



DEPARTMENT OF PURCHASING

Winner 2000 – 2004 Achievement of Excellence in Procurement Award National
Association of Purchasing Management
Jerome Noble, Director
July 29, 2005

ADDENDUM #2: "2005 Standby Miscellaneous Pipe Lining and Pipe Bursting – ITB# 05ITB43990YK"

Dear Vendors:

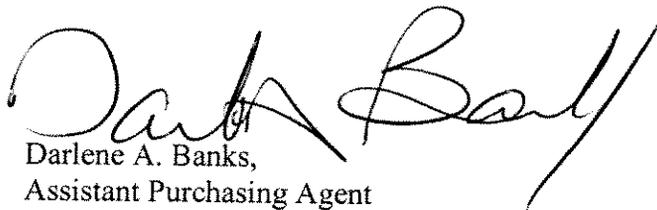
This addendum is referencing ITB #05ITB43990YK, "2005 Standby Miscellaneous Pipe Lining and Pipe Bursting". Attached are Fulton County's responses, changes, corrections, and additions.

The due date of this ITB has been changed to **Monday, August 15, 2005** at 11:00 am local time. Fulton County is not accepting anymore questions at this time. All other documents and information remain as noted in the ITB. Thank you for your cooperation.

For additional information regarding this addendum, contact Darlene A. Banks, Assistant Purchasing Agent at (404) 730-7879 or Fax to (404) 893-1745.

The undersigned Bidder acknowledges receipt of the addendum by returning one signed copy by the due date and time that is stated above. Failure to return a signed copy could render your Bid non-responsive.

Sincerely,


Darlene A. Banks,
Assistant Purchasing Agent

Acknowledgment of Addendums

Company Name: _____ Signature: _____

Name: _____ Title: _____ Date: _____

ADDENDUM # 2
ITB# 05ITB43990YK
2005 STANDBY MISCELLANEOUS PIPE LINING AND PIPE BURSTING CONTRACT

Dear Vendors:

This addendum provides the following: Vendor questions, County response and any bid clarifications.

1. Section 008-67 Specialty Sub-Contractors: "The Contractor shall not award more than seventy-five percent of the work to subcontractors." How is this different than from the County Ordinance that states the prime to do 51% of the work, and will this stay or get changed as the 51% rule did?

*** The 51% rule doesn't apply to construction projects. The Prime must perform a minimum of 25% of the work regarding this contract.**
2. Section 9A (Measurement and Payment); There is a wide range of property values in Fulton County, and with this in place the most expensive will need to be the base line for pricing. Is this the only line on property restoration the county has ever used?

*** These are the only lines used in this contract. Work will be done in easements where sodding, grassing and cleanup is the same for all neighborhoods. Any special conditions or circumstances should be addressed and resolved before construction begins.**
3. Section 9A, 1.02 B; Is this statement saying that an 8ft deep pit and a 20ft deep pit and on and 8", 10", and 12" will cost the same? Is it also that a pit requiring an engineered approval certification will cost the same as an 8ft pit?

*** See Exhibit A, additional bid item (Premium for Excavation over 8 ft) to cover additional cost related to pits and work exceeding 8ft depths. (Excludes reconnecting Service Laterals).**
4. Section 9A, 1.02 B; The by-pass pumping can vary considerably on a sewer line from full pipe to almost no flow. Is this statement telling me to consider a full flow at every line that is to be rehabbed?

*** Yes- Full flow should be assumed to compensate for variable flow during inclement weather.**
5. Section 9A, 1.02 C; Will all these rehab project be where there is no traffic or will some be in a high traffic area? With this statement I can only consider a high traffic flow for each rehabbed? Section 9A, 102 D; Is this requiring a detailed survey's drawing on each rehab.

*** See Exhibit A, additional bid item for traffic control. No detailed survey drawing is required for each project**
7. Section 9-2, Clearing and Grubbing, The specifications call for clearing and grubbing where required, but there is no line item for payment. Will every line to be rehabbed require clearing and grubbing?

*** No- See Exhibit A, additional bid item for Clearing and Grubbing and installation of a gravel/GAB access Rd.**

8. Section 9-3, Trench Excavation and Backfill; 2.04 C, 1; With this statement should all pits be considered to require bracing and shoring.
*** Yes per OSHA code any pit greater than 4 ft deep shall be braced or shored or both. Safety should be the number one concern of any contractor working in Fulton County.**
9. Section 2.04, C3 Should #57 stone be used for all backfill application?
*** No, unless authorized by the assigned Fulton County Engineer, backfill should be the excavated material as long as it can be 98% compacted in road and 95% off road. 57 Stone shall be used only as a pre-approved option.**
10. Section 2.04, C5; There is no unit price in the bid items for Trench Stabilization. What price should be used for this item?
*** This should be included in the pipe lining, bursting and liner bid items. Should compaction be an issue then #57 stone can be used upon approval by an assigned Fulton County Engineer.**
11. Section 9-6, 2.15 Task Allowances; Please explain item C
***This is an allowance to be authorized by the assigned Fulton County Engineer/Project Manager should it be required.**
12. Section 9-10, 1.06 shop Drawings, A4; States that contractor shall submit design cal. For each repair with installation method statement 14 days prior to installation. Will the time frame on these repairs allow that much time?
*** Yes**
13. Where is the specification for the Pipe Bursting and Slip lining?
*** See Exhibit B,**
14. The manhole rehabilitation has an experience requirement of 10,000 manholes. Is the CIPP, Slip lining, and pipe bursting any less important to this project than the manholes? Is there going to be an experience requirement for CIPP, Slip lining, and pipe bursting?
*** Yes, the proposed bidder should have a minimum of 5 years of documented experience and contact references in CIPP, Slip-lining and pipe bursting.**
15. Section 10-4, manhole rehab criteria; Why are all the manhole methods of application cured in place?
*** See Exhibit C, Revised Manhole Rehabilitation Specifications which allows for some spray-on applications.**
16. *** See Exhibit A, Service lateral connections shall be a separate bid item.**
17. Will the time period to do each project be by mutual agreement between the County and the Contractor prior to starting the work?
*** The contractor will be consulted prior to starting the work to determine an equitable duration for the project.**

18. The specs state that retainage will be held. Will that apply on a Project to project basis?
* **Yes**
19. Will the County consider a bid item, by the hour, for work needed to make a manhole water tight prior to applying the rehab coating?
* **No.**
20. Regarding Liquidated Damages, Will there be a grace period based on weather issues?
* **Normal weather delays are factored into the time restraint for each project. Should excessive weather delays occur it will be considered but must be approved by the assigned Fulton County Project Manager.**
21. Will the Manhole category be broken down to on and off road categories?
* **No, See Exhibit A (Traffic Control and Access Rd) for added items that deal with in road and off road issues.**
22. How will payment be made for different size diameters regarding CCTV (Heavy and light cleaning, CIPP and bursting at different depths and diameters)?
* **Cleaning and TV should be included in the bid price for the installed pipe size. See exhibit A regarding Pipe installation and depths.**
23. Will there be an allowance for off road access locations or will access be provided?
* **See Exhibit A, Item for construction access road.**
24. On lining and bursting will the HDPE pipe be IPS or DIPS and what will the DR rating be?
* **See Exhibit B regarding HDPE specifications. Pricing should be for SDR 17/ IPS Pipe**
25. Will there be an item added for step replacement once a manhole has been repaired by Cast in Place?
* **Yes, See Exhibit A , reconnection of steps, should it be required.**

ADDENDUM # 2
ITB# 05ITB43990YK
2005 STANDBY MISCELLANEOUS PIPE LINING AND PIPE BURSTING CONTRACT

EXHIBIT A

**3.1 BID SCHEDULE FOR THE 2005 STANDBY MISCELLANEOUS
PIPE BURSTING AND PIPE LINING CONTRACT**

SUBMITTED BID PRICING SHEET FOR: _____

	DESCRIPTION	QTY.	UNIT COST	AMOUNT
1.	PIPE BURSTING: Bids should include all labor, materials, and equipment necessary to burst existing pipe and pull an HDPE liner <u>to</u> the following pipe sizes. The HDPE Pipe, reconstruction of Manhole inverts, pressure testing and any diversion pumping should be included in the unit bid prices. Launch pits or receiving pits shall be the responsibility of the contractor and included in the bursting cost. IPS SDR-17 Pipe			
A	Burst 8" to 10" diameter	1000 LF	\$	\$
B	Burst 10" to 12" diameter	1000 LF	\$	\$
C	Burst 12" to 12 inch diameter	1000 LF	\$	\$
2.	HDPE PIPE LINING: Bids should include all labor, materials, and equipment to line existing sewer mains with High Density Polyethylene pipe (HDPE). Reconstructing manhole inverts and diversion pumping should be included in the unit bid prices. Launch pits or receiving pits shall be the responsibility of the contractor and included in the pipe installation cost. IPS SDR-17 Pipe			
A	8-IN DIAMETER	1000 LF	\$	\$
B	10-IN DIAMETER	1000 LF	\$	\$
C	12-IN DIAMETER	1000 LF	\$	\$
3.	CAST-IN-PLACE PIPE LINING: Bids should include all labor, materials, and equipment to line existing sewer mains with a resin impregnated liner. Reconstructing manhole inverts and diversion pumping should be included in the bid prices. Launch pits or receiving pits shall be the responsibility of the contractor and included in the pipe installation cost.			
A	8-IN DIAMETER	1000 LF	\$	\$
B	10-IN DIAMETER	1000 LF	\$	\$
C	12-IN DIAMETER	1000 LF	\$	\$
4.	RECONNECTING SERVICE LATERAL TIE-INS TO THE SEWER MAIN: Include excavation to the sewer main, any replacement pipe, and fittings.			
A	0 TO 8 FOOT DEPTH	30 LF		
B	8 FT TO 15FT DEPTHS	30 LF		
C	GREATER THAN 15FT DEPTH	30 LF		

SUBMITTED BID PRICING SHEET FOR: _____

	DESCRIPTION	QTY.	UNIT COST	AMOUNT
5.	EROSION CONTROL			
A	PERMANENT GRASSING	500 SY		
B	SODDING	500 SY		
C	TYPE A SILT FENCE	2000 LF		
D	TYPE C SILT FENCE	2000 LF		
E	PIGS IN A BLANKET	300 LF		
6.	4 FOOT DIAMETER MANHOLE REHABILITATION The work Includes all labor, equipment, tools and materials. The liner must meet or exceed the standards and specifications for each type and depth as stated in the section for Scope of Work.			
A	MANHOLES SUSCEPTIBLE TO LARGE AMOUNTS OF H2S (Drop manholes & manholes with force main discharge connection): Cast In Place and Spray-on application			
1	Cast in Place Up to 8 Foot Manhole Depth	500 VF		
2	Cast in Place 8 Foot to 20 Foot Manhole Depth	500 VF		
3	Cast in Place Greater than 20 Foot Manhole Depth	200 VF		
4	Spray-on Up to 8 Foot Manhole Depth	500 VF		
5	Spray-on 8 Foot to 20 Foot Manhole Depth	500 VF		
6	Spray-on Greater than 20 Foot Manhole Depth	200 VF		
B	MANHOLES IN FLOOD PLAINS SUSCEPTIBLE TO INFILTRATION: Cast In Place application			
1	Up to 8 Foot Manhole Depth	500 VF		
2	8 Foot to 20 Foot Manhole Depth	500 VF		
3	Greater than 20 Foot Manhole Depth	200 VF		
C	MANHOLES IN DANGER OF STRUCTURAL COLLAPSE: Cast In Place application			
1	Up to 8 Foot Manhole Depth	500 VF		
2	8 Foot to 20 Foot Manhole Depth	500 VF		
3	Greater than 20 Foot Manhole Depth	200 VF		

SUBMITTED BID PRICING SHEET FOR: _____

	DESCRIPTION	QTY.	UNIT COST	AMOUNT
7.	PAVING – FULTON COUNTY STANDARD CUT AND PAVE. Includes compacted backfill, minimum ten inch concrete cap and two inch type E asphalt topping.			
A	Fulton County Standard Utility Cut and Pave	200 SY		
8.	MANHOLE STEP RECONNECTIONS- If required, to be installed after cast-in place. Includes water tight seal or water proof grouting around inserts.			
A	Manhole Step reconnection	50 Each	\$	\$
9.	CLEARING AND GRUBBING of SEWER EASEMENT			
A	Clearing and Grubbing	10/ PerAcre	\$	\$
10.	TRENCH STABILIZATION * Must be pre-approved by Fulton County Project Manager when excavated backfill is not suitable			
A	# 57 STONE FOR BACKFILL	5/ TONS	\$	\$
11.	CONSTRUCTION ENTRANCE AND ACCESS RD.			
A	Gravel/GAB Construction entrance/access	1000/SY	\$	\$
12.	TRAFFIC CONTROL			
A	Std. DOT Saftey barrels (10 Per day)	20 DAYS	\$	\$
B	Certified Flagman- 2 man crew	20 DAYS	\$	\$
C	Police Cruiser/Officer- 1 each	10 DAYS	\$	\$
13.	SIDE WALK REPLACEMENT			
A	Remove and replace concrete sidewalk	200 SY	\$	\$
14.	PREMIUM FOR EXCAVATION DEPTHS OVER 8 Ft.: includes all additional expense related to trench stabilization, shoring, engineering, labor, materials and equipment. (Excludes Service Laterals)			
A	Trench/Pitt 8 ft. to 15 ft. depth	20 EA	\$	\$
B	Trench/Pitt greater than 15 ft	20 EA	\$	\$
15.	MOBILIZATION			
A	PER INDIVIDUAL PROJECT	10 EACH	\$	\$

SUBMITTED BID PRICING SHEET FOR: _____

	DESCRIPTION	QTY.	UNIT COST	AMOUNT
16.	TASK ALLOWANCES- WORK TO BE DETERMINED BY A FULTON COUNTY REPRESENTATIVE			
A	UTILITY CONFLICT RESOLUTION	LS	\$ 10,000.00	\$10,000.00
B	SOIL, ASPHALT, AND CONCRETE TESTING	LS	\$ 10,000.00	\$10,000.00
C	CONSTRUCTION SURVEYING	LS	\$ 5,000.00	\$5,000.00
	TOTAL SUBMITTED BID AMOUNT		\$	

For furnishing all products and performing all labor necessary for the construction and completion of assigned miscellaneous water system services and improvements as entitled, the bidder submits a bid in the amount of:

TOTAL BID AMOUNT:

_____ Dollars

2005 STANDBY MISCELLANEOUS PIPE BURSTING AND PIPE LINING CONTRACT

The undersigned hereby agrees to complete all work on the assigned individual projects within the agreed upon days specified in a written Notice To Proceed. He further agrees that the Owner may retain from the monies that are or which may become due the amount of One Thousand (1,000.00) Dollars for each and every consecutive calendar day the completion of the Work may be delayed beyond the time specified, and such amount so to be retained, is hereby agreed to be liquidated damages occurring to the Owner indigent to such delay. Time is of the essence in the performance of the Work. No verbal authorization for the commencement of work is considered valid. Only work authorized in a written Notice to Proceed and signed by the Director of Public Works or an assigned representative will be considered valid.

Signed this _____ day of _____ 2005.

Contractor: _____

By: _____

END OF SECTION 10

ADDENDUM # 2
ITB# 05ITB43990YK
2005 STANDBY MISCELLANEOUS PIPE LINING AND PIPE BURSTING CONTRACT

EXHIBIT B

SECTION 02720

PIPEBURSTING METHOD

PART 1 -- GENERAL

1.01 DESCRIPTION

- A. This specification shall cover the rehabilitation of existing gravity sanitary sewers. Pipe bursting is a system by which the burster unit splits the existing pipe while simultaneously installing a new polyethylene pipe. The new pipe may be of the same size or larger size. The work also involves the reconnection of the existing sewer service house connections, television inspection of the polyethylene pipe and completion of the installation in accordance with the contract documents.
- B. Only pneumatically operated equipment with either front or rear expanders for the proper connection to the polyethylene pipe will be allowed for use. Exception to this requirement will only be considered where a static burster unit is proposed for use on isolated segments of pipeline that are to be burst closely adjacent to building foundations or other sensitive structures and where pneumatic bursting might be detrimental. The pneumatic burster must be used in conjunction with a constant tension hydraulic twin capstain winch of either 20, 10 or 5 tons, the size of the winch depends on the diameter of the pipe to be replaced. In no case is the constant tension on the winch to exceed 20 tons.

1.02 QUALIFICATIONS

- A. The CONTRACTOR shall be certified by the pipe bursting system patent owner, Britishgas – PLC, U.S. Patent 4738565, that such a company is a fully trained and licensed user of the pipe bursting system.
- B. Polyethylene pipe jointing shall be performed by personnel trained in the use of butt-fusion equipment and recommended methods for new pipe connections. Personnel directly involved with installing the new pipe shall receive training in the proper methods for handling and installing the polyethylene pipe. Training shall be performed by a qualified representative.
- C. CONTRACTOR shall hold the County and Engineer harmless in any legal action resulting from patent infringements.
- D. CONTRACTOR or Pipebursting subcontractor shall have:
 - 1. Minimum experience of 5000 L.F. of pipe bursting existing gravity sanitary sewer pipe and replacing with polyethylene pipe within the last three years, AND
 - 2. Minimum experience of 5000 L.F. of pipe bursting replacement experience with polyethylene pipe two sizes greater than the host pipe, e.g. 10-inch to 15-inch diameter, 12-inch to 18-inch diameter, etc, in the last three years.

1.03 STANDARD SPECIFICATIONS

- A. Except as otherwise indicated in this Section of the Specifications, the CONTRACTOR shall comply with the latest edition of the Standard Specifications for Fulton County Public Works Construction

together with the latest adopted editions of the Regional and Fulton County Supplement Amendments, especially concerning the reconstruction of manholes and cleanouts.

B. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:

1. ASTM D 1248 Polyethylene Plastics Molding and Extrusion Materials

1.04 REGULATORY REQUIREMENTS

A. The WORK of this Section shall comply with the current versions, with revisions, of the following:

1. OSHA 29 CFR 1910.146 (permit-required confined-space regulations)

B. All work and testing shall comply with the applicable Federal codes, including Federal Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as amended, and applicable state and local codes and standards; and to the extent applicable with the requirements of the Underwriter's Laboratories, Inc. and the National Electric Code.

1.05 RESPONSIBILITY FOR OVERFLOWS OR SPILLS

A. It shall be the responsibility of the CONTRACTOR to schedule and perform his work in a manner that does not cause or contribute to incidence of overflows or spills of sewage from the sewer system.

B. In the event that the Contractor's work activities contribute to overflows or spills, the CONTRACTOR shall immediately take appropriate action to contain and stop the overflow, clean up the spillage, disinfect the area affected by the spill, and notify the designated CONSTRUCTION MANAGER in a timely manner.

C. CONTRACTOR will indemnify and hold harmless the County for any fines or third-party claims for personal or property damage arising out of a spill or overflow that is fully or partially the responsibility of the CONTRACTOR, including the legal, engineering and administrative expenses of the County in defending such fines and claims.

1.06 SUBMITTALS

A. Submit 10 copies each of the following:

1. Detail drawings and written descriptions of the entire construction procedure to install pipe, bypass sewerage flow and reconnection of sewer service connections, restoration of manhole base and provision for facilitating watertight junction of new pipe to existing and reconstructed manholes.

2. Certification of workmen trained for welding and installing pipe.

3. Written certification that the CONTRACTOR is an approved BG-PLC licensee of the pneumatic bursting system from approved vendor

4. Pre and post repair CCTV inspection reports and CD-ROMs. Post repair reports and CDs shall be made after pipe installation and re-connection of all laterals.

5. An initial schedule shall be submitted to the Project Manager prior to the work beginning at the work site for each repair assigned. Thereafter at the end of each week until the project is complete, the CONTRACTOR shall submit a report in writing comprising:

(a) a list of those activities shown on the current schedule which were begun during the week stating their remaining duration's and their anticipated completion times

(b) a list of those activities begun previously upon which work continued during the week and their anticipated completion times

- (c) a list of those activities begun previously but upon which no work was carried out during week stating their remaining duration's in weeks and their anticipated completion times
 - (d) a list of activities completed during the week
- B. If the anticipated completion time of any activity reported is later than that previously reported or where not previously reported later than the completion time shown on the current schedule the circumstances which in the opinion of the CONTRACTOR have caused the anticipated delay shall be stated. Any other matters not previously reported which in the opinion of the CONTRACTOR may cause delay to the current schedule shall be described. The current schedule is the revised schedule last produced and submitted to the PROJECT MANAGER or where no revised schedule has been submitted the latest revision of the initial schedule submitted.

PART 2 -- PRODUCTS

2.01 MATERIALS

- A. Polyethylene Plastic Pipe shall be high density solid wall polyethylene pipe and meet the applicable requirements of ASTM F714 Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter, ASTM1248, ASTM D3550.
- 1. Sizes of the insertions to be used shall be such to renew the sewer to greater flow capacity.
 - 2. All pipes shall be made of virgin material. No reworked material shall be used except that obtained from the manufacturer's own production of the same formulation.
 - 3. The pipe shall be homogenous throughout and shall be free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.
 - 4. Dimensions Ratios: The minimum wall thickness of the polyethylene pipe shall be SDR 17 throughout. Where required by Engineer, pipes may be tested at ground surface for circularity before installation and welding commences. Circularity will be checked by pulling a closed cylindrical mandrel through the polyethylene pipe. The mandrel shall be at least three times the diameter of the pipe in length and not greater than inside diameter of pipe minus 2 millimeters. Pipes will be rejected which have greater than 5% deformation due to thermal softening.
 - 5. Material color shall be black. Interior of pipe shall have a light reflective color to allow easier/better viewing for television inspection.
 - 6. Manufacturer shall be Chevron, Phillips 66 Driscopipe or equal.

2.02 DELIVERY, STORAGE, AND HANDLING

- A. Transportation, handling, and storage of the polyethylene pipe and fittings shall be as recommended by manufacturer.
- B. If new pipe and fittings become damaged before or during installation, it shall be repaired as recommended by the manufacturer or replaced as required by the Project Manager at the CONTRACTOR's expense, before proceeding further.
- C. Deliver, store and handle other materials as required to prevent damage.

2.03 MATERIAL TESTS

- A. Contractor shall be furnish samples and material tests for compliance with this specification from an independent laboratory to verify the required physical properties and characteristics of supplied materials in accordance with the applicable ASTM Specification. A certificate shall be furnished by the manufacturer, upon request, for all material furnished under this specification.

Polyethylene plastic pipe and fittings may be rejected that does not meet any requirements of this specification. The OWNER shall pay for tests on pipe material which meets specification requirements. CONTRACTOR shall pay for failed tests and re-testing of failed materials

2.04 EQUIPMENT

- A. The pipe bursting tool shall be designed and manufactured to force its way through existing pipe materials by fragmenting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall be pneumatic and shall generate sufficient force to burst and compact the existing pipe line. See manufacturer's specifications for what size tool should be used in what diameter of pipe, as well as parameters of what size tool for percentage of upsize allowed.
- B. The pipe bursting tool shall be pulled through the sewer by a winch located at the upstream manhole. The bursting unit shall pull the polyethylene pipe with it as it moves forward. The bursting head shall incorporate a shield/expander to prevent collapse of the hole ahead of the PE pipe insertion. The pipe bursting unit shall be remotely controlled.
- C. The pipe bursting tool shall be pneumatic. The bursting action of the tool shall increase the external dimensions sufficiently, causing breakage of the pipe at the same time expanding the surrounding ground. This action shall not only break the pipe but also create the void into which the burster can be winched and enables forward progress to be made. At the same time the polyethylene pipe, directly attached to the sleeve on the rear of the burster, shall also move forward.
- D. The burster shall have its own forward momentum while being assisted by winching. A hydraulic winch shall give the burster friction by which it can be move forward. To form a complete operating system, the burster must be matched to a constant tension hydraulic winching system.

2.05 WINCH UNIT

- A. A winch shall be attached to the front of the bursting unit. The winch shall provide a constant tension to the burster in order that it may operate in an efficient manner. The winch shall ensure directional stability in keeping the unit on line.
- B. The winch shall be of the constant tension type but shall be fitted with a direct reading load gauge to measure the winching load which must automatically be maintained at a constant tension at a set tonnage reading. The winch, which shall be hydraulically operated to provide the constant tension throughout the bursting operation, shall supply sufficient cable in one continuous length so that the pull may be continuous between approved winching points.
- C. The winch, cable and cable drum must be provided with safety cage and supports so that it may be operated safely without injury to persons or property.
- D. The CONTRACTOR shall provide a system of guide pulleys and bracing at each manhole to minimize cable contact with the existing sewer between manholes.
- E. The supports to the trench shoring in the insertion pit shall remain completely separate from the winch boom support system and shall be so designed that neither the pipe nor the winch cable shall be in contact with them.

PART 3 -- EXECUTION

3.01 SEWER SERVICE CONNECTIONS

- A. All sewer service connections shall be identified and located prior to pipe insertion. The complete list of service laterals, included relevant footage and diameter of lateral, shall be submitted prior to pipe bursting to the CONSTRUCTION MANAGER for information. Upon commencement, pipe insertion shall be continuous and without interruption from one manhole to another, except as approved by the engineer and/or his representative. Upon completion of insertion of the new pipe,

the CONTRACTOR shall complete the reconnection of all service laterals on the segment within 24 hours of commencing pipe bursting, to minimize any inconvenience to customers.

- B. The preferred method of saddle connection to the main line shall be either by A.) Inserter Tee, Fowler Manufacturing, Oregon, or B.) fusion of saddle connection with one of the following approved systems.
 - 1. Electrofusion saddles as manufactured by Central Plastics shall be installed in accordance with the manufacturers recommended procedures.
 - 2. Conventional Fusion saddles as manufactured by Central Plastics, Phillips Driscopipe, or Plexco shall be installed in accordance with the manufacturers recommended procedures.
- C. Saddle material shall be compatible with that of the main pipe.

3.02 EXISTING FLOW:

- A. The CONTRACTOR shall provide bypass pumping during the pipe bursting/replacement process. The pumps and by-pass lines shall be of adequate capacity and size to handle all flows including peak wet weather flow. All costs for by-pass pumping, required during installation of the pipe shall be included in the rate for pipe replacement by pipe bursting.
- B. The CONTRACTOR shall be responsible for maintaining continuous sanitary sewer service to each and every property connected to the segment of sewer subject to pipe bursting operations. The cost of dealing with tanking, by pass pumping and all other private service flow management shall be included in the rate for pipe replacement.
- C. If sewage backup occurs and enters buildings, the CONTRACTOR shall be responsible for clean-up, dis-infection, repair, property damage as well as all resultant costs and claims.

3.03 PRE-INSTALLATION CCTV SURVEY

- A. Pipelines that will be upgraded by pipe bursting and open cut shall be televised (CCTV) in conformance with the Section for Internal Sewer Preconditioning.
- B. CCTV inspection conditions shall include the following:
 - 1. Preconstruction CDs shall be available for viewing by the Construction Manager before construction begins and throughout the project.
 - 2. CD of the video of the sewer pipe to remain property of the County. CONTRACTOR to retain second copy for his use.
 - 3. All flows tributary to reach of sewer being inspected are to be completely by-passed around the reach during preconstruction inspection if necessary and required by the County.
 - 4. Should any portion of the inspection tapes be of inadequate quality or coverage, as determined by the COUNTY or CONTRACTOR, The CONTRACTOR will have the portion re-inspected and video taped at no additional expense to the COUNTY.

3.04 CONSTRUCTION METHOD

- A. Equipment used to perform the work shall be located away from buildings in order to minimize noise impact which under all circumstances shall be less than 70 dB unless otherwise allowed by the Construction Manager due to circumstances beyond the Contractor of pipebursting subcontractor. A silent engine compartment with the winch shall be provided to reduce machine noise.
- B. The CONTRACTOR shall install all pulleys, rollers, bumpers, alignment control devices and other equipment required to protect existing manholes, and to protect the polyethylene pipe from damage during installation. Lubrication may be used as recommended by the manufacturer. Under no

circumstances shall the pipe be stressed beyond its elastic limit. The winch line must be centered in the existing pipe to be burst with an adjustable boom.

- C. The installed polyethylene pipe shall be allowed to relax and cool following installation in accordance with the manufacturer's recommended time, but not less than four (4) hours, prior to any reconnection of service lines, scaling of the annulus or backfilling of the insertion pit. Sufficient excess length of new pipe, but not less than four (4) inches, shall be allowed to protrude into the manhole to provide for further length reduction. End restraint of pipe ends shall be achieved by means of Central Plastics Electrofusion couplings. The Electrofusion couplings shall be slipped over pipe ends against manhole wall and fused in place. Installation of all electrofusion couplings shall be carried out in accordance with the manufacturers recommended procedures.
- D. Following the relaxation period, the annular space may be sealed. Sealing shall be made with materials approved by the Engineer and/or his representative and shall extend a minimum of eight (8) inches into the manhole wall in such a manner as to form a smooth, uniform, watertight joint. The terminating pipe ends in manholes shall be connected by Central Plastics Electrofusion couplings to eliminate ground water infiltration. Installations of electrofusion couplings shall be installed in accordance with the manufacturers recommended procedures.

3.05 POST-INSTALLATION CCTV SURVEY

- A. Following installation of new pipelines between manholes where bursting has occurred, CCTV inspection shall be carried out in accordance with the requirements of this Contract of Internal Sewer Condition Assessment. The finished tape shall be continuous over the entire length of the sewer between two manholes and shall be completely free from visual defects.
- B. Defects which may affect the integrity or strength of the pipe in the opinion of the Engineer shall be repaired or the pipe replaced at the CONTRACTOR's expense.
- C. Post construction video tape upon completion of reconstruction of each reach of sewer as appropriate with stationing of services indicated. Data and stationing to be on video.
- D. Video tapes to remain property of the county. CONTRACTOR to retain second copy for his use.
- E. Post construction CDroms shall be available to view within one month after project is completed. Post construction CDs shall be submitted to Fulton County before final invoices and any retainage is released.
- F. Should any portion of the inspection tapes be of inadequate quality or coverage, as determined by the COUNTY of CONTRACTOR will have the portion re-inspected and video taped at no additional expense to the COUNTY.

3.06 PIPE JOINING

- A. The polyethylene pipe shall be assembled and joined at the site using the butt-fusion method to provide a leak proof joint in strict accordance with the manufacturer's instructions and ASTM D 2657. Threaded or solvent-cement joints and connections are not permitted.
- B. All equipment and procedures used shall be used in strict compliance with the manufacturer's instructions and recommendations. Fusing shall be accomplished by personnel certified as fusion technicians by a manufacturer of polyethylene pipe and/or fusing equipment.
- C. The butt-fused joint shall be true alignment and shall have uniform roll-back beads resulting from the use of proper temperature and pressure. The joint shall be allowed adequate cooling time before removal of pressure. The fused joint shall be watertight and shall have tensile strength equal to that of the pipe.

- D. All joints shall be subject to acceptance by the engineer and/or his representative prior to insertion. All defective joints shall be cut out and replaced at no cost to the COUNTY. Any section of the pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than ten percent (10%) of the wall thickness, shall not be used and must be removed from the site. However, a defective area of the pipe may be cut out and the joint fused in accordance with the procedures stated above.
- E. Any section of the pipe having other defects such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness or any other defect of manufacturing or handling as determined by the Engineer and/or his representative shall be discarded and not used.
- F. Terminal sections of pipe that are joined within the insertion pit shall be connected with Central Plastics Electrofusion Couplings or connectors with tensile strength equivalent to that of the pipe being joined.

PART 4 -- WARRANTY

4.01 MATERIAL WARRANTY

- A. A written guarantee of 10 years submitted to Fulton County for the specific project shall be provided by the MANUFACTURER against any breakdown of the polyethylene pipe material effectiveness.

- END OF SECTION -

ADDENDUM #2
ITB# 05ITB43990YK
2005 STANDBY MISCELLANEOUS PIPE LINING AND PIPE BURSTING CONTRACT

EXHIBIT C

**MANHOLE REHABILITATION CRITERIA
FOR MANOLES UP TO 8 FEET DEEP**

MANHOLES SUSCEPTIBLE TO LARGE AMOUNTS OF H2S (Drop manholes & manholes with force main discharge connection)	MANHOLES IN FLOOD PLAINS SUSCEPTIBLE TO INFILTRATION	MANHOLES IN DANGER OF STRUCTURAL COLLAPSE
METHOD OF APPLICATION Cured in Place, or Spray on	METHOD OF APPLICATION Cured in Place	METHOD OF APPLICATION Cured in Place
PRIMARY MATERIALS Epoxy, PVC, Fiberglass/Resin, 100% Calcium Aluminate based cement.	PRIMARY MATERIALS Fiberglass/Resin	PRIMARY MATERIALS Fiberglass/Resin
PRECONDITIONING Acceptable to allow basic pre-conditioning to repair surface defects and stop all leaks.	PRECONDITIONING Be able to apply liner without the need to repair all surface defects and stop all leaks	PRECONDITIONING Be able to apply liner without the need to repair all surface defects and stop all leaks
APPLICATION TIME 8 hours or less	APPLICATION TIME 8 hours or less	APPLICATION TIME 8 hours or less
CURING TIME 4 hours or less	CURING TIME 4 hours or less	CURING TIME 4 hours or less
CHEMICAL RESISTANCE * (Redner Test, County Sanitation Districts of Los Angeles) Less than or equal to 5 * Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg weight loss <=2%.	CHEMICAL RESISTANCE * (Redner Test, County Sanitation Districts of Los Angeles) Less than or equal to 5 * Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg weight loss <=2%.	CHEMICAL RESISTANCE * (Redner Test, County Sanitation Districts of Los Angeles) Less than or equal to 5 * Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg weight loss <=2%.
STRUCTURAL PARAMETERS Compressive Strength (psi) - 4,500 Flexural Strength (psi) - 1,500 Tensile Strength (psi) - 1,500 Bond Strength (psi) - 1,500	STRUCTURAL PARAMETERS Compressive Strength (psi) - 4,500 Flexural Strength (psi) - 2,500 Tensile Strength (psi) - 1,500 Bond Strength (psi) - 1,500	STRUCTURAL PARAMETERS Compressive Strength (psi) - 7,000 Flexural Strength (psi) - 5,000 Tensile Strength (psi) - 2,500 Bond Strength (psi) - 1,500

WARRANTY 10 years	WARRANTY 10 years	WARRANTY 10 years
EXPERIENCE 5,000 manholes or more	EXPERIENCE 10,000 manholes or more	EXPERIENCE 10,000 manholes or more

**MANHOLE REHABILITATION CRITERIA
FOR MANHOLES GREATER THAN 8 FEET DEEP, LESS THAN 20 FEET**

MANHOLES SUSCEPTIBLE TO LARGE AMOUNTS OF H₂S (Drop manholes & manholes with force main discharge connection)	MANHOLES IN FLOOD PLAINS SUSCEPTIBLE TO INFILTRATION	MANHOLES IN DANGER OF STRUCTURAL COLLAPSE
METHOD OF APPLICATION Cured in Place, Spray On	METHOD OF APPLICATION Cured in Place	METHOD OF APPLICATION Cured in Place
PRIMARY MATERIALS Epoxy, PVC, Fiberglass/Resin, 100% Calcium Aluminate based cement.	PRIMARY MATERIALS Fiberglass/Resin	PRIMARY MATERIALS Fiberglass/Resin
PRECONDITIONING Acceptable to allow basic pre-conditioning to repair surface defects and stop all leaks.	PRECONDITIONING Be able to apply liner without the need to repair all surface defects and stop all leaks	PRECONDITIONING Be able to apply liner without the need to repair all surface defects and stop all leaks
APPLICATION TIME 8 hours or less	APPLICATION TIME 8 hours or less	APPLICATION TIME 8 hours or less
CURING TIME 4 hours or less	CURING TIME 4 hours or less	CURING TIME 4 hours or less
CHEMICAL RESISTANCE * (Redner Test, County Sanitation Districts of Los Angeles) Less than or equal to 5 * Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg weight loss <=2%.	CHEMICAL RESISTANCE * (Redner Test, County Sanitation Districts of Los Angeles) Less than or equal to 5 * Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg weight loss <=2%.	CHEMICAL RESISTANCE * (Redner Test, County Sanitation Districts of Los Angeles) Less than or equal to 5 * Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg weight loss <=2%.

<p>STRUCTURAL PARAMETERS Compressive Strength (psi) – 4,500 Flexural Strength (psi) – 1,500 Tensile Strength (psi) – 1,500 Bond Strength (psi) - 1,500</p> <p>WARRANTY 10 years</p> <p>EXPERIENCE 5,000 manholes or more</p>	<p>STRUCTURAL PARAMETERS Compressive Strength (psi) – 7,000 Flexural Strength (psi) - 7,500 Tensile Strength (psi) - 5,000 Bond Strength (psi) - 1,500</p> <p>WARRANTY 10 years</p> <p>EXPERIENCE 10,000 manholes or more</p>	<p>STRUCTURAL PARAMETERS Compressive Strength (psi) – 8,500 Flexural Strength (psi) – 10,000 Tensile Strength (psi) – 7,500 Bond Strength (psi) - 1,500</p> <p>WARRANTY 10 years</p> <p>EXPERIENCE 10,000 manholes or more</p>
---	--	---

**MANHOLE REHABILITATION CRITERIA
FOR MANHOLES GREATER THAN 20 FEET DEEP**

<p>MANHOLES SUSCEPTIBLE TO LARGE AMOUNTS OF H2S (Drop manholes & manholes with force main discharge connection)</p> <p>METHOD OF APPLICATION Cured in Place, Spray-on</p> <p>PRIMARY MATERIALS Epoxy, PVC, Fiberglass/Resin, 100% Calcium Aluminate based cement.</p> <p>PRECONDITIONING Acceptable to allow basic pre-conditioning to repair surface defects and stop all leaks.</p> <p>APPLICATION TIME 8 hours or less</p> <p>CURING TIME 4 hours or less</p>	<p>MANHOLES IN FLOOD PLAINS SUSCEPTIBLE TO INFILTRATION</p> <p>METHOD OF APPLICATION Cured in Place</p> <p>PRIMARY MATERIALS Fiberglass/Resin</p> <p>PRECONDITIONING Be able to apply liner without the need to repair all surface defects and stop all leaks</p> <p>APPLICATION TIME 8 hours or less</p> <p>CURING TIME 4 hours or less</p>	<p>MANHOLES IN DANGER OF STRUCTURAL COLLAPSE</p> <p>METHOD OF APPLICATION Cured in Place</p> <p>PRIMARY MATERIALS Fiberglass/Resin</p> <p>PRECONDITIONING Be able to apply liner without the need to repair all surface defects and stop all leaks</p> <p>APPLICATION TIME 8 hours or less</p> <p>CURING TIME 4 hours or less</p>
---	---	--

CHEMICAL RESISTANCE

* (Redner Test, County Sanitation Districts of Los Angeles)

Less than or equal to 5

* **Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg** weight loss <=2%.

STRUCTURAL PARAMETERS

Compressive Strength (psi) – 4,500

Flexural Strength (psi) – 1,500

Tensile Strength (psi) - 1,500

Bond Strength (psi) - 1,500

WARRANTY

10 years

EXPERIENCE

5,000 manholes or more

CHEMICAL RESISTANCE

* (Redner Test, County Sanitation Districts of Los Angeles)

Less than or equal to 5

* **Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg** weight loss <=2%.

STRUCTURAL PARAMETERS

Compressive Strength (psi) – 8,500

Flexural Strength (psi) - 10,000

Tensile Strength (psi) - 7,500

Bond Strength (psi) - 1,500

WARRANTY

10 years

EXPERIENCE

10,000 manholes or more

CHEMICAL RESISTANCE

* (Redner Test, County Sanitation Districts of Los Angeles)

Less than or equal to 5

* **Biogenic Sulfuric Acid Corrosion Test, Sand, University of Hamburg** weight loss <=2%.

STRUCTURAL PARAMETERS

Compressive Strength (psi) – 8,500

Flexural Strength (psi) - 15,000

Tensile Strength (psi) – 10,000

Bond Strength (psi) - 1,500

WARRANTY

10 years

EXPERIENCE

10,000 manholes or more