sedimentation control measures must be designed for the 25 year, 24 hour rain event. The Contractor is responsible for maintaining all sediment and erosion control measures on the project site during construction. The Contractor is responsible for any damages caused due to failure to implement these requirements. A Soil Erosion and Sedimentation Control Permit has been obtained by the Owner so that periodic inspections may be made by Chatham County. The Contractor is to cooperate with the person performing these inspections.

1.04 COORDINATION WITH CONTRACT PLANS

A Soil Erosion and Sedimentation Control Plan will be provided to the Contractor and is to be implemented as a part of the procedures necessary to implement requirements of the Act and Ordinance.

PART 2 – PRODUCTS

2.01 SILT FENCE FABRIC

- A. Silt fence fabric shall have the following characteristics:

1. Strong rot-proof synthetic fibers formed into either a woven or non-woven fabric.

2. No treatment or coating that might significantly alter its physical properties after installation.
3. Contains stabilizers and/or inhibitors to make the filaments resistant to deterioration resulting from exposure to sunlight or heat.
4. Makes a pervious sheet of synthetic fibers oriented into a stable network so that the fibers retain their relative position with respect to each other under normal handling, installation, and service conditions.
5. Has finished fabric edges to prevent the outer yarn from pulling away from the fabric.
6. Have no defects or flaws that would significantly affect its physical and/or filtering properties.

2.02 RIPRAP

Riprap shall meet the requirements of Section 805 of the GADOT Standard Specifications. Filter fabric for permanent riprap shall be Mirafi 140N or an approved equal.

2.03 STORM DRAIN OUTLET PROTECTION

Storm drain outlets shall be paved or have rock or other energy dispersion device associated with it as shown on the Drawings. A separation geotextile fabric shall be used beneath the riprap apron. The geotextile fabric shall be Mirafi 140N or an approved equal.

PART 3 - EXECUTION

3.01 IMPLEMENTATION

- A. All erosion and control measures must be installed prior to initiation of construction activity.
- B. A temporary construction egress pad shall be installed and maintained at any point where construction vehicles enter a paved road, street or parking area. The pad shall be used to prevent mud from leaving the construction area. The pad shall be constructed as shown on the Drawings.
- C. All disturbed areas shall be grassed by sodding or seeding, fertilizing, mulching and watering to obtain a ground cover which prevents soil erosion.
- D. All measures installed for sediment control shall be checked at the beginning and end of each day when construction is occurring to ascertain that the measures are in place and functioning properly.

- E. Erosion control measures shall be inspected by the Contractor after each rainfall event and at least daily during prolonged periods of continuous rainfall. Contractor shall make repairs and adjustments as necessary to maintain the effectiveness of all sediment and erosion control measures.
- F. The Contractor shall remove all silt fencing after permanent grassing is established and accepted by the Owner.
- G. Silt fence or straw bales shall be installed around storm drain inlets under construction and at existing inlets.
- H. The Contractor shall control dust by wetting down the access road with water or by using a deliquescent chemical if the relative humidity is over 30%. Chemicals shall be applied in accordance with the manufacturer's instructions.
- I. The Contractor shall clean mud and debris off of the roadways adjacent to the construction entrance on a daily basis.

3.02 SYMBOLS

The Soil Erosion and Sedimentation Control Plan contains standard symbols for the different types of measures for implementing the Act. These symbols are defined for conditions, design criteria and construction specifications in Chapter 6 of the Manual and on the Drawings.

END OF SECTION 02210

Revised August 2006

SECTION 02221
EXCAVATION, TRENCHING AND BACKFILL FOR UTILITY SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

This section specifies the requirements for excavation, trenching, and backfilling for all underground utility systems. Underground utility systems include water mains and services, sanitary sewers and services, storm drains, and sanitary sewer force mains.

1.02 RELATED SECTIONS

Section 02200 - Excavation, Filling and Grading

PART 2 - MATERIALS

2.01 BEDDING

A. Bedding material shall meet the following requirements:

1. Coarse sands and gravels with maximum particle size of 40 mm (1½ inches), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry.
2. Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures.

2.02 BACKFILL

- A. Backfill material shall consist of suitable excavated materials or imported gravel meeting the requirements of #57 stone.
- B. All backfill material shall be free of stones, concrete and clay lumps larger than ⅓ cubic foot. Roots, stumps and rubbish which will decompose will not be permitted in the backfill. Backfill material shall have its moisture content corrected, as may be necessary before being placed in the trench to bring the moisture content to approximately "optimum" for good compaction. Any rock, stone, concrete, clay lumps larger than ⅓ cubic foot in volume, rubbish and debris shall be removed from the site and properly disposed of by the Contractor.

PART 3 - EXECUTION

3.01 GENERAL

Underground piping and utility systems which are to be installed in trenches whose lowest point of excavation is below the existing ground level and are unaffected by an excavation for structures, may be installed at any time during the course of the work. Piping and systems to be installed in or over fill, backfill or new embankments shall not be installed until all earthwork has been completed to rough grade, nor until settlement of the fill or embankment has taken place.

3.02 LOCATION AND PROTECTION OF UTILITIES AND STRUCTURES

- A. It shall be the responsibility of the Contractor to acquaint himself with the location of all utilities and structures both present and proposed, also all existing surface structures which may be affected by work under the Contract. The location of any underground structures furnished, shown on the Drawings or given on the site are based upon the available records but are not guaranteed to be complete or correct, and are given only to assist the Contractor in making a determination of the existence of underground structures.
- B. Overhead utilities, poles, etc., shall be protected against damage by the Contractor, and if damaged by the Contractor, shall be replaced by him. The Contractor shall notify those who maintain utilities sufficiently in advance of the proposed construction so that they may locate, uncover and disclose such work. If the progress of construction necessitates the removal or relocation of poles, overhead utilities and obstructions, the Contractor shall make all arrangements and assume all costs of the work involved.
- C. The Contractor shall provide for the continuance of the flow of any sewers, drains, water pipes, and water courses, and the like. Where such facilities, water courses, or electric overhead wires or conduits are interfered with by the work of the Contractor, the interruption shall be a minimum and shall be scheduled in advance with the Engineer and the utility owner.
- D. The Contractor shall restore all facilities interfered with to their original condition or acceptable equivalent. The cost of such restoration or damage caused directly by his work shall be paid for by the Contractor and shall be included in the prices bid for the items to which it pertains.

3.03 EXCAVATION AND TRENCHING

- A. Excavation
Excavate all materials encountered. See Section 02200 for additional requirements.

B. Caution in Excavation

The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures in the trench zone may be determined before being damaged. He shall be held responsible for the repair or replacement of such structures when broken or otherwise damaged because of his operations.

C. Trench Excavation

Trenches shall be wide enough to permit proper installation of pipe fittings and placing and compacting bedding and backfill materials. The width of the trench shall be sufficient to accommodate compaction equipment. Whenever possible, the clear width of the trench at the top of the pipe should not exceed the pipe outside diameter plus 24 inches.

D. Alignment and Grade

Trenches shall be excavated on the alignments shown on the Drawings, and to the depth and grade necessary to accommodate the pipes at the elevations shown. Where elevations of the invert or centerline of a pipe are shown at the ends of a pipe, the pipe shall be installed at a continuous grade between the two elevations.

E. Over Excavation

Excavation in excess of the depth required for proper shaping shall be corrected by bringing to grade the invert of the ditch with compacted coarse, granular material at no additional expense to the Owner. Bell holes shall be excavated to relieve bells of all load, but small enough to insure that support is provided throughout the length of the pipe barrel.

Excavation in excess of the depths required for manholes and other structures shall be corrected by placing a sub-foundation of 1500 psi concrete, at no additional expense to the Owner.

F. Rock Excavation

Rock found in trench shall be removed for a depth of at least six (6) inches below the bottom of the pipe.

3.04 SHEETING AND SHORING

Excavations shall be properly shored, sheeted and braced by the Contractor to maintain excavation in a condition to permit the safe and efficient installation of all items of Contract work. Braced and sheeted trenches and open trenches shall comply with all state laws and regulations, and local ordinances relating to safety, life, health and property. Also, this shall conform to the Occupational Safety and Health Standards for Excavations, Final Rule (29 CFR Part 1926) as printed in the October 31, 1989 issue of the Federal Register.

3.05 DEWATERING AND PROTECTION AGAINST WATER

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

3.06 REMOVAL AND REPLACEMENT OF UNSUITABLE FOUNDATION MATERIAL

- A. When the trench is excavated to the plan depth or as required by these Specifications, and soft or other material not suitable for bedding purposes is encountered in the trench, the Contractor shall immediately notify the Engineer for inspection and measurement of the unsuitable material to be removed. Where, in the opinion of the Engineer, the subgrade of the pipe trench is unsuitable material, the Contractor shall remove the unsuitable material to a depth of 6" for the full width of the trench and furnish and place stone backfill in the trench to stabilize the subgrade. Payment for removal and replacement of unsuitable material shall be in accordance with the requirements of the Measurement and Payment Section.

- B. 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. Removal and replacement of unsuitable material with stone backfill will be limited to areas where well pointing and other conventional methods of dewatering will not produce a dry bottom.
- C. No payment will be made for any overdepth excavation of soft unstable material due to the failure of the Contractor to provide adequate means to keep the trench dry.
- D. No payment will be made for any overdepth excavation of the unsuitable material and replacement not inspected and measured by the Engineer prior to excavation.

3.07 PLACEMENT OF BEDDING MATERIALS

- A. Bedding material shall be placed and compacted up to the springline of the pipe.
- B. Bedding material around the pipe shall be installed with care. Care shall be used to insure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. Precautions must be taken to prevent movement of the pipe during placing of the material through the pipe haunch.
- C. Avoid contact between the pipe and compaction equipment. Compaction of bedding shall be done so that compaction equipment will not damage the pipe.
- D. ASTM D2321 "Underground Installation of Flexible Thermoplastic Sewer Pipe" shall be used in conjunction with the above.

3.08 PLACEMENT OF BACKFILL MATERIAL

- A. Backfilling operations in this work are referred to herein as Backfilling at the Pipe Zone, Type "A" and Type "B". Type A backfilling shall be used where trenches cross under roadways, paved areas, and structures. Type B backfilling shall be used in all other areas.
- B. Type "A" backfill shall consist of suitable excavated materials or imported gravel placed in the trench in 6 inch thick layers from one foot above the pipe to finished grade. Each 6-inch layer shall be compacted before additional material is placed in the excavation. The density of the backfilled material after compaction shall be equal to 100 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). No water shall be used to secure compaction except for adding water to the backfill material before placing in the trench to bring moisture content to approximately "optimum" for good compaction.

- C. Type "B" Backfilling shall consist of suitable excavated materials or imported gravel placed in the trench in 12 inch thick layers from the spring line of the pipe to finished grade. Each 12 inch thick layer shall be compacted before additional backfill material is placed in the excavation. The density of the backfilled material after compaction shall be equal to 95 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). Water shall be added to backfill material only before being placed in the trench in order to bring the moisture content to approximately "optimum" for good compaction.

3.09 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS

- A. Operations
Excavation, trenching and backfilling along highways, streets and roadways shall be in accordance with the applicable regulations of the Georgia State Highway Department with reference to construction operations, safety, traffic control, road maintenance and repair.
- B. Removing And Resetting Fences
Where existing fences must be removed to permit construction, the Contractor shall remove such fences. As construction progresses, reset the fences in their original location and to their original condition. All costs of removing and resetting fences and such temporary works as may be required shall be included in the prices for the utility line or as provided for in the Bid Proposal.
- C. Protecting Trees, Shrubbery And Lawns
Trees and shrubbery along trench lines shall not be disturbed unless absolutely necessary. Trees and shrubbery necessary to be removed shall be properly heeled-in and re-planted. Heeling-in and re-planting shall be done under the direction of an experienced nurseryman. Where utility trenches cross established lawns, sod shall be cut, removed, stacked and maintained in suitable condition until replaced.

Topsoil underlying lawn areas shall likewise be removed and kept separate from general excavated materials. Removal and replacement of sod shall be done under the direction of an experienced nurseryman.
- D. Protection of Traffic
Provide suitable signs, barricades and lights for protection of traffic, in locations where traffic may be endangered by construction operations. All signs removed by reason of construction shall be replaced as soon as condition which necessitated such removal has been cleared. No highway, street or roadway shall be closed without first obtaining permission from the proper authorities.

E. Drainage Structures

All side ditches, culverts, cross drains and other drainage structures shall be kept clear of excavated material and be free to drain at all times.

F. Maintaining Highways, Streets, Roadways and Driveways

The Contractor shall furnish proper equipment which shall be available for use at all times for maintaining highways, streets and roadways. All such streets, highways and roadways shall be maintained in suitable condition until completion and final acceptance of the work.

The Contractor shall repair all driveways that are cut or damaged and maintain them in suitable condition until completion and final acceptance of the work.

3.10 PROTECTION OF WATER SUPPLY PIPES

A. Parallel Installation

Water mains shall be laid at least ten (10) feet horizontally from any existing or proposed sanitary sewer, storm sewer or sewer manhole. The distance shall be measured edge to edge. When local conditions prevent a horizontal separation of 10 feet, the water main maybe laid closer to a sewer (on a case-by-case basis) provided the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer. The sewer materials and joints shall be the equivalent to water main standards of construction and be pressure tested as required in Section 02700 to assure water-tightness.

B. Crossing

Water mains crossing sewers, storm sewers or sanitary sewers shall be laid to provide a separation of at least 18 inches between the bottom of the water main and the top of the sewer. At the crossings, one full length of water pipe shall be located so that both joints will be as far apart as possible. When local conditions prevent a vertical separation of 18 inches, the sewer passing over or under the water mains shall be constructed of materials and with joints that are equivalent to water mains standards of construction and shall be pressure tested as required in Section 02700 to assure water-tightness.

C. Special Conditions

When water mains cross under sewers, additional measures shall be taken by providing:

1. A vertical separation of at least 18 inches between the bottom of the sewer and the top of the water main;
2. That the one full length of water pipe be centered at the point of crossing so that the joints will be equidistant and as far as possible from the sewer;

and, special structural support for the water and sewer pipes be installed if required.

3. Both the sewer and the water main shall be constructed of water pipe materials and subjected to hydrostatic test, as prescribed in Section 02700 - Water Distribution System and/or Section 02710 - Sewer Force Mains. Encasement of the water pipe in concrete shall also be considered.

3.11 REMOVE AND REPLACE PAVEMENT

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

3.12 WALKS, DRIVES, CONCRETE CURB AND GUTTER

- A. Walks, driveways, and concrete curb and gutter designated for removal or are damaged during the course of construction shall be replaced in accordance with Section 02520, and the Standard Drawings.
- B. Sidewalks, driveways, and concrete curb and gutter shall be removed by making a vertical saw joint between any existing sidewalk, driveway, or curb and gutter that is to remain in place and the portion that is to be removed. The subgrade shall be compacted in accordance with the requirements of Section 02200. Concrete shall be placed in accordance with Section 02520.

3.13 TESTING

A. General

The Contractor shall select a qualified independent testing laboratory, acceptable to the Engineer, for the purpose of identifying soils, checking densities, and classifying soils materials during construction. All testing will be paid for by the Contractor. Copies of all test results shall be furnished to the Engineer.

B. Moisture-Density Tests

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

C. Field Density Tests

Tests shall be made in accordance with ASTM Method D1556. Tests shall be made in accordance with the following minimum schedule or as required by the soils technician or as may be directed by the Engineer:

One test for each lift of backfill for each 200 feet of trench or fraction thereof.

D. Submittals

1. The soils technicians will submit formal reports of all compaction tests and retests.
2. The reports are to be furnished to the Owner and the Engineer as soon as possible upon completion of the required tests.
3. This report information is to include but not be limited to the following:
 - a. Date of the test and date submitted.
 - b. Location of test.
 - c. Wet weight, moisture content and dry weight of field sample.
 - d. Description of soil.
 - e. Maximum dry density and moisture content of the lab sample which best matches the field sample in color, texture, grain size and maximum dry density.

- f. Ratio of field dry density to maximum lab dry density expressed as a percentage.
- g. Comments concerning the field density passing or failing the specified compaction.
- h. Comments about re-compaction if required.

E. Compaction Results

1. If any compaction test reveals that fill or backfill is not compacted as specified, the Contractor shall scarify and re-compact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction. These additional tests, required due to failure of the original test shall be paid for by the Contractor.
2. The soils technician is to advise the Engineer and the Contractor's Superintendent immediately of any compaction tests failing to meet the specified minimum requirements. No additional lift is to be placed on a lift with any portion failing.

END OF SECTION 02221

Revised August 2006

SECTION 02400 STORM DRAINAGE SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

This section specifies the requirements for the installation of the storm drainage systems as shown on the drawings.

1.02. RELATED SECTIONS

Section 02200 - Excavation, Filling and Grading

Section 02221 - Excavation, Filling and Backfilling for Utility Systems

1.03 EXCAVATION AND BACKFILL

Excavation and backfilling shall be as specified in Section 02221, Excavation, Trenching and Backfilling for Utility Systems.

1.04 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

A. Delivery and Storage

Materials delivered to site shall be inspected for damage, unloaded, and stored with the minimum of handling. Do not store materials directly on the ground. Inside of pipes and fittings shall be kept free of dirt and debris.

B. Handling

Materials shall be handled in such a manner as to insure delivery to the trench in sound undamaged condition. Pipe shall be carried to the trench, not dragged. Gasket materials and plastic materials that are not to be installed immediately shall not be stored in the direct sunlight.

PART 2 - PRODUCTS

2.01 PIPE FOR CULVERTS AND STORM DRAINS

Pipe for culverts and storm drains shall be as indicated and shall conform to requirements for the following types.

A. Concrete Pipe

Pipe shall be reinforced concrete pipe conforming to ASTM C76, Class III. The minimum pipe diameter shall be 15".

1. Joints

- a) Joints shall be made by use of a continuous rubber gasket conforming to the requirements of ASTM C443. Type II or III rubber gaskets shall be used on the pipe. Joints which do not fit tightly and uniformly shall be grouted after that segment of the line has been installed. All pipe joints shall be wrapped with a two foot wide strip of non-woven filter fabric lapped two feet.
- b) The assembly of the gasketed joint shall be performed as recommended by the pipe manufacturer. The elastomeric gaskets may be supplied separately in cartons or prepositioned in the bell joint or coupling at the factory. In all cases, clean the gasket, the bell or coupling interior, especially the groove spigot area to remove any dirt or foreign material before assembling. Inspect the gasket, pipe spigot bevel, gasket groove, and seating surfaces for damage or deformation. When gaskets are separate, use only gaskets which are designed for and supplied with the pipe. Insert them as recommended by the manufacturer.
- c) Lubricant should be applied as specified by the pipe manufacturer. Align the spigot to the bell and insert the spigot into the bell until it contacts the gasket uniformly.

2.02 DRAINAGE STRUCTURES

Drainage structures shall be of the following types, constructed of the materials specified for each type and in accordance with the indicated details.

A. Manholes and Inlets

Construction shall be of reinforced concrete, plain concrete, brick, precast reinforced concrete or precast concrete segmental blocks, complete with frames and covers or gratings. Precast concrete manholes and inlets shall be designed for the required depth and to sustain the required wheel loads and/or surface pressures. When manholes and inlets are to be constructed of prefabricated materials, shop drawings shall be submitted for approval before ordering the material.

B. Connection to Existing Inlets and/or Manholes

Pipe connections to existing inlets and/or manholes shall be in such a manner that the finished work will conform as nearly as practicable to the applicable requirements specified for new inlets and/or manholes, including all necessary concrete work, cutting and shaping.

2.03 MATERIALS FOR DRAINAGE STRUCTURES

A. Mortar

1. Mortar for connections to other drainage structures, and brick or block construction shall conform to ASTM C270, Type M, except the maximum placement time shall be one half hour.
2. Hydrated lime may be added to the mixture of sand and cement in a quantity equal to 25 percent of the volume of cement used. Hydrated lime shall conform to F.S. SS-L-351, Type M, or ASTM C141, Type A.
3. The quantity of water in the mixture shall be sufficient to produce a stiff workable mortar but in no case shall exceed 5 gallons of water per sack of cement. Water shall be clean and free of harmful acids, alkalies, and organic impurities. The mortar shall be used within 30 minutes after the ingredients are mixed with water.

B. Precast Reinforced Concrete Manholes

Manholes shall conform to ASTM C478 or AASHTO M199. Joints between precast concrete risers and tops shall be flexible plastic gasket and shall provide a flexible watertight joint. Flexible plastic gasket shall be RAM-NEK, or equal.

C. Precast Concrete Segmental Blocks

Blocks shall conform to ASTM C139, not more than 8 inches thick, not less than 8 inches long, and of such shape that joints can be sealed effectively and bonded with cement mortar.

D. Bricks

Bricks shall conform to ASTM C62, Grade SW; ASTM C55, Grade S-I or S-II; or ASTM C32, Grade MS. Mortar for jointing and plastering shall consist of one part portland cement and two parts fine sand. Lime may be added to the mortar in a quantity not more than 25 percent of the volume of cement. The joints shall be filled completely and shall be smooth and free from surplus mortar on the inside of the structure. Brick structures shall be plastered with 3/4 inch of mortar over the entire outside surface of the walls. For square or rectangular structures, brick shall be laid in stretcher courses with a header course every sixth course. For round structures, brick shall be laid radially with every sixth course a stretcher course.

E. Frame and Cover or Gratings

Fabrication shall be from one or more of the material options presented in F.S. RR-F-621, except the malleable cast iron option shall conform to ASTM A220, Grade 40010. Weight, shape, size and waterway openings for grates and curb inlets shall be as indicated on the plans. Frames and covers for curb inlets and for

areas not subject to vehicular traffic or storage may be malleable iron if so indicated. Malleable iron frames and covers shall conform to ASTM A220 and shall be of the weight, shape and size indicated.

2.04 BEDDING

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

PART 3 - EXECUTION

3.01 PLACING PIPE

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

3.02 BACKFILLING

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

3.03 RIPRAP

A. Materials

Bag riprap shall consist of sand and portland cement mixed at the ratio of 4:1 by weight. The amount of water used shall be sufficient to make up the optimum moisture content of the aggregate and cement, as determined by AASHTO T134.

B. Placement

The bags shall be uniformly filled to the maximum capacity which will permit satisfactory tying. The bagged rip-rap shall be placed by hand with the tied ends facing the same direction, with close, broken joints. After placing, the bags shall be rammed or placed against one another to produce the required thickness and form a consolidated mass. The top of each bag shall not vary more than 3 inches above the required plan.

3.04 STONE RIPRAP

A. Materials

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

STONE SLOPE PROTECTION

<u>SIZE OF</u> <u>STONE</u>	<u>PERCENT OF TOTAL WEIGHT</u> <u>SMALLER THAN THE GIVEN SIZE</u>
--------------------------------	--

Class I

100 lb.	100
60 lb.	80
25 lb.	50
2 lb.	Not to Exceed 10

B. Placement

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

3.05 GEOTEXTILE FABRIC

Geotextile fabric shall have excellent puncture and tear resistance properties and act as a separation barrier between fine grain soils and load distributing aggregate fill material. Geotextile fabric shall be a woven fabric meeting the following requirements:

Fabric Property	Unit	Test Method	Typical Values
Grab Tensile Strength	lb	ASTM D-1682	200
Grab Tensile Elongation	%	ASTM D-1682	30 (MAX)
Burst Strength	psi	ASTM D-3786	400
Trapezoid Tear Strength	lb	ASTM D-1117	115
Puncture Resistance	lb	ASTM D-3787	85

Fabric shall be Mirafi 500X, or equal.

3.06 SUBGRADE DRAINS

Subgrade drains will be provided from storm drain inlets where required because of the groundwater table. The subgrade drain will consist of a trench containing a 6 inch perforated pipe embedded in granular material as shown in the detail on the Plans. The drain will extend 10 feet in two directions from the inlet and will be extended beyond that point when instructed by the Owner or his representative. The drains will be constructed on a uniform slope toward the inlet.

3.07 SHOP DRAWINGS

Shop drawings shall be submitted on each manufactured item supplied under this Section along with other information as specified.

END OF SECTION 02400

Revised August 2006

SECTION 02480
GRASSING AND SODDING

PART 1 - GENERAL

1.01 SUMMARY

This section specifies requirements for includes fertilizer, grassing and sodding.

1.02 GENERAL

All disturbed areas resulting from work under this Contract shall be grassed or sodded as shown on the Drawings. For roads under state jurisdiction, grassing on the right-of-way shall meet the requirements of the Department of Transportation Standard Specifications.

1.03 SUBMITTAL

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

PART 2 – MATERIALS

2.01 FERTILIZER

Fertilizer shall be 10-10-10, commercial fertilizer conforming to state fertilizer laws.

2.02 LIME

Lime shall be agricultural grade, ground limestone and shall meet the requirements of the Georgia Department of Agriculture. Lime shall be added based on the results of soil test.

2.03 STRAW MULCH

Straw mulch shall consist of straw or hay. The mulch shall be reasonable free of mature seed bearing stalks, roots, or bulblets and shall be free of Johnson Grass, Nutgrass, Sandbur, Wild Garlic, Wild Onion, Wild Mustard, Crotonaria, Pigweed, Witchweed, and Cocklebur.

2.04 WOOD CELLULOSE FIBER MULCH

Wood cellulose fiber mulch shall be made for wood chip particles manufactured for discharging uniformly on the ground when applied by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with grass seed and fertilizer to form an homogenous slurry. It shall be dyed (non-toxic) an appropriate color to facilitate metering of material.

2.05 SEED

A. Seed shall meet the requirements of the Georgia Seed Laws and Rules and Regulations.

- B. Seed shall be delivered in suitable sealed containers labeled in accordance with applicable laws and regulations and including name and location of the producer. The pure live grass seed mixture shall be as shown on the Drawings.
- C. Mixtures of different types of seed called for in the seeding schedule shall be weighted and mixed in the proper proportions.

2.06 SOD

Sod shall be good quality, densely-rooted centipede grass, free from noxious weeds. The sod shall be obtained from areas where soil is reasonably fertile and contains a high percentage of loamy topsoil. Before cutting, the sod shall be raked free of all debris and the grass cut to two inches. The thickness of the sod shall be such as to contain practically all of the dense root system of the grass and not be less than 1 inch thick. Sod shall be cut into uniform strips not less than 12 inches in width and 24 inches in length.

PART 3 - EXECUTION

3.01 SOIL PREPARATION

- A. Immediately before seeding, the soil shall be properly prepared for seeding. The areas shall be made smooth and uniform and shall conform with the finished grade and cross section shown on the Drawings. Area to be grassed, if not loose, shall be loosened to a minimum depth of 3 inches before lime, fertilizer, seed or sod is applied. Seeded areas shall be free of stones larger than 2 inches and of roots and debris of any size.
- B. Seeded areas shall be moist when seeding and shall be kept moist by sprinkling until a good stand of grass is obtained and until the work is accepted by the Owner. Reseeding shall be done by the Contractor at his own expense as may be necessary to obtain a satisfactory stand of grass.
- C. The Contractor shall use mulch or other additive materials when conditions do not allow an acceptable stand of grass to grow. Mulch and additive materials shall contain no weed seeds.

3.02 SEEDING

- A. Seeding shall be performed during the periods and at the rates specified in the seeding schedule in the Drawings. Seeding shall not be performed when the ground is frozen or excessively wet.
- B. Seeds are to be sown by a mechanical spreader either hand operated or machine operated. Seeding equipment shall be such as will continuously mix the seeds to prevent segregation

- C. Immediately after the seed has been sown, the entire area shall be raked lightly and rolled to pack the soil firmly around the seed. Seeded areas shall be uniformly mulched with a continuous blanket of straw immediately after seeded. Straw shall be applied at a rate of 2 tons per acre.

3.03 SOD

- A. Sod shall be placed between March 1st and December 1st. Sod shall be placed within 48 hours of cutting.
- B. Sod shall be moist when laid and placed on a moist bed. Sod shall be placed within 48 hours of cutting. The sod strips shall be carefully placed by hand, beginning at the toe of slopes and progressing upward, with the length of the strip at right angles to the direction of flow of surface water. All joints shall be tightly butted and end joints shall be staggered at least 12 inches. The sod shall be immediately pressed firmly into contact with bed by tamping or rolling. Screened soil shall be used to fill all joints between strips.
- C. Sod on slopes shall be pegged with sod pegs to prevent displacement. The sod shall be watered, mowed, weeded, repaired or otherwise tended to insure the establishment of a uniform healthy stand of grass.

3.04 HYDROSEEDING (WOOD CELLULOSE FIBER MULCH)

Hydroseeding shall be applied at a rate of 1500 pounds per acre in a slurry mixture of seed, fertilizer, and wood cellulose fiber mulch. The slurry mixture shall be regulated to ensure a uniform application of all materials at the rate specified.

3.05 MAINTENANCE AND RESEEDING

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

END OF SECTION 02480

Revised August 2006

SECTION 02500
BASE COURSE AND BITUMINOUS PAVEMENT

1. SCOPE:

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

2. GENERAL:

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

3. SUBGRADE PREPARATION:

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

4. BASE COURSE:

a) Preparation of Base.

The surface of the base course will be inspected by the Engineer for adequate compaction and surface tolerances specified in applicable base course or sub-base course. Any ruts or soft yielding spots that may appear in the base course, any areas having inadequate compaction, and any deviations of the surface from the requirements specified for the base course shall be corrected by loosening the affected areas, by removing unsatisfactory material and adding approved material where required, and by reshaping and recompact to line and grade and to the specified density requirements. Compaction of base material shall be done by conventional means using a 30,000 to 40,000 pound vibratory roller or other means of obtaining the required compaction.

The lines and grades shown on the Contract Drawings for each pavement category of the Contract shall be established and maintained by means of line and grade stakes placed at the site of the work by the Contractor.

b) Graded Aggregate Base Course.

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

<u>Sieve Designation</u>	<u>Percent by Weight Passing</u>
2"	100
1-1/2"	97-100
3/4"	60-90
No. 10	25-45
No. 60	5-30
No. 200	0-15

5. BITUMINOUS PRIME:

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

6. BITUMINOUS TACK COAT:

The bituminous tack coat shall be an asphaltic material which meets the requirements of Section 413 of the Georgia Department of Transportation Standard Specifications. Application rate shall be at the rate indicated in the appropriate section on the plans or, as a minimum, 0.05 gallon per square yard of surface.

7. BITUMINOUS PAVEMENT:

The bituminous wearing surface shall be a plant mix conforming to the requirements of Section 400 of the Georgia Department of Transportation Standard Specifications. The job mix shall meet the requirements of 9.5mm or 12.5mm Superpave, Section 828 of the Georgia Department of Transportation Standard Specifications and shall have a Marshall Stability of 1500 pounds (50 blow) and a percent voids between 4 and 5.

A job mix formula indicating the single definite percentage for each sieve fraction of aggregate and for asphalt shall be submitted prior to surfacing operations. The job mix formula shall also show the stability as determined by the Marshall Method, the percent voids, the percent voids filled with asphalt, and the unit weight per cubic foot of compacted mix.

The general composition limits are extreme ranges of tolerances to govern mixtures made from any raw materials meeting the specifications. The submission of the job mix formula shall bind the Contractor to furnish paving mixture meeting the exact formula within allowable tolerances of plus or minus 2 percent for asphalt, plus or minus 7 percent of 2 inch and larger sieve sizes, plus or minus 5 percent for material passing the 2 inch thick sieve and retained on the No. 200, and plus or minus 2 percent of material passing the No. 200.

Compaction shall be done with an 8 to 10 ton steel-wheeled roller or other means approved by the Engineer. Thickness shown on the Drawings is a minimum. Smoothness shall not exceed one-eighth inch for a ten foot straight edge.

8. TESTING:

The following tests will be made in accordance with the current edition of the appropriate Department of Transportation Standard Specifications.

At least one density determination shall be made for each 500 square yards of base. Asphalt extraction and aggregate gradation on the asphaltic concrete plant mix; one for each 500 tons of material, or fraction thereof, delivered to the job site.

9. PROOF-ROLLING:

Proof-rolling will be done with a loaded tandem dump truck (15 yards heaped) or as specified in the Department of Transportation Standard Specifications. Test rolling will be done parallel to the centerline at speeds between 2 and 5 miles per hour; 3 to 4 passes depending on width of road shall be completed prior to final walk along proof roll.

END OF SECTION 02500

Revised 013004

SECTION 02520
CONCRETE SIDEWALKS, CURB AND GUTTER

PART 1 - GENERAL

1.01 SUMMARY

This section specifies the requirements for the construction of concrete sidewalks, curb and gutter.

1.02 RELATED SECTIONS

Section 02200 - Excavation, Filling and Grading

Section 02221 - Excavation, Filling and Backfilling for Utility Systems

Section 03300 – Cast in Place Concrete

PART 2 - MATERIALS

2.01 CONCRETE

Concrete shall be composed of cement, admixtures, fine aggregate, coarse aggregate, and water proportioned and mixed to produce a plastic workable mix in accordance with the requirements of American Concrete Institute (ACI) Manual of Concrete Practice (Latest Edition), and shall be suitable for the specific conditions of placement. Concrete shall be Class "B" in accordance with Section 03300 and shall have a 28-day compressive strength of not less than 3,000 psi.

All concrete shall be ready mixed concrete in accordance with ASTM C94. All reinforcement shall comply with ASTM A615.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

The subgrade shall be brought to the line and grade necessary to accommodate the base and concrete at the required finished grades. Subgrade shall be compacted in accordance with the requirements specified in Section 02200.

3.02 PREPARATION

Before placing concrete, all debris and water shall be removed from the places to be occupied by the concrete. Wood forms shall be thoroughly wetted or oiled, and the reinforcement cleaned of coatings. Formwork and the placement of reinforcement, pipes, anchors and other inserts shall be inspected by the Engineer before any concrete is deposited.

3.03 PLACING

The placing and depositing of all concrete shall be done in accordance with requirements of the ACL. Concrete shall be rapidly handled from mixer to forms and deposited as nearly as possible in its final position to avoid segregation due to re-handling or flowing. Concrete shall not be allowed to drop freely more than 4 feet. For greater drop a tremie or other means must be used. Concrete shall be spaced and worked by hand and vibrated to assure close contact with all surfaces of forms and reinforcement and leveled off at proper grade to receive finish. No concrete that has partially hardened or been contaminated by foreign material shall be deposited in the work. Concrete shall never be deposited upon soft mud or dry porous earth.

3.04 VIBRATION

Concrete shall be placed with the aid of manual vibration. The intensity of vibration shall be sufficient to cause flow or settlement of the concrete into place, but shall not be long enough to cause segregation of the mix. To secure even and dense surfaces, vibration shall be supplemented by hand spading in the corners and angles of forms and along form surfaces while the concrete is plastic under the vibratory action. Caution must be exercised to prevent any injury to the inside face of the forms or any movement of the reinforcement.

3.05 CONSTRUCTION JOINTS, CONTROL JOINTS AND EXPANSION JOINTS

- A. Joints shall be formed and located as indicated on the Standard Drawings. Final locations are subject to review and approval in the field.
- B. The rate and method of placing concrete and the arrangement of construction joint bulkheads shall be such that the concrete between construction joints shall be placed in a continuous operation. Whenever it is necessary to stop work, such stops shall be located and temporary bulkheads erected. Before concreting is resumed, the surfaces of previously placed concrete shall be roughened, cleaned, wetted and slushed with grout immediately before additional concrete is placed. Grout shall be one part Portland cement and two parts sand.
- C. Expansion joints shall be provided in walks, and curb and gutter where shown and at walls, intersecting walks and buildings. Expansion joints in walks and curb and gutter shall be made with ½ inch thick pre-molded, non-extruding expansion joint filler, "Flexcell," or "Meadows" or equal, extending through the full thickness of the concrete except the upper ¼ - inch at 80 foot intervals. When sidewalk is adjacent to curb the expansion joints shall coincide, where possible. These shall be set accurately in place to straight lines and concreted in. Control joints in sidewalks shall be spaced at intervals equal to the width of the sidewalk and in curb and gutter at 10 foot intervals with a depth of cut equal to 1/3 of the thickness of the concrete. Edges of grooves, expansion joints and edges of walks and curb and gutter shall be rounded to a ¼ - inch radius with suitable grooving and edging tools.

3.06 FINISHING

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

3.07 PROTECTION AND CURING

- A. Protect concrete against frost, freezing temperatures, rapid drying and heavy rain after placing during this period, concrete shall be maintained above 70 degrees F. for at least 3 days or above 50 degrees F. for at least 5 days.
- B. Walks and other exterior concrete shall be cured by covering first with sprayed-on curing compound applied immediately after finishing and then also completely covered with an impermeable fiber filled paper for a period of not less than 72 hours.
- C. Membrane curing compound shall comply with ASTM C309 for Type I and paper shall comply with ASTM C171.
- D. Exterior concrete work constructed during hot weather shall be protected, in addition to the curing specified above, with Spencer Kellogg Anti-Spalling Compound, or Carter-Waters "Dek-Seal," or equal, applied as soon as conditions will permit after curing and when the concrete is clean and dry. The mixture shall be applied uniformly in 2 applications, in accordance with the manufacturer's recommendations. The second application shall not be made until after the first coat has been completely absorbed by the concrete.

3.08 REMOVAL OF FORMS

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

3.09 PATCHING AND FINISHING CONCRETE FORMED SURFACES

- A. Immediately after removing forms, all concrete surfaces shall be inspected, and any honeycomb, voids, stone pockets, and tie holes shall be patched before the

concrete is thoroughly dry. Defective areas shall be chipped away to a depth of not less than 1 inch with the edges perpendicular to the surface. The area to be patched and a space of at least 6 inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar. The patch shall be finished in such a manner as to match the adjoining surface.

- B. Immediately upon removing forms from finished concrete surfaces, they shall be cleaned of all cement fines and any air pockets shall be carefully filled with cement mortar worked in to insure a bond with the concrete and finished off to match the surrounding surface.
- C. All vertical exterior surfaces exposed in the finished work shall be finished to a smooth rubbed finish having a uniform appearance.

3.10 REJECTION OF WORK

A. Concrete sidewalks and/or curb and gutter may be rejected if any one or more of the following conditions are found on the finished product.

- 1. Concrete compressive strength test which fail to meet the requirements of the specifications
 - 2. Improper or inadequate finish
 - 3. Gutter/sidewalk slopes which do not conform to the drawings or the finish construction roadway and shoulder
 - 4. Spalding or chipping of concrete surface
 - 5. Observance of excessive honeycombing of finished concrete
 - 6. Presence of full depth cracks of any size or hairline cracks of lengths greater than 4 inches
 - 7. Absence or improper installation of expansion and construction joints
 - 8. Vertical or horizontal displacement of curb and gutter.
- B. The Inspector or other representative shall have the final determination of whether finished products should be accepted or rejected. He may, at this discretion and if he considers it in the best interest of Chatham County, accept improvements containing one or more of the above.

3.11 CONSTRUCTION OF HANDICAP RAMPS AND SIDEWALKS

Contractor shall construct depressed curb and gutter, handicap ramps and sixteen (16) feet of sidewalk centered on the end of the handicap ramp where sidewalks are required as part of the road construction. Handicap ramps and access shall comply with the current DOT standards.

END OF SECTION 02520

Revised August 2006

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

This section specifies the requirements for cast-in-place concrete construction and cement work.

1.02 DETAILS AND DIMENSIONS

The Drawings show the design requirements and dimensions for structural strength, but do not show detail dimensions to fit intricate architectural, mechanical, equipment, and electrical details. The concrete work shall be constructed so that it will conform to the clearances required by the architectural, electrical, mechanical and equipment designs and shall at Contractor's expense do all cutting and patching necessary.

1.03 QUALITY ASSURANCE

- A. Certified copies of test reports and certificates or other satisfactory evidence, where so specified, shall be furnished before delivering certified or tested materials to the project site.
- B. Tests of Cement
Tests of cement shall be made on the entire cement requirements, on car or warehouse samples or bin (sealed) samples in accordance with ASTM C150. No cement shall be used until tests have demonstrated that the cement complies with the Specifications.
- C. Tests of Aggregates
Tests of aggregates shall be performed in accordance with ASTM C33 and shall be made before work starts and at such times as may be necessary to determine whether or not the materials delivered comply with the Specifications. No aggregate shall be used which does not comply with the Specifications.

PART 2 - MATERIALS

2.01 GENERAL

- A. All concrete shall be normal weight with 28-day compressive strength not less than 4,000 psi except where concrete of lesser strength is specified for use as noted on the Drawings.

- B. Concrete shall be composed of cement, admixtures (if required), fine aggregate, coarse aggregate, and water. Concrete shall be classified as "A" or "B", and shall have 28 day compressive strengths not less than those listed below except that concrete containing high early strength cement shall have 7 day compressive strengths not less than those listed below.
- C. Class "A" concrete shall have a compressive strength of not less than 4,000 psi, and shall be used for all reinforced concrete work, unless otherwise specified.
- D. Class "B" concrete shall have a compressive strength of not less than 3,000 psi, and shall be used for concrete sub-foundations, concrete fill, pipe envelopes, thrust blocks and where so indicated on the Drawings.

2.02 CEMENT

Cement shall be a standard brand of Portland cement which conforms to the requirements of ASTM C150, Type II. Cement shall be delivered in original unopened sacks bearing the brand and manufacturer's name or in properly documented bulk shipments. Cement shall be stored in a weather tight building, and shall be protected at all times from moisture. The same brand of cement shall be used throughout the work.

2.03 CONCRETE AGGREGATES

- A. Concrete aggregates shall comply with the requirements of ASTM C33, except as otherwise specified hereinafter. Both coarse and fine aggregates shall be obtained from a source producing aggregates with a record of having no alkali-aggregate reaction causing "pop-outs" and the like; the aggregate producer shall submit a certification of such record.

1. Fine Aggregate

Fine aggregate shall consist of screened and washed, well graded natural sand having clean, hard, strong, durable, un-coated particles, and shall be free from injurious amounts of dust, lumps, soft or flaky particles, shale, alkali, organic matter, loam or other deleterious substances and shall comply with ASTM C33 except as may be otherwise specified herein.

2. Coarse Aggregate

- a. Coarse aggregate shall consist of screened and washed, well graded crushed stone or gravel having clean, hard, strong, durable, un-coated particles free from injurious amounts of soft, friable, thin, elongated or laminated pieces, alkali, organic or other deleterious matter. The grading shall be in accordance with ASTM C33 and as follows.

- b. Aggregates size 467 (1-1.2 inches to No. 4) shall be used for thicker sections where reinforcement is not closely spaced or close to forms. Aggregate size 57 (1 inch to No.4) and 67 (3/4 inch to No. 4) shall be used for thinner sections, heavily reinforced work, and all parts where the coarser aggregate might cause honeycombing, poor bond or exposed reinforcement.
- c. Aggregates shall be stored in such a manner as to prevent deterioration and/or intrusion of foreign matter and/or segregation. Any material which has deteriorated or which has been damaged shall not be used for concrete. The aggregates shall be stockpiled at least 24 hours prior to use.
- d. To avoid unnecessary or haphazard changes in consistency, the aggregates shall be obtained from a source which will insure uniform quality and grading and they shall be delivered to the work and handled in such a manner that variations in moisture content will not interfere with the steady production of concrete of uniform quality and consistency.

2.04 WATER

Water shall be potable and free of substances that may be deleterious to concrete or steel.

2.05 ADMIXTURES

- A. Admixtures shall be compatible with the concrete. All admixtures in a mix shall be from one manufacturer. Calcium chloride or admixtures containing calcium chloride are not acceptable.
- B. Water-reducing, high range admixture shall meet the requirements of ASTM C494, Type F.
- C. Water-reducing, high range and retarding (Type G) admixture (superplasticizer) shall meet the requirements of ASTM C494, Type F.
- D. Air entraining admixtures shall meet the requirements of ASTM C260.

2.06 CURING COMPOUND AND IMPERMEABLE FIBER FILLED PAPER

Membrane curing compound shall comply with ASTM C309 for Type I and paper shall comply with ASTM C171.

2.07 FLOWABLE FILL

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 (541 pounds) for a 6-inch slump, to 55 gallons (458 pounds) 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.

2.08 WATERSTOPS

- A. Neoprene rubber waterstops shall be provided where contact will be with sewage, sludge and/or similar materials. Neoprene waterstop for expansion joints shall be center bulb type equal to No. 5318-91 by W. R. Grace and Company, or No. 3290-3 by Williams Products, Inc., or equal, and as specified herein. Neoprene waterstops for construction joints shall be No. 5318-60 by W. R. Grace and Company or No. 3066-3 by Williams, or equal.
- B. Polyvinylchloride waterstops shall be provided where contact will not be with sewage, sludge and/or the like. Polyvinylchloride waterstops for expansion joints shall be center-bulb type equal to No. 7C by W. R. Grace and Company, or No. 9380LB by Sonneborn-Contech, or equal and as specified. Polyvinylchloride waterstops for construction joints shall be No. 3 by W. R. Grace and Company, or No. 4316 by Sonneborn-Contech, or equal, and as specified here in.

PART 3 - EXECUTION

3.01 MEASUREMENT OF MATERIALS

- A. Each of the constituent materials shall be proportioning in each batch. Method of operation and scales shall be such as to obtain an accuracy of not less than 99 percent correct for each batch. Water may be measured by volume, in which case the apparatus shall be calibrated to insure the proper quantity in each batch.
- B. Unless bulk cement is used and is weighed and dispensed to the accuracy specified hereinbefore, batches shall be of such size that there will be no splitting of sacks of cement. Each sack shall contain 94 pounds of cement.

3.02 PROPORTIONING OF CONCRETE MIXES

- A. Design
Trial design batches and testing to meet requirements of the concrete specified shall be provided. The design mix shall contain aggregates representative of those proposed for use in the work and shall be in accordance with ACI 211.1. Tests for slump, unit weight, and air content shall be performed in the field.

B. Entrained Air Content

Air entrainment shall be produced by adding an air entraining agent at the mixer. Air content shall be based on measurements made in concrete mixtures at point of discharge at the job site.

C. Air Content

Air content by volume of concrete shall be maintained at 5 to 6 percent as determined in conformance with ASTM C231.

D. Water-Cement Ratio

Mixes shall be proportioned by weight except that water and admixture may be by volume or by weight. Specimens shall be made and cured in conformance with ASTM C192 and tested in conformance with ASTM C39 or C78, as applicable. Curves representing the relation between the water-cement ratio and the average 28 day compressive or flexural strength, or earlier strength at which the concrete is to receive its full working load, shall be established for a range of values including the compressive and flexural strengths indicated or specified. Curves shall be established by at least 3 points, each point representing average values from at least 3 test specimens. The maximum allowable water-cement ratio shall be that shown by these curves to produce an average compressive strength or an average flexural strength of 15 percent greater than indicated or specified.

E. Slump

1. Slump shall be determined in conformance with ASTM C143, and shall be within the following limits, provided the required strength is obtained: Maximum 4 inches, minimum 2-1/2 inches. When climatic conditions require the use of hot weather concreting practices, the slump shall have a range of 2-1/2 inches maximum and 2 inches minimum and the mix design shall be adjusted to provide the specified strength of concrete.
2. When water reducing admixtures or superplasticizers are used, the following shall apply: Laboratory trial mixes shall be required to determine correct proportions and dosage to prevent bleeding and segregation of aggregates. The manufacturer's representative shall be present to provide technical assistance during mix design, and during initial field mixing, and placement of concrete when this additive is used.
3. Since the plasticizing effects last approximately 30 to 60 minutes, depending on job conditions, the admixture shall be added at the project site to delivered concrete having an approximate slump of 2.5 inches, but not more than 3 inches. The maximum slump, after applied dosage and with proper mixing, shall not exceed 3 inches.

F. Mixing Concrete

1. Mixing concrete shall be done in a rotary batch mixing machine. The volume of each batch shall not exceed the rated capacity of the mixer. The batch materials shall be delivered to the mixer measured accurately to the required proportions and shall be mixed continuously for not less than one and one-half minutes after all materials including water are in the mixer, during which time the mixer shall rotate at the speed recommended by its manufacturer. The entire batch shall be discharged before recharging the mixer. Mixer shall be cleaned frequently.
2. Truck mixed concrete shall conform to ASTM C94. A concrete delivery ticket for each batch delivered shall be furnished to the Engineer before unloading with the following additional information:
 - a. Reading of revolution counter at first addition of water.
 - b. Type, brand and amount of each admixture.
 - c. Total water content of batch, or total water content per cubic yard of batch.
 - d. Design slump.
3. If water is added at the site, additional test cylinders will be required and the additional cylinders shall be at the Contractor's expense.

3.03 PREPARATIONS FOR PLACING CONCRETE

- A. Place all embedded items accurately and secure; set inserts and anchor bolts.
- B. Before beginning placement of concrete, all spaces to be filled with concrete shall be cleaned free of debris and foreign material. Forms shall be coated in a manner approved by the Engineer. Soil against which concrete is to be placed shall be moist, but not muddy. Surfaces of concrete previously placed, on or against which new concrete is to be deposited, shall be thoroughly cleaned of dirt, loose material and laitance and shall be well wetted and then slushed over with neat cement grout immediately before concreting. Forms shall be re-tightened as necessary.

3.04 PLACING CONCRETE

- A. Concrete shall be placed as soon as practicable after mixing. No concrete which has commenced to set or any re-tempered concrete shall be used. It shall be

deposited in such manner as to cause no separation or segregation of the ingredients. Methods of conveying concrete shall not cause excessive slump losses. Do not use aluminum pipes to convey concrete. Concrete shall not be dropped over 4 feet through space. It shall not be deposited in large quantities at one place and be permitted to run or to be worked any considerable distance, but shall be deposited in its final position as nearly as practicable.

- B. The coarse aggregate shall be worked back from the forms with a suitable tool so as to bring a full surface of mortar against the form, without the formation of excessive surface voids. All concrete shall be consolidated by mechanical vibration augmented as necessary by spading, rodding, or forking so that the concrete is thoroughly worked around the reinforcement, around embedded items, and into corners of forms, eliminating all air or stone pockets which may cause honeycombing, pitting, or planes of weakness. Mechanical vibrators shall have a minimum frequency of 7,000 revolutions per minute and shall be operated by competent workmen. Over-vibrating and use of vibrators to transport concrete within forms shall not be allowed. Vibrators shall be inserted and withdrawn at many points, from 18 to 30 inches apart. At each insertion, the duration shall be sufficient to consolidate the concrete but not sufficient to cause segregation, generally from 5 to 15 seconds duration. Spare vibrator shall be kept on the job site during all concrete placing operation.
- C. In vertical parts of small cross-section, the concrete shall be placed in small quantities to facilitate tamping and compaction. Concrete shall not be deposited in such manner as to shake or jar concrete in the process of setting. Wheeling over forms or concrete in such manner as to jar green concrete shall not be permitted. No wood spreaders shall be concreted in.
- D. The Contractor shall plan the amount of concrete work to be completed in each run. Concreting shall not be started until sufficient material and working force are available to complete the part of the work designated as a run. Concreting shall continue uninterrupted until the completion of the run, so that in no place will concrete be deposited in contact with concrete that has attained its initial set, except at construction joints.
- E. Concrete shall not be deposited in or through water.

3.05 SPOUTING

Chutes for conveying concrete shall be of metal or metal lined, and their slope shall be such that there will be no segregation. Handling the concrete at the discharge end of chutes shall be such that no segregation develops. Do not use aluminum for chute liner or for chutes. Chutes shall be thoroughly flushed with water before and after each run. The water used for this purpose shall be discharged outside the forms.

3.06 PLACING CONCRETE AGAINST OTHER CONCRETE

Before depositing new concrete on or against concrete that has hardened, re-tighten forms as necessary and roughen, clean and moisten the hardened concrete. The new concrete placed in contact with hardened or partially hardened concrete shall contain an excess of mortar to insure bond, and the cleaned and moistened surfaces of the hardened concrete shall first be slushed with a coating of neat cement grout against which the concrete shall be placed before the grout has attained its initial set.

3.07 LEVELING

- A. Slabs shall be struck off with a straightedge smooth and even to screeds set accurately at the required elevations and slopes. Slopes, depressions, etc., shall be formed as required by the Drawings. Depress the slabs as shown for sumps and the like.
- B. Immediately after the slab has been struck off, the screeds and screed supports shall be removed and the recessed and holes left by them shall be filled with concrete and carefully worked and tamped into place so as to leave no weakness.

3.08 INSERTS AND EMBEDMENTS

A. Inserts

The Contractor shall place pipes, castings, or conduits to pass through concrete structures in the forms before placing the concrete. If it is not possible to place pipes, conduits, or castings on the forms, the Contractor shall provide openings for insertion of the pipes, conduits, or castings. Horizontal conduits, where shown in structural slabs and beams, shall be placed between the top and bottom layers of reinforcement.

- B. Pipes, castings, channels, pipes, or other metal parts that are to be embedded in concrete shall be set and secured in the forms prior to concrete placement. Unless otherwise specified, anchor bolts and inserts shall be embedded in concrete as shown. The Contractor shall provide inserts, anchors, or other bolts necessary for the attachment of piping, valves, metal parts, and equipment. Nailing blocks, plugs, strips, and the like necessary for the attachment of trim, finish and similar work shall be provided.
- C. Timely notice shall be given to all other Contractors and subcontractors and allow them a reasonable time for the placing of their portion of the work required to be embedded. No concrete shall be placed until all work to be concreted in had been placed and inspected by the Engineer.
- D. Wrap pipes with foam insulation where shown, using Armstrong Armaflex-22 or Dow Ethafoam, or equal in order to prevent concrete from bonding to the pipes and also to allow some relative movement.

3.09 COLD WEATHER PLACEMENT

- A. No concrete shall be deposited in cold weather, unless materials are heated and suitable protection and heat are provided. Weather shall be considered cold weather whenever the temperature is as low as or lower than 40 degrees F., or when there is a probability that such temperature will occur during the curing period. Calcium chloride shall not be used.
- B. All equipment, enclosures, protection, heating and method of carrying on the work shall be the responsibility of the Contractor.
- C. For concrete to be placed during cold weather, aggregates and water shall be heated to a temperature such that the concrete when mixed and when deposited shall have a temperature of not less than 60 degrees F. and not more than 80 degrees F. and shall be continuously kept at a temperature of 60 degrees to 80 degrees for a curing period of not less than 72 hours for concrete with Type 1 Cement, and not less than 48 hours for high-early strength concrete, after which maintain the temperature above 40 degrees F. for not less than four additional days. Keep concrete moist. Leave protection in place so that temperature of concrete will not drop at a faster rate than 20 degrees F. in 24 hours. Before depositing concrete, the forms, reinforcement and other objects with which concrete will come in contact, shall have been heated to a temperature of 60 degrees F. to 80 degrees F. Frozen concrete shall be immediately removed, and replaced with new work by the Contractor at his own expense. In order to maintain the temperature specified above, the Contractor shall entirely enclose the work with tarpaulins or other suitable material and shall furnish fuel and suitable heating equipment and the necessary labor and supervision. Heating devices shall exhaust all combustion gases outside of the enclosures. Full responsibility for the protection of the work shall rest with the Contractor. During cold weather, temperature records shall be kept, showing the temperature at 4 hour intervals of the outside air, of the air in the coldest part of the enclosure near the concrete, of the concrete as it is placed, and of the concrete in place at such points as the Engineer may direct. During freezing weather, such temperature records shall be kept night and day.

3.10 HOT WEATHER PLACEMENT

- A. Concrete materials shall be placed at the lowest practicable temperature except as specified hereinbefore for cold weather. When hot weather conditions exist that would seriously impair the quality and strength of the concrete, the concrete shall be placed in accordance with recommendations of ACI 305 except as otherwise specified herein.
- B. During hot weather conditions, the temperature of the concrete immediately before it is placed in the forms shall be between 50 degrees F. and 80

degrees F. Cement shall not be used when it has a temperature higher than 140 degrees F.

- C. Shaved ice may be used in the mixing water to reduce the temperature of the concrete at the mixer, but there shall be no ice in the concrete when it is discharged from the mixer.
- D. Retarder admixes may be used to control the setting time of the concrete. However, it must be demonstrated that the retarder admix will not change the specified requirements for the concrete, including strength, air entrainment, minimum shrinkage, etc. If such retarders are used, new concrete mix designs shall be made by the testing laboratory, at the Contractor's expense. Additional cement, if required by such new mix designs, shall be furnished by the Contractor at his own expense. No reduction in the specified amount of cement will be permitted.

3.11 CONSTRUCTION JOINTS

- A. Construction joints shall be as shown. Additional construction joints shall be made only at places where necessary. The location, detail and workmanship shall be such as to produce tight joints and no structural weakness and such as not to mar the appearance of the finished work. Key all joints for maximum shear value except as otherwise directed. Each construction joint shall be level or plumb, as the case may be.
- B. Expansion Joint Filler
Provide cork expansion joint material, ASTM D1752, Type II, in expansion joints for interior work as shown. Provide fiber expansion joint material conforming to ASTM D1751 in expansion joints for exterior work such as walks, etc., as shown and/or specified. Seal over interior expansion joints with sealant material conforming to ANSI A116.1 and over exterior expansion joints with sealant material conforming to Federal Specification TT-S-227E. Install materials as recommended by the manufacturers.
- C. Slip Joints
Where indicated, build in two layers of tar paper to prevent bond and to allow joints to slip.

3.12 WATERSTOP INSTALLATION

- A. Provide waterstops where shown on the Drawings. Also provide water stops in all expansion joints and in construction joints as required making structures watertight. Waterstops shall be installed in accordance with the manufacturer's recommendations.

- B. Waterstops shall be securely held in place during placement of concrete. The concrete shall be solid and completely embed waterstop.
- C. Field splices of waterstops are only acceptable in straight sections. Crosses, tees, and other shapes shall be fabricated by the waterstop manufacturer prior to delivery to the project. Where boots or unions are used, they shall be of the make material and manufacture and shall fit the waterstop section snugly.

3.13 CURING AND CARE OF CONCRETE

A. General

Concrete shall be protected against moisture loss, rapid temperature change, mechanical injury, and injury from rain or flowing water, for a period of 7 days. Concrete shall be maintained in a moist condition at temperatures above 50 degrees F. throughout the specified curing period and until remedial work is started under paragraph 3.14, Concrete Finishing. Concrete shall be protected from local applications of heat, rapid temperature change and rapid drying for the first 24 hours following the removal of temperature protection. During activities shall be started as soon as free water has disappeared from the surface of the concrete after placing and finishing. Curing, except during hot weather concreting, shall be accomplished by any of the following methods or combination thereof, as approved:

B. Moist Curing

Unformed surfaces shall be covered with burlap or mats, wetted before placing, and overlapped at least 6 inches. Burlap or mats shall be kept continually wet and in intimate contact with the surface. Sand or sawdust will also be acceptable if kept uniformly spread and wet. Where formed surfaces are cured in the forms, the forms shall be kept continually wet. If the forms are removed before the end of the curing period, curing shall be continued as on unformed surfaces, using suitable materials.

C. Impervious-Sheet Curing

All surfaces shall be thoroughly wetted with a fine spray of water and be completely covered with water-proof paper, polyethylene sheeting, or with polyethylene-coated burlap having the burlap thoroughly water-saturated before placing. Covering shall be laid with light colored side up. Covering shall be lapped not less than 12 inches and securely weighted down or shall be lapped not less than 4 inches and taped to form a continuous cover with completely closed joints. Sheets shall be weighted down to prevent displacement or billowing from winds. Coverings shall be folded down over exposed edges of slabs and secured by approved means. Sheets shall be immediately repaired or replaced if tears or holes appear during the curing period.

D. Membrane Forming Compound Curing

The compound shall be applied on damp surfaces as soon as the moisture film has disappeared. The curing compound shall be applied by power spraying equipment using a spray nozzle equipped with a wind guard. The compound shall be applied in a 2 coat continuous operation at coverage of not more than 400 square feet per gallon for each coat or at the manufacturer's recommended coverage, whichever is less. When application is made by hand sprayers, the second coat shall be applied in a direction approximately at right angles to the direction of the first coat. The compound shall form a uniform, continuous, adherent, film that shall not crack, check or peel, and shall be free from pinholes or other imperfections. Surface subjected to heavy rainfall within 3 hours after compound has been applied, or surfaces damaged by subsequent construction operations within the curing period shall be re-sprayed at the rate specified above. Membrane curing compound shall not be used on surfaces that are to receive and subsequent treatment that depend on adhesion or bonding to the concrete. Where membranes forming curing compounds are used, permanently exposed surfaces shall be cured by use of a non-pigmented membrane forming curing compound containing a fugitive dye. Where non-pigmented type curing compounds are used, the concrete surface shall be shaded from the direct rays of the sun for the curing period. Surfaces coated with curing compound shall be kept free of foot and vehicular traffic and from other surfaces of abrasion and contamination during the curing period.

E. Hot Weather Curing

Curing for hot weather concreting shall be limited to moist curing methods. All exposed concrete and all forms shall be covered with burlap or carpet mats, wetted before placing, and overlapped at least 6 inches. Fog sprays shall be used during finishing operations and until the burlap or carpet mats are placed. Protective mats shall remain in place in a wet condition for 7 days. Protective mats shall remain in place for an additional 4 days without the application of water to permit gradual drying of the concrete surfaces. Forms may be removed after 3 days of moist curing provided that protective mats, in a wet condition, are replaced so as to cover all exposed concrete.

3.14 CONCRETE FINISHING

- A. Within 12 hours after forms are removed, surface defects shall be repaired as specified herein. Temperature of the concrete, ambient air, and mortar during repair work including curing shall be above 50 degrees F. Fine and loose material shall be removed. Honeycombs, aggregate pockets, voids over ½ inch in diameter, and holes left by tie rods or bolts shall be cut out to solid concrete, reamed, thoroughly wetted, brush coated with neat cement grout, and filled with mortar. Mortar shall be a stiff mix of 1 part Portland Cement to not more than 2 parts fine aggregate passing the No. 16 mesh sieve, and minimum amount of water using White Portland Cement for all or part of the cement so that when dry, the color of the mortar shall approximately match the adjoining concrete color. Mortar shall

be thoroughly compacted in place. Holes passing entirely through walls shall be completely filled from the inside face by forcing mortar through to the outside face. Holes that do not pass entirely through the wall shall be packed full. Patch work shall be finished flush and in the same plane as adjacent surfaces. Exposed patchwork shall be finished to match adjoining surfaces in texture and color. Patchwork shall be damp-cured for 72 hours.

- B. After the above operations have been completed, a smooth finish shall be given to exterior concrete surfaces that are to be exposed to view. The smooth finish shall consist of thoroughly wetting and then brush coating the surfaces with cement grout composed by volume of 1 part Portland cement to not more than 2 parts fine aggregate passing the No. 30 mesh sieve and mixed with water to the consistency of thick paint. White Portland cement shall be used for all or part of the cement, proportioned as determined by trial mixes, so that the final color of grout, when dry, will be approximately the same as the color of the surrounding concrete. Grout shall be cork or wood floated to fill all pits, air bubbles, and surface holes. Excess grout shall be scraped off with a trowel and the surface rubbed with burlap to remove any visible grout film. The grout shall be kept damp by means of for spray during setting period. The finish of any area shall be completed in the same day and the limits of a finished area shall be made at natural breaks in the finished surface.
- C. Surfaces of slabs on grade shall be float finished after the concrete has been placed, struck-off, consolidated, and leveled. Floating shall begin when the water sheen has disappeared and the set is sufficient to permit operation of a power driven float. The surface shall then be consolidated with power driven floats. Hand floating shall be done in locations not accessible to power floats. No sand, cement, or other substance shall be applied to the surface to absorb water. Excess surface water may be removed by applying burlap or cloth to absorb water. After one floating operation the trueness of the surface shall be checked with a 10 foot straightedge at not less than 2 different angles. All high spots shall be cut down and low spots filled during this procedure so that the maximum variation from a plane surface is 1/4 inch or less. A final floating shall then be done to a uniform, smooth, granular texture. After final floating, the surface shall be scored by drawing a broom or burlap belt across the surface in the direction indicated by the Engineer and to the finish as shown on the Drawings. Water shall not be added to concrete surfaces at any time.

3.15 WALKS, CURBS, GUTTERS AND OTHER SIMILAR EXTERIOR CONCRETE

- A. Walks, curbs, gutters and other similar exterior concrete shall be provided as required by the Drawings. Concrete walks and other exterior concrete shall be placed on subgrades prepared as specified in Section 02200, and shall be built to the grades and lines shown and as required to meet adjoining and/or existing work. Dampen subgrades before applying concrete.

- B. An air entraining admixture shall be added in accordance with the manufacturer's directions so as to produce concrete containing from 4-1/2 percent to 6-1/2 percent of entrained air. The slump shall be not more than 3 inches and not less than 2 inches. The concrete shall have a compressive strength of not less than 4,000 pounds per square inch and the cement content shall be not less than 611 pounds per cubic yard.
- C. Walks and other exterior concrete shall be cured by covering first with sprayed-on curing compound applied immediately after finishing and then also completely covered with an impermeable fiber filled paper for a period of not less than 72 hours.
- D. Exterior concrete work constructed during hot weather shall be protected, in addition to the curing specified above, with Spencer Kellogg Anti-Spalling Compound, or Carter-Waters "Dek-Seal," or equal, applied as soon as conditions will permit after curing and when the concrete is clean and dry. The mixture shall be applied uniformly in two applications, in accordance with the manufacturer's recommendations. The second application shall not be made until after the first coat has been completely absorbed by the concrete.
- E. Expansion joints shall be provided in walks where shown and at intersection walks and buildings. Expansion joints in walks shall be made with 1/2-inch thick premolded, non-extruding expansion joint filler, "Flexcell," or "Meadows," or equal, extending through the full thickness of the concrete except the upper 1/4-inch. There shall be set accurately in place to straight lines and concreted in. Edges of grooves, expansion joints and edges of Walks shall be rounded to a 1/4-inch radius with suitable grooving and edging tools. Walks shall be finished as specified for troweled concrete except that final finishing shall be with wood floats or broomed, as directed, to produce non-slippery surfaces. Direction of final floating or brooming shall be at right angles to the length unless otherwise directed. Completed work shall be finished true to line and grade when tested with a 10 foot straightedge shall not show a variation of more than 1/4-inch from a straight line.

3.16 MISCELLANEOUS CONCRETE WORK

Miscellaneous concrete work shall be done as required by the Drawings and/or as specified.

3.17 TESTS OF CONCRETE

- A. Standard 6-inch diameter compression test cylinders shall be made in the field and tested in the laboratory in accordance with ASTM C31, C39 and C172. Test cylinders shall be made in forms provided by the testing laboratory.

- B. Advance tests of the concrete shall be made. Six standard 6-inch compression cylinders, 3 to be tested in 7 days and 3 at 28 days, shall be made with the proportioning and materials proposed to be used for each of the principal mixes required for the work. The slump shall not be less than the greatest slump expected to be used in the structure for each of the mixes. The tests made on the aggregates, as required above, may be made a part of these tests, if suitably referenced on the reports, which shall be issued for 7 and 28 day tests. These tests shall be repeated, if necessary, because of channel in material or unsatisfactory results. The advance testing may be waived at the request of the Contractor and with the Engineer's approval if the concrete is being produced by an established ready-mix plant with suitable records of mixes and testing and if the plant certifies that it will continue to use the same materials involved in the recorded testing.
- C. During the progress of the work, and for each different mix of concrete, a set of three standard 6-inch concrete cylinders shall be made and tested for each and every day's operation (or 8-hour shift) where more than 5 cubic yards of concrete are placed. Make an additional set of three cylinders for each additional 50 cubic yards of concrete where more than 50 cubic yards are placed in one day for 8-hour shift). The Contractor shall be responsible for seeing that these cylinders are made; cast the cylinders if testing laboratory personnel are not available. The cylinders of each set shall be molded from the same sample of concrete and tested; one at 7 days and one at 28 days. If high-early strength cement is used, then the tests shall be made at 3 and 7 days instead of at 7 and 28 days.
- D. Also, from each sample of concrete used for test cylinders, make one slump test in accordance with ASTM C143 and make one entrained air content test in accordance with ASTM C231. Samples shall be collected in accordance with ASTM C172.
- E. Each cylinder shall be marked with job name, Contractor's name, location of pour and date of pour. Cylinders shall be taken to the laboratory as soon as practicable. Keep cylinders in heavy, tightly sealed, plastic bags.
- F. Tests of concrete shall be made as required in this Section. If any test cylinder shows a strength of less than that required at 28 days, then the concrete represented by such cylinder shall be further tested in accordance with Article 17.3 of ACI 301, except that Paragraph 17.3.2.3 shall not apply. If such further tests show a compressive strength less than required, then the concrete shall be rejected and shall be replaced with new work at the specified strength by the Contractor at his own expense.

3.18 READY MIXED CONCRETE

Ready mixed concrete if used shall comply with these Specifications in all respects and with ASTM C94.

3.19 CONCRETE FILL

Concrete fill to form slopes in channels, hopper bottom shapes in pits, and similar usage, shall be provided as shown and shall conform to all applicable requirements in this Section. Take special care to get good bond to the structural concrete. Surfaces to receive fill shall be thoroughly cleaned of all laitance, droppings and dirt, by sandblasting or chipping, then washed and swept to produce a clean concrete surface free of all foreign matter and all loose particles. Surfaces shall be damp but not wet. Cover surfaces, horizontal and vertical, with sand-cement grout before applying the fill concrete. Finish sand-cement grout before applying the fill concrete. Finish surfaces with a steel trowel finish with sufficient accuracy to prevent liquids from forming puddles on the finished surfaces.

END OF SECTION 03300

Revised August 2006

**KERN-COLEMAN, CO. LLC.
MEASUREMENT AND PAYMENT
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Item No. 11, Fill Ex. Grate Inlet with Concrete: This item shall include abandoning an existing grate inlet by filling it with concrete as shown on the approved plan.

Section III – Pavement and Signage

Item No. 1, 1.5" Asphaltic Concrete Surface Course: This item shall include the installation of 11,600 S.Y. of asphaltic concrete surface course in accordance with the approved plan and section 02500 of the standards and specifications for this project. Subgrade compaction shall be 100% per ASTM-698.

Item No. 2, 7.5" Granite GAB: This item shall include the installation of 11,600 S.Y. of granite graded aggregate base in accordance with the approved plan and section 02500 of the standards and specifications for this project. Subgrade compaction shall be 100% per ASTM-698.

Item No. 3, 24" Suitable Subgrade Material: This item shall include the installation of 7,700 C.Y. of suitable subgrade material in accordance with the approved plan and section 02200 of the standards and specifications for this project. Subgrade compaction shall be 100% per ASTM-698. This item may be reduced if the existing subgrade is found to be suitable.

Item No. 4, Prime Coat: This item shall include the installation of 11,600 S.Y. of bituminous prime coat in accordance with the approved plan and section 02500 of the standards and specifications for this project.

Item No. 5, Sidewalks: This item shall consist of the installation of 9,100 S.F. of concrete sidewalks. Sidewalks are to be comprised of 4" thick 3000 psi fiber reinforced concrete. Expansion joints are required every 4' and shall be 3/4" deep. Subgrade compaction shall be 98% per ASTM D-698. All sidewalks shall be installed according to section 02520 of the standards and specifications for this project. The widths of the sidewalks shall be 6'.

Item No. 6, Flush Header Curb: This item shall include the installation of 1,727 L.F. of flush header curb in accordance with the approved plan and section 02520 of the standards and specifications for this project.

Item No. 7, Pitched Curb and Gutter: This item shall include the installation of 1,088 L.F. of pitched curb and gutter in accordance with the approved plan and section 02520 of the standards and specifications for this project.

Item No. 8, Standard Curb and Gutter: This item shall include the installation of 850 L.F. of standard curb and gutter in accordance with the approved plan and section 02520 of the standards and specifications for this project.

Item No. 9, Proof Roll: This item shall include proof rolling all applicable areas in accordance with section 02500 of the standards and specifications for this project.

Item No. 10, Handicap Signs: This item shall include the installation of (10) handicap signs as shown on the approved plans. Handicap sign construction and installation shall comply with all federal, state and governing agencies code and specifications as well as meet all ADA guidelines. Sign posts and their foundations shall be constructed as to hold signs in a proper and permanent position and to resist swaying in the wind or displacement by vandalism.

KERN-COLEMAN, CO. LLC.
MEASUREMENT AND PAYMENT
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Item No. 11, No Parking Signs: This item shall include the installation of (4) no parking signs as shown on the approved plans. Sign construction and installation shall comply with all federal, state and governing agencies code and specifications. Sign posts and their foundations shall be constructed as to hold signs in a proper and permanent position and to resist swaying in the wind or displacement by vandalism.

Item No. 12, Do Not Enter Signs: This item shall include the installation of (3) do not enter signs as shown on the approved plans. Sign construction and installation shall comply with all federal, state and governing agencies code and specifications. Sign posts and their foundations shall be constructed as to hold signs in a proper and permanent position and to resist swaying in the wind or displacement by vandalism. Sign shall comply with section 2B.34 of the *"Manual on Uniform Traffic Control Devices for Streets and Highways"* latest edition.

Item No. 13, One Way Signs: This item shall include the installation of (2) one way signs as shown on the approved plans. Sign construction and installation shall comply with all federal, state and governing agencies code and specifications. Sign posts and their foundations shall be constructed as to hold signs in a proper and permanent position and to resist swaying in the wind or displacement by vandalism. Sign shall comply with section 2B.37 of the *"Manual on Uniform Traffic Control Devices for Streets and Highways"* latest edition.

Item No. 14, Stop Signs: This item shall include the installation of (5) stop signs in the locations shown on the approved plan. All stop signs are to be comprised of high intensity reflective sheeting. Sign posts and their foundations shall be constructed as to hold signs in a proper and permanent position and to resist swaying in the wind or displacement by vandalism. Minimum stop sign height is 7' from finished grade to the bottom of the sign. Sign shall comply with section 2B.04 of the *"Manual on Uniform Traffic Control Devices for Streets and Highways"* latest edition.

Item No. 15, No Right Turn Signs: This item shall include the installation of (1) no right turn sign in the location shown on the approved plan. Sign posts and their foundations shall be constructed as to hold signs in a proper and permanent position and to resist swaying in the wind or displacement by vandalism. Sign shall comply with section 2B.19 of the *"Manual on Uniform Traffic Control Devices for Streets and Highways"* latest edition.

Item No. 16, Pedestrian Crosswalk Striping: This item shall consist of painting (2) pedestrian crosswalks in the locations shown on the approved plan. Outside stripes are to be 6" wide and internal stripes are to be 12" wide. All striping is to be thermoplastic and conform to GDOT specifications section 653.

Item No. 17, Striping: This item shall include the installation of all pavement striping shown on the approved plan with exception to the pedestrian crosswalks. All striping is to be thermoplastic and conform to GDOT specifications section 653.

Item No. 18, Type "A" Handicap Ramps with Truncated Domes: This item shall include the installation of (4) type "A" handicap ramps in the location shown on the approved plans. Handicap ramp construction shall comply with all federal, state and governing agencies code and specifications. Surfaces shall meet the guidelines of the ADA Standards for Accessibility, Appendix A, Part 36.

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Item No. 19, Type "B" Handicap Ramps with Truncated Domes: This item shall include the installation of (1) type "B" handicap ramp in the location shown on the approved plans. Handicap ramp construction shall comply with all federal, state and governing agencies code and specifications. Surfaces shall meet the guidelines of the ADA Standards for Accessibility, Appendix A, Part 36.

Item No. 20, 24" Stop Bars: This item shall consist of painting (6) stop bars in the locations shown on the approved plan. All stop bars shall be 24" wide and thermoplastic. Length of stop bars may vary.

Item No. 21, Truncated Dome Sections: This item shall include the installation of (4) detectable warning sections. These sections shall consist of raised truncated domes with a diameter of 0.9 inches, a height of 0.2 inches and a center to center spacing of 2.35". The boundary dimensions for each section shall be 4 ft. by 2 ft. The surfaces shall contrast visually with the adjoining surfaces. The polypropylene preformed sections are allowed also.

Section IV – Drainage

Item No. 1, Grass Swale: This item shall include the installation of 1,051 L.F. of grassed swale as shown on the approved plan. Swale side slopes shall be stabilized per the approved erosion and sediment control plans. Depths of swales vary. All grading shall be per section 02200 of the standards and specifications for this project.

Item No. 2, 20' Width Grass Filter Strip: This item shall include the installation of 990 L.F. of 20' width grass filter strip in accordance with the approved plan. Ground cover shall be established immediately after the grass filter strip has been installed. Filter strip areas shall be loosened to a minimum depth of 3" before agricultural lime, fertilizer or sod is applied. Filter strips shall not be constructed until all contributing areas have been stabilized.

Item No. 3, 15' Width Grass Filter Strip: This item shall include the installation of 350 L.F. of 15' width grass filter strip in accordance with the approved plan. Ground cover shall be established immediately after the grass filter strip has been installed. Filter strip areas shall be loosened to a minimum depth of 3" before agricultural lime, fertilizer or sod is applied.

Item No. 4, 10' Rip-Rap Lined Weir: This item shall include the installation of (2) rip-rap lined weirs in accordance with the approved plans and specifications. 8" dia. minimum granite stone rip-rap shall be used on filter fabric. Top of rip-rap shall be set flush with flow line.

Item No. 5, Stormwater Pocket Wetlands: This item shall include the installation of (2) stormwater pocket wetlands in accordance with the approved plans and specifications. Contractor shall refer to sheet C4 of the approved plans for planting and maintenance schedules. All grading shall be per section 02200 of the standards and specifications for this project.

Item No. 6, Remove Ex. Temporary HDPE and 8' Sidewalk Section: This item shall include the removal of a temporary HDPE and 5 S.Y. of sidewalk to install new wooden boardwalk. The removal of these items shall be in accordance with the approved plans and specifications.

Item No. 7, Intersection Swale: This item shall include the installation of 60 L.F. of concrete intersection swale in accordance with the approved plans and specifications. Subgrade compaction shall be 100% per ASTM-698.

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Item No. 8, 18" Class IV RCP: This item shall include the installation of 63 L.F. of 18" class IV reinforced concrete pipe per Section 02400 Part 2.01 titled "*Pipe for Culverts and Storm Drains*" of the Standards and Specifications for this project.

Item No. 9, 18" FES: This item shall include the installation of (2) 18" flared end sections in accordance with the approved plans and section 02400 of the standards and specifications for this project. Reinforcement shall conform to ASTM A-82.

Item No. 10, Gravel Bedding: This item shall include the installation of 7 CY of gravel bedding in accordance with the approved plans and section 02221 of the specifications for this project.

Item No. 11, Select Backfill: This item shall include the installation of 21 CY of select backfill in accordance with the approved plans and section 02221 of the specifications for this project.

Section V – Soil Erosion and Sediment Control

Item No. 1, Silt Fence – Type A: This item shall include the installation of 1,080 L.F. of Type A silt fence. Posts are to be comprised of wood or steel and shall be placed 6' on center.

Item No. 2, Silt Fence – Type C: This item shall include the installation of 2,150 L.F. of Type C silt fence. Posts are to be comprised of steel and shall be placed 6' on center.

Item No. 3, Rip-Rap: This item shall include the installation of 41 S.Y. of rip-rap in accordance with the approved plans and specifications as well as Chapter 6 section III of the Manual for Erosion and Sediment Control in Georgia.

Item No. 4, Tree Protection: This item shall consist of the installation of 800 L.F. of tree protection fence in accordance with the approved plans and specifications. Fence shall be comprised of 4' chain link fencing with galvanized metal posts. Posts shall be set 12" to 18" below grade.

Item No. 5, Dust Control: This item shall include the installation of 15,020 S.Y. of dust control in accordance with the approved plans and specifications as well as Chapter 6 section III of the Manual for Erosion and Sediment Control in Georgia.

Item No. 6, Temporary Seeding: This item shall consist of sowing 15,020 S.Y. of temporary seeding to stabilize all areas that have been graded. The species of grass shall consist of ryegrass, annual lespedeza, or weeping lovegrass.

Item No. 7, Construction Exit: This item shall consist of the installation of (1) construction exit in accordance with the approved plans and specifications as well as Chapter 6 section II of the Manual for Erosion and Sediment Control in Georgia. Aggregate size shall be in accordance with National Stone Association R-2 (1.5 to 3.5 inch stone).

Item No. 8, Retrofits: This item shall consist of the installation of (2) retrofits in accordance with the approved plans and specifications as well as Chapter 6 section II of the Manual for Erosion and Sediment Control in Georgia. All retrofit structures shall be kept clear of trash and debris. This will require continuous monitoring and maintenance, which shall include sediment removal when one-third full. Structures are temporary and shall be removed when project has been re-stabilized.

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Item No. 9, Check Dams: This item shall consist of the installation of (1) check dam in accordance with the approved plans and specifications as well as Chapter 6 section II of the Manual for Erosion and Sediment Control in Georgia. Check dams shall be constructed of graded size 2-10 inch stone. Mechanical or hand placement shall be required to insure complete coverage of entire width of ditch or swale and that the center of dam is lower than the edges.

Item No. 10, Filter Ring: This item shall consist of the installation of (1) filter ring in accordance with the approved plans and specifications as well as Chapter 6 section II of the Manual for Erosion and Sediment Control in Georgia. Filter ring shall be placed a minimum of 4 ft. from structure. For inlets with diameters less than 12", the filter ring shall be constructed of stone no smaller than 3-5 inches (15-30 lb). For inlets with diameters greater than 12", the filter ring shall be constructed of stone no smaller than 10-15 inches (50-100 lb).

Item No. 11, Permanent Vegetative Cover: This item shall consist of sowing 15,020 SY of permanent vegetative cover to stabilize all areas that have been graded. The species of grass shall consist of pensacola bahia, sericea lespedeza, or unhulled bermuda.

Section VI – Miscellaneous Items

Item No. 1, Rope Fence with Wooden Pylons: This item shall consist of installing a rope fence with wooden pylons in accordance with the approved plans and specifications. Existing onsite pylons fronting the beach are to be used before new materials are obtained. Rope or chain material and size are to be approved by Chatham County Engineering prior to installation.

Item No. 2, Wooden Boardwalk: This item shall consist of installing (3) wooden boardwalks in accordance with the approved plans and specifications. All joists shall be hung on galvanized metal joist hangers.

Item No. 3, Wheel Stops: This item shall consist of installing (25) wheel stops in accordance with the approved plans and specifications. Concrete used for this application shall reach 28 day strength of 3,000 psi.

Item No. 4, 6" Pipe Bollards: This item shall consist of installing (4) pipe bollards in accordance with the approved plans and specifications. Steel pipe shall be filled with concrete.

Item No. 5, Landscaping: This item shall consist of installing all landscaping in accordance with the approved plans and specifications. This shall also include the planting of the pocket wetlands, the installation of the non-netted hay mats and the moving of the playground.

#1

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.

#2

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.

#3

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.

#4

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.

#5

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.

LEGAL NOTICE

CC NO. 164232

Invitation to Bid

Sealed Bids will be received until 2:00 P.M. on JULY 28, 2010 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 : 10-12-4-4 KINGS FERRY PARK IMPROVEMENTS.

PRE-BID CONFERENCE: 2:00 P.M., JULY 14, 2010. Conference will be held at the Purchasing & Contracting Office at The Chatham County Citizens Service Center, 1117 Eisenhower Drive, Suite C, Savannah, Georgia .

Bid Packages and Plans are available from the office of the Chatham County Purchasing & Contracting Department, at the above address. **There is a \$50 non-refundable charge for this package.**

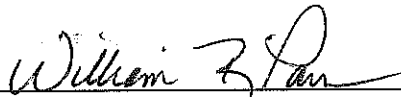
The Bid Package can be also downloaded and printed from the County website: <http://purchasing.chathamcounty.org> All firms requesting to do business with Chatham County must also register on-line at <http://purchasing.chathamcounty.org>.

The Bid Package with Plans must still be picked up and purchased from the Purchasing & Contracting Office.

Bid Bond shall be required at the time of bid. (5% of total bid)
Payment and Performance Bonds (100% of bid) shall 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: June 28, July 12, 2010

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