



REQUEST FOR BID

ANNUAL CONTRACT FOR CURED-IN-PLACE PIPE WORK

2019-SW-05

March 2019

Bid Opening: Tuesday, April 30, 2019 at 2:00 p.m. (local time)
1600 Battle Creek Road, Morrow, Georgia 30260

Non-Mandatory Tuesday, April 16, 2019 at 2:00 p.m. (local time)
Pre-Bid Meeting: 1600 Battle Creek Road, Morrow, Georgia 30260

This procurement has a SLBE goal.

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None issued at this time.

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Division 1

General Information

Section 1: Request for Bids

Clayton County Water Authority
1600 Battle Creek Road
Morrow, Georgia 30260

Name of Project: **Annual Contract for Cured-In-Place Pipe Work**

The Clayton County Water Authority (CCWA) will open sealed bids from licensed contractors at its offices located at 1600 Battle Creek Road, Morrow, Georgia 30260, on **Tuesday, April 30, 2019 at 2:00 p.m. (local time)** for the rehabilitation work. Any bids received after the specified time will not be considered.

A Non-Mandatory pre-bid meeting will be held on **Tuesday, April 16, 2019 at 2:00 p.m. (local time)** at 1600 Battle Creek Road, Morrow, Georgia, 30260.

CCWA encourages Small Local, Minority and Women-Owned businesses to participate and respond to this bid request.

In an effort to promote responsible environmental practices the bid package is available in electronic (Adobe PDF) format and can be requested by calling **770-960-5223**, M-F, 8:00 am - 5:00 pm or by e-mail to **CCWA_Procurement@ccwa.us**. Bidders will need to provide contact information and an email address and any file size transfer limits to insure email transmittals can be made. A hardcopy bid package can also be requested at a cost of \$25.

Clayton County Water Authority

By: John Chafin, Chairman

END OF SECTION

Division 1

General Information

Section 2: General Overview

2.1 Intent and Purpose

The Clayton County Water Authority (CCWA) intends to contract for the annual services of up to two (2) experienced contractors to install cured-in-place pipe (CIPP) and complete other material installations associated with sanitary sewer and stormwater sewer piping systems. CCWA anticipates that the annual value of work to be completed through this contract will be in the range of \$2 to \$2.5 million dollars.

The CCWA intends to award a Primary contract, as well as a Back-Up contract to ensure that CCWA's requests under this annual contract can be performed as needed. A Primary contract will be awarded to the lowest responsive responsible bidder whose bid conforms to the Request for Bids specifications and will be the most advantageous to the CCWA. A Back-Up contract may be awarded to the second lowest responsive responsible bidder whose bid conforms to the Request for Bids specifications and will be the most advantageous to the CCWA. The successful contractors must perform no less than seventy-five percent (75%) of all labor for all cure-in-place pipe work. CCWA strongly encourages the use of CCWA certified SLBEs for subcontracting work under this annual contract. Additionally, CCWA reserves the right to negotiate parity for any and all costs.

Work assignments under this contract will be initially offered to the Primary Contractor. Should productivity and/or quality of work of the Primary Contractor not meet contract specifications and/or CCWA's expectations, then work will be offered to the Back-Up Contractor.

The work to be performed under this contract will be determined and assigned by CCWA on an "as-needed", "when-needed" basis. CCWA does not guarantee any minimum or maximum work quantities under this contract and reserves the right to bid any similar work type of this contract as a separate procurement at its sole discretion.

Where a Project Work Order in an amount of \$100,000 or more, for work considered "Public Works" is issued as defined by O.C.G.A. § 36-91-2, Payment and Performance Bonds will be required prior to the commencement of that work.

Division 1

General Information

Section 2: General Overview

The initial term of this contract will be for twelve (12) months. The contract may be extended for a second and third 12-month period by mutual written consent by both parties with no changes in terms, conditions and bid prices.

2.2 Bid Evaluation

To be considered responsive to this bid, bidders are required to bid on all work items listed on the Bid Form – Pay Item Schedule.

At the time of bid opening, CCWA will provide to each bidder a Typical Job. A Typical Job is a list of “selected work items” and “quantities” that represent a typical job of this contract. The Typical Job “selected work items” and “quantities” will be used for bid evaluation purposes. CCWA will multiply the unit cost for each “selected work item” by the “quantity” to establish an “extended” amount. The addition of all “extended” amounts will determine the “total bid amount”.

Note that not all “work items” as shown on the Bid Form – Pay Item Schedule will be used in the bid evaluation process. Work items on the Bid Form – Pay Item Schedule not used in the award evaluation process will be examined by the CCWA to insure that the unit price is in line with comparable items contained in this bid, and that any unit price that appears to be out of line may be used by the CCWA as a basis of denial/award of the particular bid, and/or the unit price may be negotiated by CCWA. This determination will be at the sole discretion of CCWA.

An evaluation will also be performed to ensure bidders comply with the required submittals. Determination of responsive responsible bidders will be the sole judgment of the CCWA.

2.3 Small Local Business Enterprises (SLBE) – Goal

This procurement has a SLBE participation goal of 3% of all work dollar value during a 12-month period. Potential areas for subcontracting with CCWA certified SLBE vendors include but are not limited to the following:

- Closed circuit television inspection
- General excavation
- Pipe installation – open cut
- Fence work

Division 1

General Information

Section 2: General Overview

- Concrete repair/replacement
- Asphalt repair/replacement

Within three (3) days following the bid opening, no later than **2:00 p.m. local time on Friday, May 3, 2019**, bidders must submit to CCWA via email at ccwa_procurement@ccwa.us the completed "SLBE Sub-Contractor/Supplier Utilization Form" (SLBE-3) based on the "total bid amount", as defined under paragraph 2.2 above. The SLBE-3 Form is provided on Division 2 Section 8 of the RFB documents.

2.4 Addendum

Bidders may submit questions regarding this Request for Bid prior to the bid opening. To be considered, all questions must be submitted via email to **CCWA_Procurement@ccwa.us** no later than by **2:00 p.m. local time on Friday, April 19, 2019**. Any and all responses to bidders' questions will be issued in the form of an addendum by email. All addenda issued shall become part of the bid documents.

END OF SECTION

Division 2

Bid Requirements

Section 1: Instructions to Bidders

These instructions are to be followed by every entity bidding to provide the Clayton County Water Authority (CCWA) with goods and/or services. These instructions constitute an integral part of the Bid, and any Bidder agrees that tender of a Bid constitutes acknowledgment and acceptance of its obligation to adhere to these instructions, which are to be incorporated into and considered part of any contract the Bidder ultimately executes with the CCWA.

1. If there is any question whatsoever regarding any portion of the specifications, it shall be the Bidder's responsibility to seek clarification immediately from the CCWA, as early as possible prior to the bid opening. Regarding public works projects, requests for interpretations of specifications must be made in writing to the department proposing out the project not later than five (5) days prior to receipt of bids.
2. Unless it is otherwise stated in the bid documents, it shall be the responsibility of the bidder to inform itself as to all conditions of the work site and to make and take account thereof in calculating and submitting its bid. Documents may be made available by the CCWA during the bidding process; no warranty of accuracy is made in regard to these documents, and it is the responsibility of the bidder to make its own investigations as to the nature of the work and the conditions under which it shall be performed, and to make its own independent assumptions as to these matters. The burden of anticipating unforeseen circumstances, either hidden or latent, and the conditions of the work site and all related circumstances, and the cost of accommodating therefore should unanticipated circumstances be later encountered shall rest upon the bidder.
3. Pre-bid meeting or any other information session will be held at the location as indicated in the solicitation. Unless indicated otherwise, attendance is not mandatory; although vendors are strongly encouraged to attend. However, in the event the meeting is mandatory, then a representative of the vendor must attend the meeting in its entirety to be considered eligible for solicitation award. Late entry to the meeting will not be allowed.
4. In the event that, after the acceptance of a bid by the Board of Directors of the CCWA, any unsuccessful bidder wishes to contest such action, a written "Notice of Contest" must be filed with the General Manager no later than close of business on the 5th business day after the selection of successful bidder by the Board. Failure to timely file such notice shall forever preclude the filing of a contest of the award, or any civil action in the courts of the State of Georgia or of the United States.

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Bid Requirements

Section 1: Instructions to Bidders

5. Information submitted by the Bidder in the bid process shall be subject to disclosure after bid award in accordance with the Georgia Open Records Act. Proprietary information must be identified and be accompanied by a signed affidavit outlining the redacted information. Entire bids may not be deemed proprietary.
6. Bids must be made on the enclosed Bid Form. Unless otherwise requested, one (1) original and at least two (2) copies of the Bid Form need to be submitted, and these copies must be **typewritten or printed in ink**. All copies of any Bid Forms must be signed in ink by the person or persons authorized to sign the Bid Form. The person signing the Bid Form must initial any changes or corrections.
7. The name of the person, firm, or corporation making the Bid must be printed in ink, along with the Bidder's signature, on all separate sheets of the Bid Form. If a Bid is made by an individual, his name and post office address must be shown. If made by a firm, or partnership, the name and the post office address of each member of the firm or partnership must be shown. If made by a Corporation, the person or persons signing the Bid must show the name of the State under the laws of which the Corporation is chartered and his, or their authority for signing same. The names, titles and addresses of the President, Secretary and the Treasurer and the corporate authority for doing business in this state shall be listed and returned with the Bid Form.
8. All Bids must be hand delivered, delivered by courier service, or mailed via the United States Postal Service. No facsimiles will be accepted. The person, firm, or corporation making the Bid shall submit it in a sealed envelope on or before the date and time specified in the Bid package. The envelope shall be marked "**Sealed Bid**" and carry the Bid title, and date and time of opening as set forth in the Bid package. The envelope shall also bear the name of the party making the Bid and the party's address. Address Bids to *Clayton County Water Authority, 1600 Battle Creek Road, Morrow, Georgia, 30260*. Even if a Bid is not submitted, the Bid Form should be returned signed and with an explanation, otherwise the result will be deletion from the mailing list.
9. If published price books are a part of your Bid, one price book must be included with your Bid Form, and the successful Bidder is required to furnish additional current price books after award of the Bid.
10. Alterations to the documents are strictly prohibited and shall result in automatic disqualification of the Bidder's bid. If there are "exceptions" to the specifications or

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Bid Requirements

Section 1: Instructions to Bidders

comments to any of the solicitation requirements or other language, then the bidder may ask questions regarding those requirements or submit additional documentation as to the variation from the specifications, but may not alter any of the language contained in the solicitation.

11. In the case of goods, the person, firm or corporation making the Bid may Bid all items. All items may be considered separately, at the discretion of the CCWA.
12. Bids for public works whose price exceeds \$100,000.00 must be accompanied by a certified check, cashier's check, or acceptable bid bond in an amount not less than five percent (5%) of the amount bid.
13. Bidders for construction contracts where the laws of Georgia or the United States of America require a license in order to perform such construction must list the license number and class on the face of the bid envelope and must enclose copies of any required license with the bid.
14. When public work is let out for bid, no person shall prevent or attempt to prevent competition in such bid. Such bidders must make an oath filed with the officer who makes payments under the contract that they have not prevented or attempted to prevent competition in the bid process. Such oath must be signed by: if a partnership, all partners and any officer or agent or other person who acted on the partnership's behalf during the bid process; if a corporation, all officers, agents, or other persons who acted for the corporation in the bid process.
15. Bids shall not be withdrawn or cancelled by the bidder past the bid opening date and time. The bidder may make modifications/corrections to the bid by submitting a corrected seal bid but only if the change is prior to the bid opening. The corrected document should be clearly marked that it supersedes the bid originally submitted. No modification or corrections will be allowed subsequent to the bid opening.
16. By tendering a bid, a Bidder agrees to leave the bid open for acceptance by the CCWA for ninety (90) days after the date set for the opening thereof.
17. By tendering a bid, the bidder certifies that the bidder has carefully examined these instructions and the terms and specifications applicable to and made a part of the bid. The Bidder further certifies that the prices shown in any schedule of items on which the Bidder is proposing are in accordance with the conditions, terms and specifications of the bid and that they are aware that any exception taken thereto may disqualify the bid. Bidders are required to inform themselves fully as to the

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Bid Requirements

Section 1: Instructions to Bidders

availability of materials and the conditions relating to construction and labor under which any work will be or is now being performed. No error or misjudgment nor any lack of information on local conditions, general laws or regulations on the part of the Bidder shall merit withdrawal of the bid.

18. Copies of all communication pertaining to bids must be sent to the Contracts, Compliance and Risk Management Section.
19. The purpose of this bid is to establish contract prices. Unit price extension and net total must be shown if applicable. Cash discounts should be indicated separately. Any applicable sales taxes should be included in the unit prices for all materials to be provided by the successful Bidder.
20. Bidders are hereby notified and agree by submission of a Bid Form that if additional items not listed in the Bid Form become necessary and require unit prices not established by the Bid Form, the unit prices of such items shall be negotiated and shall be directly proportional to the established unit prices of similar items in the Bid Form.
21. All prices on goods shall be for delivery, our destination, f.o.b. freight prepaid Jonesboro, Georgia, and/or Morrow, Georgia, unless otherwise shown. Any deliveries shall be made as needed and requested throughout the contract period.
22. Quantities when shown are estimates only, based on anticipated needs. The CCWA reserves the right to purchase more or less based on actual need at contract price. If a Bidder intends to offer minimum or maximum shipment quantities, such intent and such quantities should be specified on the Bid Form. Otherwise, none will be assumed.
23. The time for completion of the work is stated in the Bid Form. Failure to complete the work within this period shall result in payment to the CCWA of liquidated damages in an amount provided for by contract for each calendar day in excess of the Contract time.
24. The Bidder must employ such methods and means in carrying out the work as will not cause any interruption of or interference with any other Contractor.
25. The successful Bidder must comply with the applicable Risk Management Requirements prior to beginning performance, and during the contract period.

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Bid Requirements

Section 1: Instructions to Bidders

26. The Contract between the CCWA and the Contractor shall be executed on a form provided by CCWA and will be subject to all requirements of the contract documents (which include but may not be limited to the Contract, these instructions, any Purchase Orders, and the Risk Management Requirements), and shall form a binding contract between the contracting parties.
27. Failure to execute the Contract, any required Surety Performance and Payment Bonds, or to furnish any required satisfactory proof of carriage of required insurance within ten (10) days from the date of notice of award of the Contract shall be just cause for the annulment of the award and for forfeiture of the bid guaranty to the CCWA, not as a penalty, but in liquidation of damages sustained. At the discretion of the CCWA, the award may then be made to the next lowest responsible vendor, or the work may be re-advertised or constructed by the CCWA.
28. Any Contract and Contract Bonds shall be executed in duplicate.
29. Award of this bid shall be by action of the CCWA Board at its regular monthly meeting.
30. The CCWA reserves the right, with or without notice or cause, to accept any bid regardless of the amount thereof; to reject any bid, or any number of bids; to negotiate with any Bidder for a reduction of or alterations in its bid; to reject all bids and to call for additional bids upon the same or different invitations to bid, plans or specifications; to be sole judge, in its discretion, on all questions as to whether or not a bid complies with the invitation to Bid, the plans or the specifications, and as to the solvency and sufficiency of any and all sureties on all bonds.
31. The apparent low bid for goods shall be considered to be the lowest aggregate total price of specified products at their unit prices times the estimated required quantities of these specified products.
32. Bids received from two (2) or more vendors that are identical in price, delivery and meet the requirements of the bid specifications shall be awarded on the following basis:
 - a. The bid submitted by a vendor who does not have a documented negative vendor performance record.
 - b. The bid submitted by a vendor who is located within Clayton County.
 - c. The bid submitted by a vendor who is certified by our Small Local Business Enterprise Program.

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Bid Requirements

Section 1: Instructions to Bidders

- d. If the tie bids meet all the above criteria, and it is not in the Authority's best interest (at its sole discretion) to split the award, the bid award is based on the toss of a coin by CCWA staff in a public session. The vendors involved will be invited to attend the coin toss at a stated date and time. One or more witnesses from both CCWA Procurement and the Requesting Department may be present. A simple coin toss (called by the vendor listed first in the alphabet) will break the tie and decide the award.
33. While price is the prime criteria, and the CCWA intends to purchase at the lowest responsible bid available, price shall not be the sole criteria utilized by the CCWA in evaluating the bid package submitted. The following criteria shall also be utilized by the CCWA in determining the lowest responsible bid:
 - a. Ability of Bidder to perform in the time frame needed by the CCWA.
 - b. Reputation of the Bidder in its industry.
 - c. Reasonableness of the bid in relation to anticipated costs.
 - d. Ongoing relationships with the CCWA based on above-average prior performance of work with the Authority.
34. Bidders are notified that the Authority reserves the right except in the case of public works contracts to include among the factors considered in awarding the contract the proximity of each Bidder's place of business to any affected Authority facility. The Authority further reserves the right to award the contract to a Bidder other than the Bidder offering the lowest price where: (a) the difference in price between the low Bidder and the preferred Bidder is nominal; and (b) the Authority's Board determines that the preferred bid provides the most cost effective option due to the closer proximity of the preferred Bidder's place of business to the affected Authority facility or facilities. In such a situation, by responding to this bid, the Bidder waives any cause of action against the Authority for frustration of bid or under any similar legal theory; furthermore, the Bidder agrees to pay all costs and expenses, including but not limited to attorney fees, incurred by the Authority in defending against any such claim.
35. It is the policy of the Clayton County Water Authority (CCWA) to promote award of sub-agreements for goods and/or services to qualified small local, minority and women-owned businesses. Bidders are encouraged to solicit small local, minority and women-owned businesses whenever they are potential sources.

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Section 1: Instructions to Bidders

36. Bidders are encouraged to utilize the services and assistance of the U.S. Small Business Administration (SBA), and the office of the Department of Commerce Minority Business Development Agency (MBDA). These agencies can provide assistance in securing the names of qualified minority and women-owned businesses. Additionally, it is encouraged that bidders access certified Small Local Business Enterprise (SLBE) vendors from Clayton County, DeKalb County, and City of Atlanta.

The Georgia Department of Transportation (DOT) has established a list of qualified Disadvantaged Business Enterprises. Information is available online under the tab for "Directories", link for "UCP Directory - Excel" at:

<http://www.dot.ga.gov/PS/Business/DBE>.

The successful Bidder will be asked to provide, along with his Request for Payment each month a list of qualified SLBE and MBE/WBE businesses utilized on this Project.

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT OF 2006

37. Pursuant to the Georgia Security and Immigration Compliance Act of 2006, the successful Contractor understands and agrees that compliance with the requirements of O.C.G.A.13-10-91 and Georgia Department of Labor Rule 300-10-02 are conditions of this bid and contract document. The Contractor further agrees that such compliance shall be attested by the Contractor and any of his Subcontractors by execution of the appropriate Affidavit and Agreement included after the Agreement Form of these documents.

END OF SECTION

Division 2

Bid Requirements

Section 2: Risk Management Requirements

The Contractor will provide minimum insurance coverage and limits as per the following: The Contractor will file with the Authority Certificates of Insurance, certifying the required insurance coverages and stating that each policy has been endorsed to provide thirty (30) day notice to the Authority in the event that coverage is cancelled, non-renewed or the types of coverage or limits of liability are reduced below those required. All bonds and insurance coverage must be placed with an insurance company approved by Authority Management, admitted to do business in the State of Georgia, and rated Secure (“B+” or better) by A.M. Best Company in the latest edition of Property and Casualty Ratings, or rated by Standard & Poors Insurance Ratings, latest edition as Secure (“BBB” or better). Worker’s Compensation self-insurance for individual Contractors must be approved by the Worker’s Compensation Board, State of Georgia and/or Self-Insurance pools approved by the Insurance Commissioner, State of Georgia.

CONTRACTS FOR UP TO \$50,000

Worker’s Compensation – Worker’s Compensation coverage on a statutory basis for the State of Georgia with an Employer’s Liability limit of \$100,000 each Accident, Disease \$100,000 each employee, \$500,000 Disease policy limit.

Automobile Liability – Automobile liability coverage for owned, hired and non-owned vehicles in the amount of \$500,000 combined single limit.

Commercial General Liability – Coverage to be provided on “occurrence” not “claims made” basis. The coverage is to include Contractual liability, Per Project Limit of Liability, losses caused by Explosion, Collapse and Underground (“xcu”) perils, the “Clayton County Water Authority” is to be added as an Additional Insured and Products and Completed Operations coverage is to be maintained for three (3) years following completion of work.

CONTRACTS FOR MORE THAN \$50,000

Worker’s Compensation – Worker’s Compensation coverage on a statutory basis for the State of Georgia with an Employer’s Liability limit of \$1,000,000. The increased Employer’s Liability limit may be provided by an Umbrella or Excess Liability policy.

Automobile Liability - Automobile liability coverage for owned, hired and non-owned vehicles in the amount of \$1,000,000 combined single limit.

Commercial General Liability – Coverage to be provided on “occurrence” not “claims made” basis. The coverage is to include Contractual liability, Per Project Limit of Liability, losses caused by Explosion, Collapse and Underground (“xcu”) perils, the “Clayton County Water Authority” is to be added as an Additional Insured and Products and Completed Operations coverage is to be maintained for three (3) years following completion of work.

Division 2

Bid Requirements

Section 2: Risk Management Requirements

RISK MANAGEMENT REQUIREMENTS (Cont'd)

CONTRACTS FOR UP TO \$50,000

CONTRACTS FOR MORE THAN \$50,000

LIMITS OF LIABILITY:

\$1,000,000	Per Occurrence
\$1,000,000	Personal and Advertising
\$50,000	Fire Damage*
\$5,000	Medical Payments*
\$1,000,000	General Aggregate
\$1,000,000	Products/Completed Operations per Occurrence and Aggregate

**These are automatic minimums*

Owner's Protective Liability – The Authority's Management may, in its discretion, require Owner's Protective Liability in some situations.

Umbrella and/or Excess Liability – The umbrella or Excess Liability Policy may be used to combine with underlying policies to obtain the limits required. The Management of the Authority may elect to require higher limits.

Owner's Protective Liability – The Authority's Management may, in its discretion, require Owner's Protective Liability in some situations.

END OF SECTION

Division 2

Bid Requirements

Section 3: Bid Submittals

3.1 Bid Submittal Requirements:

The following items are required to be included as part of the bid submittal. Failure to include any of these items may result in the bid being deemed non-responsive:

- A. Bid Form – Bidders must submit a hard copy of their completed and signed Bid Form. Additionally, due to the volume of the items on the bid form, on the date of the bid opening no bid amounts will be read out loud by the CCWA; however, copies of the paper submittals will be provided upon request.
- B. Georgia Bid Bond in the amount of \$5,000.00.
- C. Bidder Qualification Information form. A minimum of three references with information as indicated in Division 2, Section 6.
- D. Georgia Security and Immigration Compliance Act of 2006 form.
- E. Contractor Affidavit and Agreement form.
- F. Subcontractor Affidavit form.

If a Contractor/Subcontractor will not be performing any services under this contract, the Contractor/company submitting the bid MUST also complete, sign, date, and have both Affidavit forms notarized and make proper notation of "N/A" - Not Applicable.

CCWA cannot consider any bid which does not include completed affidavits. It is not the intent of this notice to provide detailed information or legal advice concerning the Georgia Security & Immigration Compliance Act of 2006, as amended on May 11, 2009. All Bidders intending to do business with CCWA are responsible for independently apprising themselves and complying with the requirements of that law and its effect on CCWA procurements and their participation in those procurements.

- G. SLBE required forms referred to on Division 2 Section 8 of this RFB, with exception of the SLBE Sub-Contractor/Supplier Utilization Form (SLBE-3 Form) which is due via email to ccwa_procurement@ccwa.us within three (3) days following the bid opening, no later than **Friday, May 3, 2019 at 2:00 p.m. local time.**

Division 2

Bid Requirements

Section 3: Bid Submittals

- H. Copies of any and all license(s) required to perform the work.
- I. Any other items as required in this RFB including but not limited to the items contained in the Instructions to Bidders.
- J. Addenda (if any).

END OF SECTION

Division 2

Bid Requirements

Section 4: Bid Form

Bid of _____
(Hereinafter "Bidder"), organized and existing under the laws of the State of _____,

doing business as _____ (insert "a corporation," "a partnership," or "an individual" or such other business entity designation as is applicable).

To the Clayton County Water Authority (hereinafter "Owner").

In compliance with the Request for Bids, Bidder hereby proposes to perform all Work for **Annual Contract for Cured-In-Place Pipe Work** in strict accordance with the Contract Documents as enumerated in the Request for Bids, within the time set forth therein, and at the prices stated below.

By submission of this bid, Bidder certifies, and in the case of joint bid each party thereto certifies as to the party's own organization that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid with any other Bidder or with any competitor. Bidder also certifies compliance with the Instructions to Bidders.

In submitting this bid, Bidder certifies Bidder is qualified to do business in the State of Georgia as required by laws, rules, and regulations or, if allowed by statute, covenants to obtain such qualification prior to contract award.

Total amounts are products of the unit prices multiplied by the estimated quantities. In the event of a conflict between the amounts and the unit prices, the unit prices shall govern.

CONTRACT EXECUTION:

The undersigned Bidder agrees, if this bid is accepted, to enter into an Agreement with OWNER on the form included in the Documents to perform and furnish Work as specified or indicated in the Documents for the Contract Price derived from the bid and within the times indicated herein and in accordance with the other terms and conditions of the Documents.

Bidder accepts the terms and conditions of the Documents.

INSURANCE:

Bidder further agrees that bid amount(s) stated herein includes specific consideration for the specified insurance coverages.

Division 2

Bid Requirements

Section 4: Bid Form

CONTRACT TIME:

Bidder hereby agrees to execute the agreement within fourteen (14) calendar days of Notice of Award or as specified by CCWA. Each individual project work order shall be completed within the time period as agreed to by both parties at the time of the individual project work order issuance. If said work is not completed within the time frame stated on the individual project work order, the Contractor shall be liable to pay to the Owner, as liquidated damages the amount of \$500.00 per calendar day for each and every day or part of a day thereafter that said work remains substantially incomplete for that particular individual project work order.

SURETY:

If Bidder is awarded an individual project work order for a Public Works project that is \$100,000 or more in value the Contractor under this construction contract for this Bid, will be required to provide Performance and Payment Bonds prior to the commencement of that individual project work order. Such work shall not commence until proper approval of such bonds has been given by CCWA.

BID:

The undersigned proposes to complete, in all respects, sound and conformable with this Contract Document the work for the amounts as shown on the following Bid Form – Pay Item Schedule.

CCWA guarantees no minimum or maximum quantities, and additionally reserves the right to purchase more or less at the unit price, based on actual need.

ADDENDA:

Bidder acknowledges receipt of the following Addenda:

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
1	Mobilization	N/A	2%	N/A
2	Emergency Mobilization	N/A	EA	
3	Performance and Payment Bonds	N/A	EA	
4	PE Stamped Design Calculations	N/A	EA	
5	Pumping 4-inch Pump	Single Pump System Up to 8 Hours	EA	
6		Redundant Pump System Up to 8 Hours	EA	
7		Single Pump System Greater than 8 to 24 Hours	EA	
8		Redundant Pump System Greater than 8 to 24 Hours	EA	
9	Pumping 6-inch Pump	Single Pump System Up to 8 Hours	EA	
10		Redundant Pump System Up to 8 Hours	EA	
11		Single Pump System Greater than 8 to 24 Hours	EA	
12		Redundant Pump System Greater than 8 to 24 Hours	EA	
13	Pumping 8-inch Pump	Single Pump System Up to 8 Hours	EA	
14		Redundant Pump System Up to 8 Hours	EA	
15		Single Pump System Greater than 8 to 24 Hours	EA	
16		Redundant Pump System Greater than 8 to 24 Hours	EA	
17	Pumping 10-inch Pump	Single Pump System Up to 8 Hours	EA	
18		Redundant Pump System Up to 8 Hours	EA	
19		Single Pump System Greater than 8 to 24 Hours	EA	
20		Redundant Pump System Greater than 8 to 24 Hours	EA	
21	Pumping 12-inch Pump	Single Pump System Up to 8 Hours	EA	
22		Redundant Pump System Up to 8 Hours	EA	
23		Single Pump System Greater than 8 to 24 Hours	EA	
24		Redundant Pump System Greater than 8 to 24 Hours	EA	
25	CCTV (Sanitary Sewer Pipe)	With PACP Assessment	LF	
26		Without PACP Assessment	LF	
27	CCTV (Stormwater Pipe)	With PACP Assessment	LF	
28		Without PACP Assessment	LF	
29	CCTV (Standby)	N/A	HR	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
30	Heavy Cleaning (Sanitary Sewer Pipe) Up to 12-in Diameter	N/A	LF	
31	Heavy Cleaning (Sanitary Sewer Pipe) Larger than 12-in to 18-in Diameter	N/A	LF	
32	Heavy Cleaning (Sanitary Sewer Pipe) Larger than 18-in to 24-in Diameter	N/A	LF	
33	Heavy Cleaning (Sanitary Sewer Pipe) Larger than 24-in to 36-in Diameter	N/A	LF	
34	Heavy Cleaning (Sanitary Sewer Pipe) Larger than 36-in to 48-in Diameter	N/A	LF	
35	Heavy Cleaning (Sanitary Sewer Pipe) Larger than 48-in to 60-in Diameter	N/A	LF	
36		Up to 25% of Diameter	LF	
37	Cleaning (Stormwater Pipe) Up to 12-in Diameter	More than 25% to 50% of Diameter	LF	
38		More than 50% of Diameter	LF	
39		Up to 25% of Diameter	LF	
40	Cleaning (Stormwater Pipe) Larger than 12-in to 18-in Diameter	More than 25% to 50% of Diameter	LF	
41		More than 50% of Diameter	LF	
42		Up to 25% of Diameter	LF	
43	Cleaning (Stormwater Pipe) Larger than 18-in to 24-in Diameter	More than 25% to 50% of Diameter	LF	
44		More than 50% of Diameter	LF	
45		Up to 25% of Diameter	LF	
46	Cleaning (Stormwater Pipe) Larger than 24-in to 36-in Diameter	More than 25% to 50% of Diameter	LF	
47		More than 50% of Diameter	LF	
48		Up to 25% of Diameter	LF	
49	Cleaning (Stormwater Pipe) Larger than 36-in to 48-in Diameter	More than 25% to 50% of Diameter	LF	
50		More than 50% of Diameter	LF	
51	Cleaning (Stormwater Pipe) Larger than 48-in Diameter	N/A	HR	
52		Up to 10 Foot Depth to Invert	CF	
53	Cleaning Structure	Greater than 10 Foot Depth to Invert	CF	
54	Pre-Liner Up to 12-in Diameter	N/A	LF	
55	Pre-Liner Greater than 12-in to 18-in Diameter	N/A	LF	
56	Pre-Liner Greater than 18-in to 24-in Diameter	N/A	LF	
57	Pre-Liner Greater than 24-in to 36-in Diameter	N/A	LF	
58	Pre-Liner Greater than 36-in to 48-in Diameter	N/A	LF	
59	Pre-Liner Greater than 48-in to 60-in Diameter	N/A	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
60	Pre-Liner 66-in Diameter	N/A	LF	
61	Pre-Liner 72-in Diameter	N/A	LF	
62	Pre-Liner 78-in Diameter	N/A	LF	
63	Pre-Liner 84-in Diameter	N/A	LF	
64	Pre-Liner 90-in Diameter	N/A	LF	
65	Pre-Liner 96-in Diameter	N/A	LF	
66	Pre-Liner 102-in Diameter	N/A	LF	
67	Pre-Liner 108-in Diameter	N/A	LF	
68	Reinstatement of Existing Services	N/A	EA	
69	CIPP Service Lateral	connection at main and first 6 LF	EA	
70	4-in Diameter	in addition to the first 6 LF	LF	
71	CIPP Service Lateral	connection at main and first 6 LF	EA	
72	6-in Diameter	in addition to the first 6 LF	LF	
73	CIPP 8-in Diameter	6.0 mm base thickness	LF	
74		Cost change for each 1.5mm from base thickness	LF	
75	CIPP 10-in Diameter	6.0 mm base thickness	LF	
76		Cost change for each 1.5mm from base thickness	LF	
77	CIPP 12-in Diameter	7.5 mm base thickness	LF	
78		Cost change for each 1.5mm from base thickness	LF	
79	CIPP 15-in Diameter	9.0 mm base thickness	LF	
80		Cost change for each 1.5mm from base thickness	LF	
81	CIPP 16-in Diameter	9.0 mm base thickness	LF	
82		Cost change for each 1.5mm from base thickness	LF	
83	CIPP 18-in Diameter	9.0 mm base thickness	LF	
84		Cost change for each 1.5mm from base thickness	LF	
85	CIPP 21-in Diameter	10.5 mm base thickness	LF	
86		Cost change for each 1.5mm from base thickness	LF	
87	CIPP 24-in Diameter	12.0 mm base thickness	LF	
88		Cost change for each 1.5mm from base thickness	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
89	CIPP 27-in Diameter	12.0 mm base thickness	LF	
90		Cost change for each 1.5mm from base thickness	LF	
91	CIPP 30-in Diameter	15.0 mm base thickness	LF	
92		Cost change for each 1.5mm from base thickness	LF	
93	CIPP 36-in Diameter	15.0 mm base thickness	LF	
94		Cost change for each 1.5mm from base thickness	LF	
95	CIPP 42-in Diameter	18.0 mm base thickness	LF	
96		Cost change for each 1.5mm from base thickness	LF	
97	CIPP 48-in Diameter	21.0 mm base thickness	LF	
98		Cost change for each 1.5mm from base thickness	LF	
99	CIPP 54-in Diameter	24.0 mm base thickness	LF	
100		Cost change for each 1.5mm from base thickness	LF	
101	CIPP 60-in Diameter	28.0 mm base thickness	LF	
102		Cost change for each 1.5mm from base thickness	LF	
103	CIPP 66-in Diameter	30.0 mm base thickness	LF	
104		Cost change for each 1.5mm from base thickness	LF	
105	CIPP 72-in Diameter	32.5 mm base thickness	LF	
106		Cost change for each 1.5mm from base thickness	LF	
107	CIPP 78-in Diameter	33.0 mm base thickness	LF	
108		Cost change for each 1.5mm from base thickness	LF	
109	CIPP 84-in Diameter	33.5 mm base thickness	LF	
110		Cost change for each 1.5mm from base thickness	LF	
111	CIPP 90-in Diameter	38.0 mm base thickness	LF	
112		Cost change for each 1.5mm from base thickness	LF	
113	CIPP 96-in Diameter	40.5 mm base thickness	LF	
114		Cost change for each 1.5mm from base thickness	LF	
115	CIPP 102-in Diameter	43.0 mm base thickness	LF	
116		Cost change for each 1.5mm from base thickness	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
117	CIPP 108-in Diameter	46.0 mm base thickness	LF	
118		Cost change for each 1.5mm from base thickness	LF	
119	Sampling and Testing	Up to 15-in diameter	EA	
120		Greater than 15-in diameter	EA	
121		Core Sampling	EA	
122	Brush Removal	N/A	SF	
123	Tree Removal	4 inch to 6 inch diameter	EA	
124		Greater than 6 inch to 12 inch diameter	EA	
125		Greater than 12 inch to 24 inch diameter	EA	
126		Greater than 24 inch to 36 inch diameter	EA	
127	Fence Work	Chain-Link / Wire Removal	LF	
128		Chain-Link / Wire Reinstall	LF	
129		Wood Removal	LF	
130		Wood Reinstall	LF	
131	General Excavation	Up to 6 feet deep	CF	
132		Greater than 6 feet to 10 feet deep	CF	
133		Greater than 10 feet to 14 feet deep	CF	
134		Greater than 14 feet to 18 feet deep	CF	
135	General Fill / Backfill	Fill Dirt	CF	
136		Sand	CF	
137		#3, #4, #34, #5, #57 and #89 Stone	CF	
138		Surge Stone	CF	
139		Type 3 Rip Rap	CF	
140	Stone Placement Crushed Stone/Graded Aggregate Base	4 inch thick layer	SF	
141		2 inch thick layer increment	SF	
142	Stone Placement #3, #4, #34, #5, #57 and #89	4 inch thick layer	SF	
143		2 inch thick layer increment	SF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
144	Stone Placement Surge Stone	6 inch thick layer	SF	
145		6 inch thick layer increment	SF	
146	Stone Placement Type 3 Rip Rap	12 inch thick layer	SF	
147		12 inch thick layer increment	SF	
148	Stone Placement Type 1 Rip Rap	Single Layer	SF	
149	Geotextile Fabric Installation	N/A	SF	
150	Sediment Barrier	Silt Fence Type NS	LF	
151		Silt Fence Type S	LF	
152		Hay Bale	LF	
153	Sediment Barrier Removal	N/A	LF	
154	Soil Stabilization	Straw Mulching	SF	
155		Seed and Straw	SF	
156		Seed and matt Blanket	SF	
157		Sod, < 500 SF	SF	
158		Sod, 500 SF and greater	SF	
159	Remove Asphalt Pavement	Up to 4 inch thick layer	SF	
160		Greater than 4 inch to 6 inch thick layer	SF	
161		Greater than 6 inch to 8 inch thick layer	SF	
162		Greater than 8 inch to 10 inch thick layer	SF	
163		Greater than 10 inch to 12 inch thick layer	SF	
164	Remove Concrete Flat Work	Up to 4 inch thick layer	SF	
165		Greater than 4 inch to 6 inch thick layer	SF	
166		Greater than 6 inch to 8 inch thick layer	SF	
167		Greater than 8 inch to 10 inch thick layer	SF	
168		Greater than 10 inch to 12 inch thick layer	SF	
169		Curb and Gutter	LF	
170	Pavement Striping	Line Stripe Up to 6 inch wide	LF	
171	Pavement Marking	Handicap Symbol	EA	
172	Pressure Washing	N/A	SF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
173	Remove Concrete Structure	Wall Construction	SF	
174		Box / Manhole Construction	CF	
175	Remove Brick Structure	Wall Construction	SF	
176		Box / Manhole Construction	CF	
177	Asphalt Patching	3 inch thick layer	SF	
178		1 inch thick layer increment	SF	
179	Asphalt Paving	3 inch thick layer	SF	
180		1 inch thick layer increment	SF	
181	Concrete Curb and Gutter	Up to 24 inch width, square back	LF	
182		Up to 24 inch width, roll back	LF	
183	Concrete Slab-On-Grade	Up to 4 inch thick layer	SF	
184		Greater than 4 inch to 6 inch thick layer	SF	
185		Greater than 6 inch to 8 inch thick layer	SF	
186		Greater than 8 inch to 10 inch thick layer	SF	
187		Greater than 10 inch to 12 inch thick layer	SF	
188		Wire Mesh	SF	
189		Steel Reinforcement - No. 4 Steel Reinforcement	SF	
190		Steel Reinforcement - No. 5 Steel Reinforcement	SF	
191	Pipe Installation - Open Cut PVC, HDPE, CM Up to 8-in Diameter	Point Repair, up to 6 feet deep	EA	
192		Point Repair, greater than 6 feet to 10 feet deep	EA	
193		Point Repair, greater than 10 feet to 14 feet deep	EA	
194		Point Repair, greater than 14 feet to 18 feet deep	EA	
195		Additional Footage, up to 6 feet deep	LF	
196		Additional Footage, greater than 6 feet to 10 feet deep	LF	
197		Additional Footage, greater than 10 feet to 14 feet deep	LF	
198		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
199	Pipe Installation - Open Cut PVC, HDPE, CM Greater than 8-in to 16-in Diameter	Point Repair, up to 6 feet deep	EA	
200		Point Repair, greater than 6 feet to 10 feet deep	EA	
201		Point Repair, greater than 10 feet to 14 feet deep	EA	
202		Point Repair, greater than 14 feet to 18 feet deep	EA	
203		Additional Footage, up to 6 feet deep	LF	
204		Additional Footage, greater than 6 feet to 10 feet deep	LF	
205		Additional Footage, greater than 10 feet to 14 feet deep	LF	
206		Additional Footage, greater than 14 feet to 18 feet deep	LF	
207	Pipe Installation - Open Cut PVC, HDPE, CM Greater than 16-in to 24-in Diameter	Point Repair, up to 6 feet deep	EA	
208		Point Repair, greater than 6 feet to 10 feet deep	EA	
209		Point Repair, greater than 10 feet to 14 feet deep	EA	
210		Point Repair, greater than 14 feet to 18 feet deep	EA	
211		Additional Footage, up to 6 feet deep	LF	
212		Additional Footage, greater than 6 feet to 10 feet deep	LF	
213		Additional Footage, greater than 10 feet to 14 feet deep	LF	
214		Additional Footage, greater than 14 feet to 18 feet deep	LF	
215	Pipe Installation - Open Cut PVC, HDPE, CM Greater than 24-in to 36-in Diameter	Point Repair, up to 6 feet deep	EA	
216		Point Repair, greater than 6 feet to 10 feet deep	EA	
217		Point Repair, greater than 10 feet to 14 feet deep	EA	
218		Point Repair, greater than 14 feet to 18 feet deep	EA	
219		Additional Footage, up to 6 feet deep	LF	
220		Additional Footage, greater than 6 feet to 10 feet deep	LF	
221		Additional Footage, greater than 10 feet to 14 feet deep	LF	
222		Additional Footage, greater than 14 feet to 18 feet deep	LF	
223	Pipe Installation - Open Cut PVC, HDPE, CM Greater than 36-in to 48-in Diameter	Point Repair, up to 6 feet deep	EA	
224		Point Repair, greater than 6 feet to 10 feet deep	EA	
225		Point Repair, greater than 10 feet to 14 feet deep	EA	
226		Point Repair, greater than 14 feet to 18 feet deep	EA	
227		Additional Footage, up to 6 feet deep	LF	
228		Additional Footage, greater than 6 feet to 10 feet deep	LF	
229		Additional Footage, greater than 10 feet to 14 feet deep	LF	
230		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
231	Pipe Installation - Open Cut PVC, HDPE, CM Greater than 48-in to 60-in Diameter	Point Repair, up to 6 feet deep	EA	
232		Point Repair, greater than 6 feet to 10 feet deep	EA	
233		Point Repair, greater than 10 feet to 14 feet deep	EA	
234		Point Repair, greater than 14 feet to 18 feet deep	EA	
235		Additional Footage, up to 6 feet deep	LF	
236		Additional Footage, greater than 6 feet to 10 feet deep	LF	
237		Additional Footage, greater than 10 feet to 14 feet deep	LF	
238		Additional Footage, greater than 14 feet to 18 feet deep	LF	
239	Pipe Installation - Open Cut CM 66-in Diameter	Point Repair, up to 6 feet deep	EA	
240		Point Repair, greater than 6 feet to 10 feet deep	EA	
241		Point Repair, greater than 10 feet to 14 feet deep	EA	
242		Point Repair, greater than 14 feet to 18 feet deep	EA	
243		Additional Footage, up to 6 feet deep	LF	
244		Additional Footage, greater than 6 feet to 10 feet deep	LF	
245		Additional Footage, greater than 10 feet to 14 feet deep	LF	
246		Additional Footage, greater than 14 feet to 18 feet deep	LF	
247	Pipe Installation - Open Cut CM 72-in Diameter	Point Repair, up to 6 feet deep	EA	
248		Point Repair, greater than 6 feet to 10 feet deep	EA	
249		Point Repair, greater than 10 feet to 14 feet deep	EA	
250		Point Repair, greater than 14 feet to 18 feet deep	EA	
251		Additional Footage, up to 6 feet deep	LF	
252		Additional Footage, greater than 6 feet to 10 feet deep	LF	
253		Additional Footage, greater than 10 feet to 14 feet deep	LF	
254		Additional Footage, greater than 14 feet to 18 feet deep	LF	
255	Pipe Installation - Open Cut CM 78-in Diameter	Point Repair, up to 6 feet deep	EA	
256		Point Repair, greater than 6 feet to 10 feet deep	EA	
257		Point Repair, greater than 10 feet to 14 feet deep	EA	
258		Point Repair, greater than 14 feet to 18 feet deep	EA	
259		Additional Footage, up to 6 feet deep	LF	
260		Additional Footage, greater than 6 feet to 10 feet deep	LF	
261		Additional Footage, greater than 10 feet to 14 feet deep	LF	
262		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
263	Pipe Installation - Open Cut CM 84-in Diameter	Point Repair, up to 6 feet deep	EA	
264		Point Repair, greater than 6 feet to 10 feet deep	EA	
265		Point Repair, greater than 10 feet to 14 feet deep	EA	
266		Point Repair, greater than 14 feet to 18 feet deep	EA	
267		Additional Footage, up to 6 feet deep	LF	
268		Additional Footage, greater than 6 feet to 10 feet deep	LF	
269		Additional Footage, greater than 10 feet to 14 feet deep	LF	
270		Additional Footage, greater than 14 feet to 18 feet deep	LF	
271		Pipe Installation - Open Cut CM 90-in Diameter	Point Repair, up to 6 feet deep	EA
272	Point Repair, greater than 6 feet to 10 feet deep		EA	
273	Point Repair, greater than 10 feet to 14 feet deep		EA	
274	Point Repair, greater than 14 feet to 18 feet deep		EA	
275	Additional Footage, up to 6 feet deep		LF	
276	Additional Footage, greater than 6 feet to 10 feet deep		LF	
277	Additional Footage, greater than 10 feet to 14 feet deep		LF	
278	Additional Footage, greater than 14 feet to 18 feet deep		LF	
279	Pipe Installation - Open Cut CM 96-in Diameter		Point Repair, up to 6 feet deep	EA
280		Point Repair, greater than 6 feet to 10 feet deep	EA	
281		Point Repair, greater than 10 feet to 14 feet deep	EA	
282		Point Repair, greater than 14 feet to 18 feet deep	EA	
283		Additional Footage, up to 6 feet deep	LF	
284		Additional Footage, greater than 6 feet to 10 feet deep	LF	
285		Additional Footage, greater than 10 feet to 14 feet deep	LF	
286		Additional Footage, greater than 14 feet to 18 feet deep	LF	
287		Pipe Installation - Open Cut CM 102-in Diameter	Point Repair, up to 6 feet deep	EA
288	Point Repair, greater than 6 feet to 10 feet deep		EA	
289	Point Repair, greater than 10 feet to 14 feet deep		EA	
290	Point Repair, greater than 14 feet to 18 feet deep		EA	
291	Additional Footage, up to 6 feet deep		LF	
292	Additional Footage, greater than 6 feet to 10 feet deep		LF	
293	Additional Footage, greater than 10 feet to 14 feet deep		LF	
294	Additional Footage, greater than 14 feet to 18 feet deep		LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
295	Pipe Installation - Open Cut CM 108-in Diameter	Point Repair, up to 6 feet deep	EA	
296		Point Repair, greater than 6 feet to 10 feet deep	EA	
297		Point Repair, greater than 10 feet to 14 feet deep	EA	
298		Point Repair, greater than 14 feet to 18 feet deep	EA	
299		Additional Footage, up to 6 feet deep	LF	
300		Additional Footage, greater than 6 feet to 10 feet deep	LF	
301		Additional Footage, greater than 10 feet to 14 feet deep	LF	
302		Additional Footage, greater than 14 feet to 18 feet deep	LF	
303		Pipe Installation - Open Cut DI, RC, VC Up to 8-in Diameter	Point Repair, up to 6 feet deep	EA
304	Point Repair, greater than 6 feet to 10 feet deep		EA	
305	Point Repair, greater than 10 feet to 14 feet deep		EA	
306	Point Repair, greater than 14 feet to 18 feet deep		EA	
307	Additional Footage, up to 6 feet deep		LF	
308	Additional Footage, greater than 6 feet to 10 feet deep		LF	
309	Additional Footage, greater than 10 feet to 14 feet deep		LF	
310	Additional Footage, greater than 14 feet to 18 feet deep		LF	
311	Pipe Installation - Open Cut DI, RC, VC Greater than 8-in to 16-in Diameter		Point Repair, up to 6 feet deep	EA
312		Point Repair, greater than 6 feet to 10 feet deep	EA	
313		Point Repair, greater than 10 feet to 14 feet deep	EA	
314		Point Repair, greater than 14 feet to 18 feet deep	EA	
315		Additional Footage, up to 6 feet deep	LF	
316		Additional Footage, greater than 6 feet to 10 feet deep	LF	
317		Additional Footage, greater than 10 feet to 14 feet deep	LF	
318		Additional Footage, greater than 14 feet to 18 feet deep	LF	
319		Pipe Installation - Open Cut DI, RC, VC Greater than 16-in to 24-in Diameter	Point Repair, up to 6 feet deep	EA
320	Point Repair, greater than 6 feet to 10 feet deep		EA	
321	Point Repair, greater than 10 feet to 14 feet deep		EA	
322	Point Repair, greater than 14 feet to 18 feet deep		EA	
323	Additional Footage, up to 6 feet deep		LF	
324	Additional Footage, greater than 6 feet to 10 feet deep		LF	
325	Additional Footage, greater than 10 feet to 14 feet deep		LF	
326	Additional Footage, greater than 14 feet to 18 feet deep		LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
327	Pipe Installation - Open Cut DI, RC, VC Greater than 24-in to 36-in Diameter	Point Repair, up to 6 feet deep	EA	
328		Point Repair, greater than 6 feet to 10 feet deep	EA	
329		Point Repair, greater than 10 feet to 14 feet deep	EA	
330		Point Repair, greater than 14 feet to 18 feet deep	EA	
331		Additional Footage, up to 6 feet deep	LF	
332		Additional Footage, greater than 6 feet to 10 feet deep	LF	
333		Additional Footage, greater than 10 feet to 14 feet deep	LF	
334		Additional Footage, greater than 14 feet to 18 feet deep	LF	
335	Pipe Installation - Open Cut DI, RC, VC Greater than 36-in to 48-in Diameter	Point Repair, up to 6 feet deep	EA	
336		Point Repair, greater than 6 feet to 10 feet deep	EA	
337		Point Repair, greater than 10 feet to 14 feet deep	EA	
338		Point Repair, greater than 14 feet to 18 feet deep	EA	
339		Additional Footage, up to 6 feet deep	LF	
340		Additional Footage, greater than 6 feet to 10 feet deep	LF	
341		Additional Footage, greater than 10 feet to 14 feet deep	LF	
342		Additional Footage, greater than 14 feet to 18 feet deep	LF	
343	Pipe Installation - Open Cut DI, RC Greater than 48-in to 60-in Diameter	Point Repair, up to 6 feet deep	EA	
344		Point Repair, greater than 6 feet to 10 feet deep	EA	
345		Point Repair, greater than 10 feet to 14 feet deep	EA	
346		Point Repair, greater than 14 feet to 18 feet deep	EA	
347		Additional Footage, up to 6 feet deep	LF	
348		Additional Footage, greater than 6 feet to 10 feet deep	LF	
349		Additional Footage, greater than 10 feet to 14 feet deep	LF	
350		Additional Footage, greater than 14 feet to 18 feet deep	LF	
351	Pipe Installation - Open Cut RC 66-in Diameter	Point Repair, up to 6 feet deep	EA	
352		Point Repair, greater than 6 feet to 10 feet deep	EA	
353		Point Repair, greater than 10 feet to 14 feet deep	EA	
354		Point Repair, greater than 14 feet to 18 feet deep	EA	
355		Additional Footage, up to 6 feet deep	LF	
356		Additional Footage, greater than 6 feet to 10 feet deep	LF	
357		Additional Footage, greater than 10 feet to 14 feet deep	LF	
358		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
359	Pipe Installation - Open Cut RC 72-in Diameter	Point Repair, up to 6 feet deep	EA	
360		Point Repair, greater than 6 feet to 10 feet deep	EA	
361		Point Repair, greater than 10 feet to 14 feet deep	EA	
362		Point Repair, greater than 14 feet to 18 feet deep	EA	
363		Additional Footage, up to 6 feet deep	LF	
364		Additional Footage, greater than 6 feet to 10 feet deep	LF	
365		Additional Footage, greater than 10 feet to 14 feet deep	LF	
366		Additional Footage, greater than 14 feet to 18 feet deep	LF	
367	Pipe Installation - Open Cut RC 78-in Diameter	Point Repair, up to 6 feet deep	EA	
368		Point Repair, greater than 6 feet to 10 feet deep	EA	
369		Point Repair, greater than 10 feet to 14 feet deep	EA	
370		Point Repair, greater than 14 feet to 18 feet deep	EA	
371		Additional Footage, up to 6 feet deep	LF	
372		Additional Footage, greater than 6 feet to 10 feet deep	LF	
373		Additional Footage, greater than 10 feet to 14 feet deep	LF	
374		Additional Footage, greater than 14 feet to 18 feet deep	LF	
375	Pipe Installation - Open Cut RC 84-in Diameter	Point Repair, up to 6 feet deep	EA	
376		Point Repair, greater than 6 feet to 10 feet deep	EA	
377		Point Repair, greater than 10 feet to 14 feet deep	EA	
378		Point Repair, greater than 14 feet to 18 feet deep	EA	
379		Additional Footage, up to 6 feet deep	LF	
380		Additional Footage, greater than 6 feet to 10 feet deep	LF	
381		Additional Footage, greater than 10 feet to 14 feet deep	LF	
382		Additional Footage, greater than 14 feet to 18 feet deep	LF	
383	Pipe Installation - Open Cut RC 90-in Diameter	Point Repair, up to 6 feet deep	EA	
384		Point Repair, greater than 6 feet to 10 feet deep	EA	
385		Point Repair, greater than 10 feet to 14 feet deep	EA	
386		Point Repair, greater than 14 feet to 18 feet deep	EA	
387		Additional Footage, up to 6 feet deep	LF	
388		Additional Footage, greater than 6 feet to 10 feet deep	LF	
389		Additional Footage, greater than 10 feet to 14 feet deep	LF	
390		Additional Footage, greater than 14 feet to 18 feet deep	LF	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
391	Pipe Installation - Open Cut RC 96-in Diameter	Point Repair, up to 6 feet deep	EA	
392		Point Repair, greater than 6 feet to 10 feet deep	EA	
393		Point Repair, greater than 10 feet to 14 feet deep	EA	
394		Point Repair, greater than 14 feet to 18 feet deep	EA	
395		Additional Footage, up to 6 feet deep	LF	
396		Additional Footage, greater than 6 feet to 10 feet deep	LF	
397		Additional Footage, greater than 10 feet to 14 feet deep	LF	
398		Additional Footage, greater than 14 feet to 18 feet deep	LF	
399	Pipe Installation - Open Cut RC 102-in Diameter	Point Repair, up to 6 feet deep	EA	
400		Point Repair, greater than 6 feet to 10 feet deep	EA	
401		Point Repair, greater than 10 feet to 14 feet deep	EA	
402		Point Repair, greater than 14 feet to 18 feet deep	EA	
403		Additional Footage, up to 6 feet deep	LF	
404		Additional Footage, greater than 6 feet to 10 feet deep	LF	
405		Additional Footage, greater than 10 feet to 14 feet deep	LF	
406		Additional Footage, greater than 14 feet to 18 feet deep	LF	
407	Pipe Installation - Open Cut RC 108-in Diameter	Point Repair, up to 6 feet deep	EA	
408		Point Repair, greater than 6 feet to 10 feet deep	EA	
409		Point Repair, greater than 10 feet to 14 feet deep	EA	
410		Point Repair, greater than 14 feet to 18 feet deep	EA	
411		Additional Footage, up to 6 feet deep	LF	
412		Additional Footage, greater than 6 feet to 10 feet deep	LF	
413		Additional Footage, greater than 10 feet to 14 feet deep	LF	
414		Additional Footage, greater than 14 feet to 18 feet deep	LF	
415	Internal Point Repair	Longitudinal	EA	
416		Protruding Pipe	EA	
417	Flared End Section Installation	For Pipe up to 16-inch	EA	
418		For Pipe greater than 16-inch to 24-inch	EA	
419		For Pipe greater than 24-inch to 36-inch	EA	
420		For Pipe greater than 36-inch to 48-inch	EA	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
421	Precast Headwall Installation	For Pipe up to 16 Inch	EA	
422		For Pipe greater than 16 Inch to 24 Inch	EA	
423		For Pipe greater than 24 Inch to 36 Inch	EA	
424		For Pipe greater than 36 Inch to 48 Inch	EA	
425		For Pipe greater than 48 Inch to 60 Inch	EA	
426		For Pipe 66 Inch	EA	
427		For Pipe 72 Inch	EA	
428		For Pipe 78 Inch	EA	
429		For Pipe 84 inch	EA	
430		For Pipe 90 inch	EA	
431		For Pipe 96 inch	EA	
432		For Pipe 102 inch	EA	
433		For Pipe 108 Inch	EA	
434		Precast Manhole Installation 4-Foot Diameter	Typical, Up to 6-foot Constructed Height	EA
435	Doghouse, Up to 6-foot Constructed Height		EA	
436	Additional Height		VF	
437	Precast Manhole Installation 5-Foot Diameter	Typical, Up to 6-foot Constructed Height	EA	
438		Doghouse, Up to 6-foot Constructed Height	EA	
439		Additional Height	VF	
440	Precast Manhole Installation 6-Foot Diameter	Typical, Up to 6-foot Constructed Height	EA	
441		Doghouse, Up to 6-foot Constructed Height	EA	
442		Additional Height	VF	
443	Precast Manhole Installation 7-Foot Diameter	Typical, Up to 8-foot Constructed Height	EA	
444		Doghouse, Up to 8-foot Constructed Height	EA	
445		Additional Height	VF	
446	Precast Manhole Installation 8-Foot Diameter	Typical, Up to 10-foot Constructed Height	EA	
447		Doghouse, Up to 10-foot Constructed Height	EA	
448		Additional Height	VF	
449	Concrete Catch Basin Single Wing (GA DOT)	Top Slab	EA	
450		Spillway	EA	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
451	Concrete Catch Basin Double Wing (GA DOT)	Top Slab	EA	
452		Spillway	EA	
453	Concrete Catch Basin Varying Sizes	Top Slab	SF	
454		Spillway	SF	
455	Catch Basin Spillway Throat	Up to 24 inch width	LF	
456	Concrete Structure Top / Lid	6 inch thick	SF	
457		8 inch thick	SF	
458		10 inch thick	SF	
459	Concrete Core	Up to 4-inch diameter core	EA	
460		Greater than 4-inch to 12-inch diameter core	EA	
461		Greater than 12-inch to 18-inch diameter core	EA	
462		Greater than 18-inch to 24-inch diameter core	EA	
463	Brick Work Wall Construction	1 Brick Thick	SF	
464		2 Brick Thick	SF	
465		3 Brick Thick	SF	
466		4 Brick Thick	SF	
467	Ring and Cover Installation	Installation	EA	
468		Additional Height, Per Brick Layer	EA	
469	Manhole/Structure Invert Construction	Cast-in-Place Concrete	EA	
470		Brick and Mortar	EA	
471	Cementitious Invert Lining	Grout Mixed by Hand	CF	
472		Grout Mixed by Plant	CY	
473		Pump Mobilization	EA	
474	Cementitious Grouting	Grout Mixed by Hand	CF	
475		Grout Mixed by Plant	CY	
476		Pump Mobilization	EA	
477	Chemical Grouting	Grout Application	GAL	
478		Pump Mobilization	EA	

Division 2

Bid Requirements

Section 4: Bid Form - Pay Item Schedule

No.	Work Item	Detail	Unit	Unit Cost
479	Hourly Labor	Superintendent	HR	
480		Foreman	HR	
481		Operator	HR	
482		Pipe Layer	HR	
483		Laborer	HR	
484	Hourly Equipment	78,000 # Class Excavator	HR	
485		52,000 # Class Excavator	HR	
486		45,000 # Class Excavator	HR	
487		17,000 # Class Excavator	HR	
488		10,000 # Class Excavator	HR	
489		30,000 # Class Rubber Tired Loader	HR	
490		Rubber Tired Backhoe / Loader	HR	
491		18,000 # Class Track Dozier	HR	
492		Vibratory Soil Compactor (Ride On) Up to 66-inch compaction width	HR	
493		Vibratory Soil Compactor (Remote Controlled) Up to 48-inch compaction width	HR	
494	Utility Truck Fully Equipped with Hand Tools, Air Tools, Cutting Tools, Mudhog Pump, Generator, Air Compressor, Mechanical Tamp	HR		
495	Hydro/Vacuum Excavator (Min. 12-ft Depth Capability)	Hr		
496	Equipment Rental	N/A	10%	N/A
497	Supplied Material	N/A	10%	N/A
498	Specialty Services	N/A	10%	N/A

Submitted by: _____
 COMPANY NAME OF BIDDER

The successful Bidders along with their employees must perform no less than seventy-five percent (75%) of all labor for all **cured-in-place pipe work**. Click the box to the right to acknowledge this requirement.



Division 2

Bid Requirements

Section 4: Bid Form

To be considered responsive, bidders are required to bid on all work items listed on the Bid Form – Pay Item Schedule.

Submitted by:

COMPANY NAME OF BIDDER

By: OFFICER NAME

SIGNATURE

TITLE

(SEAL)

ATTEST

COMPANY ADDRESS

CITY, STATE, ZIP CODE

LICENSE NUMBER (If Applicable)

PHONE NUMBER: _____

WEBSITE: _____

EMAIL ADDRESS: _____

DATE: _____

END OF SECTION

Division 2

Bid Requirements

Section 4: Bid Form

To be considered responsive, bidders are required to bid on all work items listed on the Bid Form - Pay Item Schedule.

Submitted by:

COMPANY NAME OF BIDDER

By: OFFICER NAME

SIGNATURE

TITLE

(SEAL)

ATTEST

COMPANY ADDRESS

CITY, STATE, ZIP CODE

LICENSE NUMBER (If Applicable)

PHONE NUMBER: _____

FAX NUMBER: _____

EMAIL ADDRESS: _____

DATE: _____

END OF SECTION

Division 2 **Bid Requirements**

Section 5: Georgia Bid Bond

BOND NO. _____

KNOW ALL MEN BY THESE PRESENTS, that _____

herein after called the PRINCIPAL, and _____

a corporation duly organized under the laws of the State of _____

having its principal place of business at _____

_____ in the State of _____

and authorized to do business in the State of Georgia as SURETY, are held and firmly bound unto Clayton County Water Authority, as OWNER, hereinafter called the OBLIGEE, in the sum of FIVE THOUSAND DOLLARS (\$5,000.00) for the payment for which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the Principal is herewith submitting his or its Bid for the **Annual Contract for Cured-In-Place Pipe Work** project, and said Bid, by reference thereto, being hereby made a part hereof.

WHEREAS, the PRINCIPAL contemplates submitting or has submitted a Bid to the OBLIGEE for the furnishing of all labor, materials (except those to be specifically furnished by the Owner), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the Bid and the documents, entitled: **Annual Contract for Cured-In-Place Pipe Work**.

WHEREAS, it was a condition precedent to the submission of said Bid that a cashier's check, certified check, or Bid Bond in the amount of FIVE THOUSAND DOLLARS (\$5,000.00) be submitted with said Bid as a guarantee that the Bidder would, if awarded

Division 2

Bid Requirements

Section 5: Georgia Bid Bond

the Contract, enter into a written Contract with the Owner for the performance of said Contract, within 10 consecutive calendar days after written notice having been given of the award of the Contract.

NOW THEREFORE, the conditions of this obligation are such that if the PRINCIPAL within 10 consecutive calendar days after written notice of such acceptance, enters into a written Contract with the OBLIGEE and furnishes a Performance Bond and Payment Bond in an amount equal to 100 percent of the contract amount, satisfactory to the Owner, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the OBLIGEE and the SURETY herein agrees to pay said sum immediately upon demand of the OBLIGEE in good and lawful money of the United States of America, as liquidated damages for failure thereof of said PRINCIPAL.

Signed and sealed this _____ day of _____ 20__.

PRINCIPAL

By _____

SURETY

By _____
Attorney-In-Fact

END OF SECTION

Division 2

Bid Requirements

Section 6: Bidder Qualification Information

COMPANY NAME OF BIDDER: _____

NUMBER OF YEARS IN BUSINESS _____

BUSINESS ADDRESS OF COMPANY: _____

TELEPHONE NUMBER: _____

POINT OF CONTACT NAME: _____

POINT OF CONTACT EMAIL
ADDRESS: _____

COMPANY TAX ID NUMBER: _____

COMPANY WEBSITE: _____

- ENTITY TYPE: Individual/Sole Proprietor Employee Owned Company
 Privately Held Corporation/LLC Partnership
 Publicly Owned Company Attorney
 Other (specify):

NAME OF PRINCIPAL OFFICERS: _____

Division 2

Bid Requirements

Section 6: Bidder Qualification Information

REFERENCES

PROVIDE PROJECT REFERENCES FOR SIMILAR WORK THAT HAS BEEN COMPLETED WITHIN THE LAST 24 MONTHS. FAILURE TO PROVIDE SATISFACTORY REFERENCES WILL RESULT IN THE BID BEING DEEMED NON-RESPONSIVE.

OWNER: _____

CONTACT NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

OWNER: _____

CONTACT NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

OWNER: _____

CONTACT NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

OWNER: _____

CONTACT NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

OWNER: _____

CONTACT NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

END OF SECTION

Division 2

Bid Requirements

Section 7: Contractor Affidavit & Agreement

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT OF 2006

- A. Pursuant to the Georgia Security and Immigration Compliance Act of 2006, the Contractor understands and agrees that compliance with the requirements of O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-.02 are conditions of this Agreement. The Contractor further agrees that such compliance shall be attested by the Contractor through execution of the contractor affidavit required by Georgia Department of Labor Rule 300-10-1-.07, or a substantially similar contractor affidavit. The Contractor's fully executed affidavit is attached hereto as Exhibit ____ and is incorporated into this Agreement by reference herein.

- B. By initialing in the appropriate line below, the Contractor certifies that the following employee-number category as identified in O.C.G.A. § 13-10-91 is applicable to the Contractor:
 - 1. _____ 500 or more employees;
 - 2. _____ 100 or more employees;
 - 3. _____ Fewer than 100 employees.

- C. The Contractor understands and agrees that, in the event the Contractor employs or contracts with any subcontractor or subcontractors in connection with this Agreement, the Contractor shall:
 - 1. Secure from each such subcontractor an indication of the employee-number category as identified in O.C.G.A. § 13-10-91 that is applicable to the subcontractor;
 - 2. Secure from each such subcontractor an attestation of the subcontractor's compliance with O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-1-.02 by causing each such subcontractor to execute the subcontractor affidavit required by Georgia Department of Labor Rule 300-10-1-.08, or a substantially similar subcontractor affidavit. The Contractor further understands and agrees that the Contractor shall require the executed subcontractor affidavit to become a part of the agreement between the Contractor and each such subcontractor. The Contractor agrees to maintain records of each subcontractor attestation required hereunder for inspection by the Clayton County Water Authority at any time."

Contractor _____
Authorized Signature: _____
Name: _____
Title: _____
Date: _____

Division 2

Bid Requirements

Section 7: Contractor Affidavit & Agreement

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 the Clayton County Water Authority has registered with, is participating in, uses, and will continue to use for the duration of the contract, the federal work authorization program - 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), commonly known as E-Verify, in accordance with the applicability provisions established in [O.C.G.A. 13-10-91](#).

The undersigned further agrees that, in connection with the physical performance of services pursuant to this contract with the Clayton County Water Authority, the contractor will only employ or contract with subcontractor(s), who can present a similar affidavit verifying the subcontractor's compliance with [O.C.G.A. 13-10-91](#). Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Clayton County Water Authority within five days of the subcontractor(s) presenting such affidavit(s) to the contractor.

EEV / Basic Pilot Program* User Identification Number
Enter four to seven-digit numbers

Name of Contractor (Printed)

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 _____ 20_____.

Notary Public

My Commission Expires

Division 2

Bid Requirements

Section 7: Contractor Affidavit & Agreement

SUBCONTRACTOR AFFIDAVIT AND AGREEMENT

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 _____ on behalf of the Clayton County Water Authority has registered with, is participating in, uses, and will continue to use for the duration of the contract the federal work authorization program - 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), commonly known as E-Verify, in accordance with the applicability provisions and deadlines established in [O.C.G.A. 13-10-91](#).

The undersigned further agrees that, in connection with the physical performance of services pursuant to this contract with _____ on behalf of the Clayton County Water Authority, the subcontractor will only employ or contract with sub-subcontractor(s), who can present a similar affidavit verifying the sub-subcontractor's compliance with [O.C.G.A. 13-10-91](#). The undersigned further agrees that the Subcontractor will maintain records of such compliance and provide a copy of each such verification to the Contractor within five days of the sub-subcontractor(s) presenting such affidavit(s) to the Sub-contractor.

EEV / Basic Pilot Program* User Identification Number

Enter four to seven-digit numbers

Name of Sub-Contractor (Printed)

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 _____ 20_____.

Notary Public

My Commission Expires

END OF SECTION

Division 2 **Bid Requirements**

Section 8: Small Local Business Enterprises (SLBE) - General Information

8.1 Program Overview

Clayton County Water Authority (CCWA) has implemented a Small Local Business Enterprise Program to promote full and open competition in all government procurement and purchasing. Goals for participation of Small Local Business Enterprises (SLBE's) are set on a contract by contract basis for each specific prime contract with subcontracting possibilities. CCWA wants to ensure that Bidders are non-discriminatory in their process of selecting sub-contractors. CCWA also wants to encourage Bidders to utilize small, minority or woman-owned businesses whenever possible. All forms included in this solicitation must be completed for Bidder to be considered responsive.

SLBE means a locally-based small business operating inside or outside of Clayton County, which meets the following criteria:

- A) Independently owned and operated business concern whose average annual gross receipts for the previous three years must not exceed: (1) Construction Firms – \$18,250,000; (2) Professional Services Firms – \$5,500,000; (3) Architectural Firms – \$3,750,000; (4) Engineering Firms – \$7,500,000, and (5) Goods and Services – less than 250 employees.
- B) Locally based, meaning located and operating in Clayton County or the ten (10) counties of Cherokee, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Rockdale and Spalding for at least one year prior to submitting application for certification.

If a firm is locally-based in one of the counties mentioned above, is currently certified as a small business through Clayton County, the City of Atlanta, DeKalb County, or the Georgia Department of Transportation, and can provide evidence of its certification, the firm will be provisionally accepted as a SLBE, provided that they complete the official certification application for CCWA within two (2) years following the date of provisional certification. If a firm meets these qualifications, but is not currently certified as a small business, then the firm must complete an application for certification with CCWA no later than seven (7) business days following the deadline for bid submission.

SLBE's must perform a commercially useful function, which means performance of provision of real and actual services under the contract or subcontract with CCWA. Factors such as the nature and amount of the work subcontracted; whether the SLBE has the skill and expertise to perform the work for which it has been certified; whether the SLBE actually performs, manages or supervises the

Division 2 **Bid Requirements**

Section 8: Small Local Business Enterprises (SLBE) - General Information

work; and whether the SLBE intends to purchase commodities and/or services from a non-SLBE and simply resell them will be considered in determining if the SLBE is performing a commercially useful function.

No substitution/replacement for any SLBE Subcontractor, vendor, or previously selected Subcontractor/vendor by the Prime shall be made without written notification to CCWA and the approval by CCWA. A Prime cannot arbitrarily terminate a SLBE Subcontractor and self-perform the work without requesting a waiver and written approval from CCWA in advance.

SLBE Subcontractors can be replaced if they are unable or unwilling to perform the contracted work, or for other appropriate reasons, which are documented in writing. If it appears that the SLBE subcontracting requirement cannot be achieved, the Prime Contractor shall immediately notify CCWA in writing accompanied by the appropriate documentation. Good Faith Effort used to try to meet at least a portion of the requirement should be documented and submitted to CCWA for evaluation. All Prime Contractors must use the "Request for SLBE Subcontractor Removal/Substitution Form" which is set form herein as "SLBE-6."

Although participation in the SLBE program is not a requirement to participate in contracting with CCWA, it is a requirement to comply with making the "good faith effort" procedures and forms as outlined in the following sections.

If the participation does not meet the SLBE goals, the bidder will be required to submit evidence demonstrating that "good faith efforts" were made to meet the goal.

8.2 SLBE Required Forms

This package contains the following forms that Bidders are required to submit along with their bids (in addition to general contractor forms):

- A) SLBE-1 – Covenant of Non-Discrimination: The signed agreement stating that the firm will not discriminate on the basis of a firm's size (revenue or employee count) with regard to prime contracting, subcontracting, or partnering opportunities.
- B) SLBE-2 – Sub-Contractor Contact Form: A list of all firms contacted to participate as SLBE sub-contractors/suppliers on a contract.
- C) SLBE-3 – SLBE Sub-Contractor/Supplier Utilization Form: A list of all firms procured as SLBE sub-contractors/suppliers to be utilized on a contract.

Division 2 **Bid Requirements**

Section 8: Small Local Business Enterprises (SLBE) - General Information

- D) SLBE-4 – Statement of Good Faith Efforts (Including the Checklist): Documented efforts to seek and procure the utilization of SLBE's as sub-contractors/suppliers on a contract where a goal is required.

To be submitted post-award:

- E) SLBE-5 – Post Award – Monthly SLBE Participation Report – Contract Goal: Report detailing percentage of SLBE participation (work performed) and payments to SLBE's on a contract.
- F) SLBE-6 – Request for Subcontractor Removal/Substitution Form: Required to fill out and obtain approval if a SLBE subcontractor is being substituted following award.

By signing the bid, the bidder is certifying that he/she has complied with the requirements of this program. Please contact Contracts, Compliance and Risk Management at ccwa_slbe_program@ccwa.us for a list of certified SLBE's. The list is also available through www.ccwa.us, under the tab for "Procurement", section for "Small Local Business Program".

8.3 Participation Goal

The participation goal for this procurement is **3%** of all work dollar value during a 12-month period.

Division 2 **Bid Requirements**

Section 8: Small Local Business Enterprises (SLBE) - General Information

FORM SLBE-1

COVENANT OF NON-DISCRIMINATION

The undersigned understands that it is the policy of the Clayton County Water Authority (CCWA) to promote full and equal business opportunity for all persons doing business with CCWA. The undersigned covenants that we have not discriminated on the basis of a firm's revenue or employee count with regard to prime contracting, subcontracting or partnering opportunities. The undersigned further covenants that we have completed truthfully and fully the required forms SLBE-2, SLBE-3 and SLBE-4. Set forth below is the signature of an officer of the proposing entity with CCWA to bind the entity.

I, _____, _____ (Name, Title), on behalf of
_____ (Company),

by my signature below, do hereby promise:

1. To adopt the policies of Clayton County relating to equal opportunity in contracting on projects and contracts funded, in whole or in part, with funds of CCWA;
2. Not to otherwise engage in discriminatory conduct;
3. To provide a discrimination-free working environment;
4. That this Covenant of Non-Discrimination shall be continuing in nature and shall remain in full force and effect without interruption; and
5. That this Covenant of Non-Discrimination shall be incorporated by reference into any contract or portion thereof which we may hereafter obtain.

We understand that our failure to satisfactorily discharge any of the promises of non-discrimination as made and set forth herein shall constitute a material breach of contract.

Signature of Attesting Party

Title of Attesting Party

On this _____ day of _____, 20_____, before me
appeared _____, the person who signed the above
covenant in my presence.

Notary Public

My Commission Expires

[Seal]

FORM SLBE-2

SUB-CONTRACTOR CONTACT FORM – BID DISCOUNT

INSTRUCTIONS TO CONTRACTORS

The prime contractor must complete and sign the sub-contractor contact form and submit the completed and signed form with the bid. **Failure to submit this form may result in the bid being deemed nonresponsive.**

SLBE Prime Contractors: If you are the prime contractor on the project AND also the SLBE on the project and will NOT use any other SLBE firms as sub contractors, check the box at the top of the form and sign the form.

1. Name of contractor/supplier: Provide name of the contractor or supplier you contacted to perform on the contract.
2. Contact Name, Address and Phone Number: Provide the contact information of the contractor/supplier you contacted.
3. County of Clayton Business License: State if the contractor/supplier you contacted is a Clayton County Licensed business.
4. Type or work solicited for: Describe the type of work for which you are soliciting from the contractor/supplier.
5. Business Ownership (SLBE/non-SLBE): State whether the contractor/supplier you contacted is an SLBE or non-SLBE.
6. Results of Contact: Describe the results of your contact.
7. Sign and date the form.

FORM SLBE-2

SUB-CONTRACTOR CONTACT FORM

List all sub-contractors or suppliers (SLBE and Non-SLBE) that were contacted regarding this project.

IF THE PRIME IS THE SLBE ON THE PROJECT CHECK THE BOX

Name of Sub-Contractor/ Supplier	Contact Name, Address and Phone Number	County of Clayton Business License? (Yes or No)	Type of Work Solicited for	Business Ownership <i>(Enter SLBE or Non SLBE)</i>	Results of Contact
Company ABC	123 Main Street Morrow, GA 30260 770-123-4698	Yes	Hauling	SLBE	Will perform as sub

FORM SLBE-2

SUB-CONTRACTOR CONTACT FORM – Cont'd

List all sub-contractors or suppliers (SLBE and Non-SLBE) that were contacted regarding this project.

Name of Sub-Contractor/ Supplier	Contact Name, Address and Phone Number	County of Clayton Business License? (Yes or No)	Type of Work Solicited for	Business Ownership <i>(Enter SLBE or Non SLBE)</i>	Results of Contact

Bidder's Name: _____ **Project Name:** _____

Signature: _____ **Date:** _____

FORM SLBE-3
SMALL LOCAL BUSINESS ENTERPRISE PROJECT PARTICIPATION PLAN
SUB-CONTRACTOR/SUPPLIER UTILIZATION
INSTRUCTIONS TO CONTRACTORS

The prime contractor must complete the project participation plan for sub-contractor/supplier utilization and submit the form with the bid. **Failure to submit this form may result in the bid being deemed nonresponsive.**

1. Name of contractor/supplier: Provide name of the contractor or supplier you contacted to perform on the project.
2. Certified as SLBE: State if the subcontractor/supplier to be used on the project is an SLBE.
3. Which County?: If you are using an SLBE on the project, state in which county the SLBE is located.
4. NAIC or NIGP code: List the NAIC/NIGP code that relates to the service or work to be performed by the subcontractor/supplier.
5. Type of work to be performed: Describe the type of proposed work to be performed by the subcontractor/supplier.
6. Certification number and expiration date: If using an SLBE, provide the SLBE certification number and expiration date.
7. Estimated dollar value of work: Provide the estimated dollar value of the work to be performed by the subcontractor/supplier on the project.
8. Percentage of Total Bid Amount: Enter the estimated % of the total bid amount for which the SLBE will be paid.

Estimated Dollar Value of the Work / Total Bid Amount = % of Total Bid Amount

FORM SLBE-3

SUB-CONTRACTOR/SUPPLIER UTILIZATION FORM

List *all* sub-contractors and suppliers, including lower tiers, to be used on this project.

Name of Sub-contractor/ Supplier	Certified as Small Local Business Enterprise (SLBE)- Yes or No	If SLBE, which county-Clayton, Cherokee, Cobb, DeKalb, Douglas, Fayette, Fulton, Henry, Gwinnett, Rockdale, Spalding	NIAC or NIGP Code	Type of Work to be Performed	SLBE Certification No. and Expiration Date	Estimate Dollar (\$) Value of Work	Percentage of Total Bid Amount
Company ABC	Yes	Clayton	96239	Hauling	SLBE-465-12 1/15/2017	\$4200	8.4%

Total Estimate SLBE Sub-contractor % _____

Bidder's Company Name: _____ **Date:** _____

Bidder's Contact Number: _____ **Project Name:** _____

Signature: _____

Division 2 **Bid Requirements**

Section 8: Small Local Business Enterprises (SLBE) - General Information

FORM SLBE-4

STATEMENT OF GOOD FAITH EFFORTS

Instructions:

If you will not meet the Small Local Business Enterprises (SLBE) goal set forth in the RFB, in addition to the information included on the SLBE Form-2 – Sub-contractor Contact Form submitted with your bid, please provide a narrative explanation of why you cannot meet the SLBE goal and the steps taken to include SLBE's in your bid. Describe specific actions (i.e. phone calls, etc.). Please provide copies of any solicitation notices sent, whether by email, fax or mail, and the amount of time given for response. Describe efforts to follow up initial communications. Identify the individuals from your organization who performed these activities. Attach additional pages as needed.

CERTIFICATION OF GOOD FAITH EFFORTS

I hereby attest that I have exercised good faith efforts to meet the Small Local Business Enterprise goals for this bid. Despite such good faith efforts, I have not been able to meet the SLBE goal for this bid.

Authorized Signature

Date

Name and Title (typed or printed)

Name of Firm

Division 2

Bid Requirements

Section 8: Small Local Business Enterprises (SLBE) - General Information

FORM SLBE-4 (Cont'd)

STATEMENT OF GOOD FAITH EFFORTS

Checklist

A Bidder or Proposer that does not meet CCWA's SLBE participation goal is required to demonstrate that it made "good faith efforts." Please indicate whether or not any of the following actions were taken:

- | | <u>YES</u> | <u>NO</u> | |
|-----|--------------------------|--------------------------|--|
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | Attendance at a pre-bid meeting, if any, scheduled by CCWA to inform SLBE's of subcontracting opportunities under a given solicitation; Advertisement for solicitation of SLBE's in general circulation media, trade association publications, and minority-focus media, to provide notice of subcontracting opportunities. |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | Advertisement in general circulation media at least seven (7) days prior to Bid or proposal opening any and all Sub-contractor opportunities. Proof of advertisement must be submitted with the Bid or Proposal. |
| 3. | <input type="checkbox"/> | <input type="checkbox"/> | Provided interested SLBE's with timely, adequate information about the plans specifications, and other such requirements of the Contract to facilitate their quotation and conducted follow up to initial solicitations. |
| 4. | <input type="checkbox"/> | <input type="checkbox"/> | Provided written notice to SLBE's that their interest in subcontracting opportunities or furnishing supplies is solicited. Provided a contact log showing the name, address, email and contact number (phone or fax) used to contact the proposed certified sub-contractors, nature of work requested for quote, date of contact, the name and title of the person making the effort, and the amount of the quoted price if one was obtained. |
| 5. | <input type="checkbox"/> | <input type="checkbox"/> | Efforts were made to divide the work for SLBE subcontracting in areas likely to be successful and identify portions of work available to SLBE's consistent with their availability. Include a list of divisions of work not subcontracted and the corresponding reasons for not including them. The ability or desire of a Bidder/Proposer to perform the work of a contract with its own organization does not relieve it of the responsibility to make good faith efforts on all scopes of work subject to subcontracting. |
| 6. | <input type="checkbox"/> | <input type="checkbox"/> | Efforts were made to assist potential SLBE sub-contractors to meet bonding, insurance or other governmental contracting requirements. Where feasible, facilitating the leasing of supplies or equipment when they are of such a specialized nature that an SLBE could not readily and economically obtain them in the marketplace. |
| 7. | <input type="checkbox"/> | <input type="checkbox"/> | Utilization of services of available minority community organizations, minority contractor groups and other organizations that provide assistance in the recruitment and placement of SLBE's. |
| 8. | <input type="checkbox"/> | <input type="checkbox"/> | Communication with the CCWA Contracts, Compliance and Risk Management Section seeking assistance in identifying available SLBE's. |
| 9. | <input type="checkbox"/> | <input type="checkbox"/> | Exploration of joint venture opportunities with SLBE's. |
| 10. | <input type="checkbox"/> | <input type="checkbox"/> | Other actions (specify): |

Please explain any "no" answers listed above (by number):

This list is a guideline and by no means exhaustive. CCWA will review these efforts, along with other documents, towards assessing the Bidder/Proposer's efforts to meet CCWA's SLBE goal. If you require assistance in identifying certified SLBE's, please contact the Contracts, Compliance and Risk Management Section at ccwa_slbe_program@ccwa.us or at 770-960-5880.

END OF SECTION

FORM SLBE-5

POST AWARD – MONTHLY SLBE PARTICIPATION REPORT – CONTRACT GOAL

Instructions To Contractors

The prime contractor must complete the participation report and submit the form with each pay application to the CCWA Project Manager in charge of the contract. Failure to submit this form will result in payment application being deemed incomplete.

1. Report Number: Reports must be consecutively numbered. It will only be necessary to submit a report in a period when the approved SLBE has performed a portion of the work that has been designated for the contract.
2. Date: Actual date of the report.
3. Pay application period end date: Reports must acknowledge the end date for the period for which is being reported.
4. SLBE Amount: The amount of the contract for which the SLBE will earn.
5. Prior Earned Pay Application Amount: The amount previously submitted for payment on pay application.
6. Current Earned Pay Application Amount: The amount submitting with current payment application.
7. Earnings To-Date: The actual amount that each SLBE has earned to-date under the contract.
8. Percent of Contract: This percentage is calculated using the contract amount and the total SLBE earnings-to-date. Divide the total total contract amount by the total SLBE earnings-to-date.
9. Certification: The contractor's authorized representative must sign this form prior to submittal.

GENERAL INFORMATION

When the approved SLBE is to provide materials, goods or services, this completed form must be submitted to the CCWA Project Manager. The prime contractor must notify CCWA of any changes to SLBE firms.

When the prime contractor is an approved SLBE, it will only be necessary to complete the total SLBE earnings to-date. Joint ventures between non-SLBE and certified SLBE: Only that portion of the work for which the certified SLBE is responsible may be used to satisfy the requirement.

FORM SLBE-5

POST AWARD – MONTHLY SLBE PARTICIPATION REPORT – CONTRACT GOAL

PROJECT NO. (S): _____

REPORT NO.: _____

CONTRACTOR: _____

DATE: _____

CONTRACT AMOUNT: \$ _____

PAY APPLICATION PERIOD END DATE: _____

Check if final payment >>> FINAL PAYMENT

% SLBE GOAL _____

SLBE AMOUNT \$: _____

NAME OF APPROVED SLBE	DESCRIPTION OF WORK	PRIOR EARNED PAY APPLICATION AMOUNT	CURRENT EARNED PAY APPLICATION AMOUNT	EARNINGS TO-DATE

TOTAL SLBE EARNINGS TO-DATE: _____

% CONTRACT: _____

I HEREBY CERTIFY THAT THE ABOVE STATEMENT IS TRUE AND CORRECT AND SUPPORTING DOCUMENTATION IS ON FILE AND IS AVAILABLE FOR INSPECTION BY CCWA AT ANY TIME.

SIGNED _____
 CONTRACTOR

REMARKS _____

FOR DEPARTMENT USE ONLY:

THIS DOCUMENT HAS BEEN REVIEWED AT THAT PROJECT LEVEL BY:

SIGNED _____ TITLE _____

THIS DOCUMENT HAS BEEN REVIEWED AT THE PROGRAM LEVEL BY:

SIGNED _____ TITLE _____



FORM SLBE-6

Request for Subcontractor Removal/Substitution

Prior to submitting this form to Risk Management you must notify the SLBE in writing of your intent and allow the SLBE five (5) days to respond.

Request Date:		Contract/Project #	
Contract Value:	SLBE Contract Amount:	Amount Paid to SLBE:	
Prime Contractor Name:			
Prime Contractor Address:			
Prime Contact Name & Email:		Prime Contact Phone:	
Name of SLBE Firm:		SLBE Contact Name:	
SLBE Firm Address:		SLBE Contact Phone:	

Was SLBE firm given five (5) days written notice of intent? Yes or No If yes, please attach written notice.

Will the SLBE goal for the project still be met? Yes or No or N/A

Reason(s) for removal/substitution. **Check all that apply**

- The listed SLBE** is no longer in business.
- The listed SLBE** requested removal.
- The listed SLBE** failed or refused to perform under the terms of the contract or failed to furnish the listed materials.
- The work performed by **the listed SLBE** was unsatisfactory and was not in accordance with the scheduled specifications.

Name/Address of Substitution Contractor:	Is the substituted contractor an SLBE? <input type="checkbox"/> Yes or <input type="checkbox"/> No
Fully describe the type of work the substitute subcontractor will perform:	

Prime Authorized Signature:	Date:
Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Reason for rejection:	
Risk Management Authorized Signature:	Date:

This form should be completed and submitted (with all required documentation) to:

Clayton County Water Authority
ATTN: RISK MANAGEMENT
1600 Battle Creek Rd.
Morrow, GA 30260

Division 3

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Section 1: Agreement Form

**STATE OF GEORGIA
COUNTY OF CLAYTON**

**AGREEMENT FOR ONGOING PROVISION
OF GOODS AND SERVICES**

This Agreement made and entered into this ____ day of _____, 20____, for **Annual Contract for Cured-In-Place Pipe Work**, between the **CLAYTON COUNTY WATER AUTHORITY** (hereinafter "the Authority") and _____ (hereinafter "the Contractor"), witnesseth:

WHEREAS, the Authority is contracting with the _____ Contractor for the provision of certain goods and services described below for the term specified herein;

NOW THEREFORE, the parties agree as follows:

1. **DESCRIPTION OF GOODS AND SERVICES**: The Contractor shall provide the goods and services to the Authority in such quantities as the Authority requires for **Annual Contract for Cured-In-Place Pipe Work**, as described in the Request for Bid dated March 2019. The Contractor must perform no less than seventy-five percent (75%) of all labor for all cure-in-place pipe work.
2. **COSTS AND PAYMENT**: The Authority shall pay the Contractor the prices as stipulated in the Bid Form hereto attached as full compensation relative to the Bid dated _____, and above described goods and services. The Contractor may submit to the Authority no more than one (1) pay application per week for a project work order and the submission shall be in such a form and matter with such other supporting data and content as the Authority may require and accompanied by the Authority's waiver and release upon final payment. The Contractor must submit a completed Form SLBE-4 (Monthly SLBE Participation Report) to the Authority with every pay application.

If Contractor is awarded an individual project work order for a Public Works project as defined by O.C.G.A. § 36-91-2, that is \$100,000 or more in value, the Contractor will be required to provide Performance and Payment Bonds prior to the commencement of that individual project work order. Such work shall not commence until proper approval of such bonds has been given by CCWA.

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Contract Forms

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Each individual project work order shall be completed within the time period as agreed to by both parties at the time of the individual project work order issuance. If said work is not completed within the time frame stated on the individual project work order, the Contractor shall be liable to pay to the Authority, as liquidated damages the amount of \$500.00 per calendar day for each and every day or part of a day thereafter that said work remains substantially incomplete for that particular individual project work order.

If it appears that the SLBE subcontracting requirement cannot be achieved, the Contractor shall immediately notify the Authority in writing accompanied by the appropriate documentation. Good Faith Effort used to try to meet at least a portion of the requirement should be documented and submitted to the Authority for evaluation. The Contractor must submit a completed "Request for SLBE Subcontractor Removal/Substitution Form" (SLBE-6) to the Authority for approval.

The Authority shall pay the Contractor net 30 days from the date the Authority approves the Contractor's work and pay application for a project work order. Payments will be made via regular US Mail.

3. **TERM OF AGREEMENT:** The term of this Agreement shall commence on the **1st day of June, 2019**. The Agreement shall remain in effect until **May 31, 2020**.
4. **RENEWAL PROVISIONS:** The contract may be extended for a second and third 12-month period by mutual written consent by both parties with no changes in terms, conditions, and bid prices.
5. **WARRANTY ON SERVICES RENDERED:** The Contractor warrants its workmanship to be free from defects for a period of two (2) years from the date of final acceptance. The Contractor further warrants that its workmanship will conform to all specifications and will perform as specified. Upon receipt of written notice of a defect in workmanship, the Contractor shall repair the defect in a timely manner at no expense to the Authority.
6. **WARRANTY ON GOODS PROVIDED:** The Contractor warrants its goods for a period of two (2) years from the date of final acceptance. Furthermore, the Contractor warrants that goods ordered to specifications will conform thereto and to any drawings, samples, or other description furnished or adopted by the Authority, and will be fit and sufficient for the purpose intended; and that all goods are merchantable, of good material and workmanship, and free from defect. Such warranties, together with the Contractor's service warranties and guarantees, if any shall survive

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inspection, test, acceptance of, and payment for the goods and shall run to the Authority, its successors, assigns, customers at any tier, and ultimate user and joint users. Notices of any defect or nonconformity shall be given by the Authority to the Contractor within fifteen (15) months after acceptance by ultimate user; provided however that in the event the goods are designed by the Contractor, notice must be given within three (3) years after acceptance by ultimate user. The rights and remedies of the Authority concerning latent defects shall exist indefinitely and shall not be affected in clause. The Authority may, at its option, and in addition to other remedies available at law, either (i) return for credit, (ii) require prompt correction or replacement of the defective or nonconforming goods, or (iii) have the defective items corrected or replaced at the Contractor's expense and deduct the cost thereof from any monies due the Contractor. The return to the Contractor of any defective or nonconforming goods and delivery to the Authority of any corrected or replaced goods shall be at the Contractor's expense. Goods required to be corrected or replaced shall be at the Contractor's expense. Goods required to be corrected or replaced shall be subject to the provision of this paragraph and the paragraph of this Agreement entitled "inspection" on the same manner and to the same extent as goods originally delivered under this Agreement. In addition to correcting or replacing any defective or nonconforming goods, the Contractor shall also reimburse the Authority for all costs and expenses incurred by the Authority in connection with inspection and discovery of the defects, identifying and correcting the cause of such defects and all other activities reasonably undertaken by the Authority to obtain conforming goods or attempting to obtain from the ultimate user a waiver to permit the defective goods to be used with all or part of the defective conditions.

7. **INSPECTION:** The Authority shall have the right to inspect the goods supplied hereunder at any time during the manufacture or fabrication thereof at the Contractor's facilities or elsewhere. Such inspection may include, without limitation, raw materials, components, work in process, and completed products as well as drawings, specifications, and released data. Final inspection and acceptance shall be after delivery to the delivery point designated by the Authority. If any inspection or test is made by the Authority at the Contractor's facility or elsewhere, the Contractor shall provide reasonable facilities and assistance for the inspection personnel. The Authority may reject all goods supplied hereunder, which are found to be defective. Goods so rejected may be returned to the Contractor at the Contractor's expense. No inspection, examination or test, regardless of

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extensiveness or type, and no approval give in connection with any such inspection, examination or test, whether under this Agreement or another contract for the same or similar goods, shall relieve it, of any obligation to comply fully with all requirements of this Agreement, including the obligation to produce goods that conform to all requirements of the drawings, specifications and any other Contract Documents. At the Authority's request, the Contractor shall repair or replace defective goods at the Contractor's expense. Failure to inspect goods, failure to discover defects in goods or payment for goods shall not constitute acceptance or limit any of the Authority's rights, including without limitation those under the WARRANTY provisions of this Agreement. In the event inspection reveals a defect or defects and schedule urgency requires that the defect or defects be corrected by the Authority to support production, all cost of such correction, including without limitation installation and removal, will be charged to the Contractor; such charges will also include time and material and appropriate indirect and overhead expenses. The Contractor shall maintain in inspection system acceptable to the Authority covering the goods furnished hereunder.

8. **CONTRACTOR'S AFFIDAVITS:** The Contractor shall issue a "Standard Contractor's Affidavit Interim Waiver and Release Upon Payment" and a "Standard Contractor's Affidavit Unconditional Waiver and Release upon Final Payment" provided by the Authority before receiving any interim or final payment for any services performed.
9. **ASSIGNMENT AND SUBCONTRACTING:** The Contractor shall not assign this Agreement or any portion of this Agreement, nor shall the Contractor sub contract for goods or completed or substantially completed services purchased hereunder without the prior express written consent of the Authority. No assignment or subcontract by the Contractor, including any assignment or subcontract to which the Authority consents, shall in any way relieve the Contractor from complete and punctual performance of this Agreement, including without limitation all of the Contractor's obligations under the WARRANTY provisions of this Agreement.
10. **THE AUTHORITY'S ASSISTANCE AND COOPERATION:** During the Contractor's performance of this Agreement, the Authority may, but has no obligation to, provide assistance to, or cooperate with, the Contractor in activities that facilitate the proper performance and completion of this Agreement by the Contractor. Such assistance and cooperation may include without limitation: (i) providing engineering or other analysis or advice on correcting problems; (ii) refraining from strict enforcement of time schedule

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requirements under this Agreement; (iii) permitting use of test materials or documentation not performed or produced under this Agreement. Such assistance or cooperation by the Authority shall not be construed, and the Contractor agrees that it will not claim that any such assistance or cooperation operates, to relieve the Contractor from complete, proper and punctual performance of all the Contractor's obligations under this Agreement.

11. **WORK ON THE AUTHORITY'S DESIGNATED PREMISES:** In the event that the Contractor, the Contractor's employees or agents or the Contractor's subcontractors enter the Authority's designated premises for any reason in connection with this Agreement, the Contractor and such other parties shall observe all security requirements and all plant safety, plant protection, and traffic regulations. The Contractor shall defend, indemnify, and hold the Authority harmless from all claims, actions, demands, loss, and causes of action, arising from injury, including death, to any person, or damage to any property, when such injury or damage results in whole or in part from the acts or omissions of the Contractor, the Contractor's employees or agents or the Contractor's subcontractor, save and except damage caused by the sole negligence of the Authority. The Contractor, and any subcontractors used by the Contractor in connection with this Agreement, shall carry Workmen's Compensation and Employees' Liability Insurance to cover the Contractor's and any subcontractor's legal liability on account of accidents to their employees. The Contractor and any subcontractor shall carry adequate Comprehensive General Liability and adequate Comprehensive Automobile Liability Insurance covering accidents to their employees. The Contractor and any subcontractor shall carry adequate Comprehensive General Liability and adequate Comprehensive Automobile Liability Insurance covering legal liability of the Contractor and any subcontractor on account of accidents arising out of the operations of the Contractor or any subcontractor and resulting in bodily injury, including death, being sustained by any person or persons, or in any damage to property. At the Authority's request, the Contractor shall furnish to the Authority certificates from the Contractor's insurers showing such coverage in effect and agreeing to give the Authority thirty (30) days prior written notice of cancellation of the coverage.
12. **RISK MANAGEMENT REQUIREMENTS:** The Contractor shall abide by the Authority's applicable Risk Management Requirements, attached to this Agreement as Exhibit A and hereby incorporated into this Agreement.

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13. TERMINATION FOR DEFAULT:

- (a) The Authority may, subject to the provisions of subparagraph (c) below, by written notice of default to the Contractor, terminate the whole or any part of this Agreement in any one of the following circumstances; (i) if the Contractor fails to perform this Agreement within the time specified herein or any extension thereof; or (ii) if the Contractor fails to perform any of the other provisions of this Agreement, or so fails to make progress as to endanger performance of this Agreement in accordance with its terms, and does not cure such failure within a period of ten (10) days or longer period (as the Authority may authorize in writing) after receipt of notice from the Authority specifying such failure.
- (b) In the event the Authority terminates this Agreement in whole or in part as provided in subparagraph (a) above, the Authority may procure, upon such terms and in such manner as the Authority may deem appropriate, services, similar to those so terminated, and the Contractor shall be liable to the Authority for any Excess costs for the same, including without limitation all cost and expenses of the type specified in the "WARRANTY" paragraph of this Agreement; provided, that the Contractor shall continue the performance of this Agreement to the extent not terminated hereunder.
- (c) Except with regard to defaults of subcontractors, the Contractor shall not be liable for any excess costs if the failure to perform this Agreement arises out of causes beyond the control and without the fault of negligence of the Contractor such causes may include, but are not limited to, acts of God, or of the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, flood, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, but in every case the failure to perform must be beyond the control and without the fault or negligence of the Contractor. If the failure to perform is caused by the default of a subcontractor, and if such default arises out of causes beyond the control of both the Contractor and the subcontractor, and without the fault of negligence of either of them, the Contractor shall not be liable for any excess costs for failure to perform, unless the services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Contractor to meet the required delivery schedule. The term "subcontractor" shall mean subcontractor at any tier.
- (d) If, after notice of termination of this Agreement under the provisions of this paragraph, it is determined for any reason that the Contractor was

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not in default under the provisions above or that the default was excusable under the provisions of this paragraph, the rights and obligations of the parties shall be the same as if the notice of termination has been issued pursuant to the "Termination for Convenience" paragraph of this Agreement.

- (e) The rights and remedies of the Authority provided in this paragraph shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

14. **TERMINATION FOR CONVENIENCE:** The Authority may at any time by written notice terminate all or any part of this Agreement for the Authority's convenience. If this Agreement is terminated, in whole or in part, for the Authority's convenience, the Contractor shall be paid an amount, to be mutually agreed upon, which shall be adequate to cover the actual and reasonable cost paid by the Contractor for the actual goods and labor reasonably used by the Contractor to perform the work under this Agreement to the effective date of termination, plus a reasonable profit thereon; provided that no amount shall be paid to the Contractor for (i) any anticipatory profits related to work under this Agreement not yet performed, or (ii) costs incurred due to the Contractor's failure to terminate work as ordered on the effective date of termination. In no event shall the total amount paid under the provisions of this paragraph exceed the prices set forth in this Agreement for the work terminated.
15. **DISPUTES:** Pending resolution of any dispute hereunder, the Contractor shall proceed diligently with the performance of work in accordance with the Authority's direction.
16. **NOTICES:** All notices required or permitted to be given hereunder shall be deemed to be properly given if delivered in writing personally or sent by United States certified or registered mail addressed to the Contractor or the Authority, as the case may be, with postage thereon fully prepaid. The effective time shall be at the time of mailing.
17. **ATTORNEYS' FEES:** The Contractor shall pay reasonable attorneys' fees to the Authority should the Authority be required to incur attorneys' fees in enforcing the provisions of this Agreement or in the collection of any monies herein required to be paid by the Contractor to the Authority.

SIGNATURES ON NEXT PAGE

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IN WITNESS WHEREOF this _____ day of _____, 2019,
said parties have hereunto set their seals the day and year above first written.

Executed on behalf of:

CLAYTON COUNTY WATER AUTHORITY

BY: _____

H. BERNARD FRANKS

TITLE: GENERAL MANAGER

[Corporate Seal]

ATTEST: _____

DATE: _____

CONTRACTOR

BY: _____

TITLE:

[Corporate Seal]

ATTEST: _____

[Name] - Corporate Secretary

DATE: _____

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RISK MANAGEMENT REQUIREMENTS

The Contractor will provide minimum insurance coverage and limits as per the following: The Contractor will file with the Authority Certificates of Insurance, certifying the required insurance coverage and stating that each policy has been endorsed to provide thirty (30) day notice to the Authority in the event that coverage is cancelled, non-renewed or the types of coverage or limits of liability are reduced below those required. All bonds and insurance coverage must be placed with an insurance company approved by Authority Management, admitted to do business in the State of Georgia, and rated Secure (“B+” or better) by A.M. Best Company in the latest edition of Property and Casualty Ratings, or rated by Standard & Poors Insurance Ratings, latest edition as Secure (“BBB” or better). Worker’s Compensation self-insurance for individual Contractors must be approved by the Worker’s Compensation Board, State of Georgia and/or Self-Insurance pools approved by the Insurance Commissioner, State of Georgia.

CONTRACTS FOR UP TO \$50,000

Worker’s Compensation – Worker’s Compensation coverage on a statutory basis for the State of Georgia with an Employer’s Liability limit of \$100,000 each Accident, Disease \$100,000 each employee, \$500,000 Disease policy limit.

Automobile Liability – Automobile liability coverage for owned, hired and non-owned vehicles in the amount of \$500,000 combined single limit.

Commercial General Liability – Coverage to be provided on “occurrence” not “claims made” basis. The coverage is to include Contractual liability, Per Project Limit of Liability, losses caused by Explosion, Collapse and Underground (“xcu”) perils, the “Clayton County Water Authority” is to be added as an Additional Insured and Products and Completed Operations coverage is to be maintained for three (3) years following completion of work.

CONTRACTS FOR MORE THAN \$50,000

Worker’s Compensation – Worker’s Compensation coverage on a statutory basis for the State of Georgia with an Employer’s Liability limit of \$1,000,000. The increased Employer’s Liability limit may be provided by an Umbrella or Excess Liability policy.

Automobile Liability - Automobile liability coverage for owned, hired and non-owned vehicles in the amount of \$1,000,000 combined single limit.

Commercial General Liability – Coverage to be provided on “occurrence” not “claims made” basis. The coverage is to include Contractual liability, Per Project Limit of Liability, losses caused by Explosion, Collapse and Underground (“xcu”) perils, the “Clayton County Water Authority” is to be added as an Additional Insured and Products and Completed Operations coverage is to be maintained for three (3) years following completion of work.

Division 3

Contract Forms

Section 1: Agreement Form

RISK MANAGEMENT REQUIREMENTS (Cont'd)

CONTRACTS FOR UP TO \$50,000

CONTRACTS FOR MORE THAN \$50,000

LIMITS OF LIABILITY:

\$1,000,000	Per Occurrence
\$1,000,000	Personal and Advertising
\$50,000	Fire Damage*
\$5,000	Medical Payments*
\$1,000,000	General Aggregate
\$1,000,000	Products/Completed Operations per Occurrence and Aggregate

**These are automatic minimums*

Owner's Protective Liability – The Authority's Management may, in its discretion, require Owner's Protective Liability in some situations.

Umbrella and/or Excess Liability – The umbrella or Excess Liability Policy may be used to combine with underlying policies to obtain the limits required. The Management of the Authority may elect to require higher limits.

Owner's Protective Liability – The Authority's Management may, in its discretion, require Owner's Protective Liability in some situations.

END OF SECTION

Division 3

Contract Forms

Section 2: Performance Bond

KNOW ALL MEN BY THESE PRESENTS THAT _____
_____ (as CONTRACTOR, hereinafter referred to as the
“Principal”), and _____ (as SURETY COMPANY),
hereinafter referred to as the “CONTRACTOR’S SURETY”), are held and firmly bound unto
the Clayton County Water Authority (as OWNER, hereinafter referred to as the “Authority”),
for the use and benefit of any “Claimant” as hereinafter defined in the sum
of _____ Dollars (\$ _____) lawful
money of the United States of America, for the payment of which the Principal and the
Contractor’s Surety bind themselves, their heirs, executors, administrators, successors and
assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written
agreement with the Authority, dated _____, which is incorporated
herein by reference in its entirety (hereinafter referred to as the “CONTRACT”), for the
construction of a project known as **Annual Contract for Cured-In-Place Pipe Work**,
(hereinafter referred to as “the PROJECT”).

NOW THEREFORE, the conditions of this obligation are as follows:

1. That if the Principal shall fully and completely perform each and all of the
terms, provisions and requirements of the Contract, including and during the
period of any warranties or guarantees required thereunder, and all
modifications, amendments, changes, deletions, additions, and alterations
thereto that may hereafter be made; and if the Principal and the Contractor’s
Surety shall indemnify and hold harmless the Authority from any and all
losses, liability and damages, claims, judgments, liens, costs and fees of
every description, including but not limited to, any damages for delay, which
the Authority may incur, sustain or suffer by reason of the failure or default
on the part of the Principal in the performance of any and all of the terms,
provisions and requirements of the Contract, including all modifications,
amendments, changes, deletions, additions, and alterations thereto and any

Division 3

Contract Forms

Section 2: Performance Bond

warranties or guarantees required thereunder, then this obligation shall be void; otherwise to remain in full force and effect;

2. In the event of a failure of performance of the Contract by the Principal, which shall include, but not be limited to, any breach of default of the Contract;
 - a. The Contractor's Surety shall commence performance of its obligations and undertakings under this Bond no later than thirty (30) days after written notice from the Authority to the Contractor's Surety;
 - b. The means, method or procedure by which the Contractor's Surety undertakes to perform its obligations under this Bond shall be subject to the advance written approval of the Authority.

The Contractor's Surety hereby waives notice of any and all modifications, omissions, additions, changes and advance payments or deferred payments in or about the Contract and agrees that the obligations undertaken by this Bond shall not be impaired in any manner by reason of any such modifications, omissions, additions, changes, and advance payments or deferred payments. The Parties further expressly agree that any action on this Bond may be brought within the time allowed by Georgia law for suit on contracts under seal.

SIGNATURES ON NEXT PAGE

Division 3

Contract Forms

Section 2: Performance Bond

IN WITNESS WHEREOF, the principal and Contractor's Surety have hereunto affixed their corporate seals and caused this obligation to be signed by their duly authorized officers or attorneys-in-fact, this _____ day of _____ 20__.

(Name of Principal)

By:

Name Printed:

Title:

Corporate Seal

Attested:

Date:

(Name of Contractor's Surety)

By:

Name Printed:

Title:

Corporate Seal

Attested:

Date:

(ATTACH SURETY'S POWER OF ATTORNEY)

END OF SECTION

Division 3

Contract Forms

Section 3: Payment Bond

KNOW ALL MEN BY THESE PRESENTS THAT _____
_____ (as CONTRACTOR, hereinafter referred to as the “Principal”), and _____
(as SURETY COMPANY, hereinafter referred to as the “CONTRACTOR’S SURETY”), are held and firmly bound unto the Clayton County Water Authority (as OWNER, hereinafter referred to as the “Authority”), for the use and benefit of any “Claimant” as hereinafter defined in the sum of _____ Dollars(\$_____), lawful money of the United States of America, for the payment of which the Principal and the Contractor’s Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written agreement with the Authority, dated _____, which is incorporated herein by reference in its entirety (hereinafter referred to as the “CONTRACT”), for the construction of a project known as **Annual Contract for Cured-In-Place Pipe Work**, (hereinafter referred to as “the PROJECT”).

NOW THEREFORE, the condition of this obligation is such, that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor, services and materials used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

A “Claimant” shall be defined herein as any Subcontractor, person, Party, partnership, corporation or other entity furnishing labor, services or materials used or reasonably required for use in the performance of the Contract, without regard to whether such labor, services or materials were sold, leased or rented, and without regard to whether such Claimant is or is not in privity of the Contract with the Principal or any Subcontractor performing Work on the Project.

In the event of any claim made by the Claimant against the Authority, or the filing of a Lien against the property of the Authority affected by the Contract, the Contractor’s Surety shall either settle or resolve the Claim and shall remove any such Lien by bond or otherwise as provided in the Contract.

The Parties further expressly agree that any action on this Bond may be brought

Division 3

Contract Forms

Section 3: Payment Bond

within the time allowed by Georgia law for suit on contracts under seal.

IN WITNESS WHEREOF, the Principal and Contractor's Surety have hereunto affixed their corporate seals and caused this obligation to be signed by their duly authorized officers on this _____ day of _____ 20__.

(Name of Principal)

By: _____

Name Printed: _____

Title: _____

Corporate Seal

Attested: _____

Date: _____

(Name of Contractor's Surety)

By: _____

Name Printed: _____

Title: _____

Corporate Seal

Attested: _____

Date: _____

(ATTACH SURETY'S POWER OF ATTORNEY)

END OF SECTION

Division 3

Contract Forms

Section 4: Non-Collusion Certificate

STATE OF _____ , COUNTY OF _____

Personally appeared before the undersigned officer duly authorized by law to administer oaths

who, after being first duly sworn, depose and say that they are all the officers, agents, persons or employees who have acted for or represented _____

_____, and that said

in proposing or procuring the Contract with the Clayton County Water Authority on the following project: **Annual Contract for Cured-In-Place Pipe Work**

has not by (himself, themselves) or through any persons, officers, agents or employees prevented or attempted to prevent by any means whatsoever competition in such bidding; or by any means whatsoever prevented or endeavored to prevent anyone from making a proposal therefore or induced or attempted to induce another to withdraw a bid for said work.

ATTEST:

By: _____
Name

By: _____
Bidder

By: _____
Name

Title: _____

Title: _____

Sworn to and subscribed before me this _____ day of _____, 20____

Notary Public: _____

My Commission expires: _____

END OF SECTION

Division 4 **Specifications**

Section 1: Work Assignment and Measurement for Payment

1.1 General

- A. The Contractor shall provide all labor, equipment, tools, materials (unless indicated otherwise as detailed in Division 4, Section 2) and incidental items to complete the Work Items in accordance with the Contract Documents.
- B. The basis for payment will be the bid unit cost amounts included in the “Pay Item Schedule” and the actual quantities of work completed by the Contractor and approved by the CCWA.
- C. Nothing in this Section shall be construed as providing for additional payment beyond the Work Items. The Contractor shall be paid only for the quantity of a Work Item that is completed and authorized/approved by CCWA. No payment will be made for the completion of excessive quantities of a Work Item as determined by the CCWA.
- D. The CCWA reserves the right to adjust the quantity of a Work Item up or down as necessary to address needs. Work Items and quantities of a Work Item not completed will be removed from the Project Work Order.

1.2 Work Assignment

- A. Work to be performed under this annual contract will be assigned on an as needed when needed basis as determined by the CCWA in the form of a Project Work Order.

Project Set-Up for Non-Emergency Work

- 1. CCWA shall prepare draft work items and quantities for Contractor review.
- 2. Contractor shall provide comments on the draft work items and quantities to CCWA within 7 calendar days of issuance by CCWA in order that a Project Work Order can be issued or mutually agreed upon start date.
- 3. Contractor shall commence work on-site within 7 calendar days of receipt of a Project Work Order.

Project Set-Up for Emergency Work

- 1. CCWA shall prepare draft work items and quantities for Contractor review.
- 2. Contractor shall provide comments on the draft work items and quantities to CCWA within 24 hours of notice of emergency mobilization by CCWA in order that a Project Work Order can be issued.

Division 4 **Specifications**

Section 1: Work Assignment and Measurement for Payment

3. Contractor shall commence work on-site within 24 hours of notice of emergency mobilization by CCWA. CCWA shall issue Project Work Order prior to or concurrently with the start of work. A Project Work Order will be for work items that are in a common geographic location. A common geographic location may be considered a sanitary sewer drainage basin, business/industrial park, city block or residential subdivision.

- B. Work of a Project Work Order shall be completed within the number of consecutive work days mutually agreed to by the Contractor and the CCWA prior to the start of the work. Unless approved by the CCWA in advance, the Contractor shall not leave the work site to complete work for others.

1.3 Application for Payment Submittals

- A. An application for payment (invoice) shall conform to requirements provided by CCWA. CCWA will provide a template as a go-by.
- B. Provide document(s) to support each invoice for payment as follows. An invoice can be submitted to CCWA once per week per job.
 1. Provide one (1) copy of the invoice.
 2. Provide one (1) copy of the applicable Waiver and Release Upon Payment Affidavit with original signatures.
 3. Additional items to be included with each invoice are as follows.
 - a) Manufacturer's warranty.
 - b) Post CIPP CCTV data.
 - c) Field and lab test data, as authorized.
 - d) Cure logs (Typed).

1.4 Work Items and Measurement

- A. The descriptions below provide an explanation of the work that is to be completed as part of each Work Item and how the Work Item will be measured for payment.
 1. Work Item descriptions incorporate work shown on the Construction Details or Construction Drawings/Detailed Site Map when applicable and all related work/specifications referenced in Division 4, Section 3.

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

2. The Work Items correspond to the Work Items listed on the “Pay Item Schedule” of the Bid Form.

Work Item 1. Mobilization: Defined as the Contractor’s administrative and preparatory operations which are necessary to initiate and start work on a project site within 7 calendar days of issuance of a Project Work Order. The Work Item will be paid at (2%) two percent of the total value of Work Items completed for a Project Work Order as authorized/approved by CCWA with a not to exceed amount of \$2,000.00 for any Project Work Order. The costs for demobilization, and re-mobilizations due to shut downs or suspensions of the work caused by the Contractor shall not be compensated. When the Contractor expends administrative and preparatory labor time to assess a project at the request of the CCWA and no subsequent Project Work Order is authorized by CCWA, the Contractor will be entitled to receive compensation for said hourly labor only in accordance with Hourly Labor Work Items.

Work Item 2. Emergency Mobilization: Defined as the Contractor’s administrative and preparatory operations which are necessary to arrive on-site and initiate and start work on a project site within 24 hours of a notice of an Emergency Mobilization request. The Work Item will be paid for a Project Work Order in accordance with the Pay Item Schedule and applicable Detail when authorized/approved by CCWA. The costs for demobilization, and re-mobilizations due to shut downs or suspensions of the work caused by the Contractor shall not be compensated. When the Contractor expends administrative and preparatory labor time to assess a project at the request of the CCWA and no subsequent Project Work Order is authorized by CCWA, the Contractor will be entitled to receive compensation for said hourly labor only in accordance with Hourly Labor Work Items.

Work Item 3. Performance and Payment Bonds: Defined as the Contractor obtaining and providing to the CCWA Performance and Payment Bonds in the required amounts for a Public Works project costing \$100,000 or more in value. This Work Item will be paid for a Project Work Order in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 4. PE Stamped Design Calculations: Defined as all the Contractor’s cost which are necessary to provide CIPP design calculations in

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

accordance with the reference standards prepared and stamped by an independent, third party, licensed professional engineer experienced with the work. The Work Item will be paid for a Project Work Order in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 5 – 24. Pumping: Defined as the Contractor providing, operating and maintaining a complete pumping system that includes pumps, suction/discharge piping, pipe plugs, coffer dams, fuel, etc. of the minimum size to meet peak flow conditions for by-pass flow purposes. Where Single is indicated, one pumping system is to be provided. Where Redundant is indicated, one additional pumping system of the same size and equipped with automatic calling features is to be provided and integrated with the Single Pump. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 25 - 26. CCTV (Sanitary Sewer Pipe): Defined as the Contractor removing and re-installing (at surface grade) existing structures' ring and covers, catch basin tops or solid tops as necessary, completing a CCTV inspection of sanitary sewer pipe using Pipeline Assessment and Certification Program[®] (PACP) practices, or view the pipe using only video. The Work Item includes the removal and proper disposal of all soil, silt, rocks, other granular material, grease, roots, scale, as well as other foreign debris from the pipeline using three (3) passes of appropriate water jet cleaning nozzles that produce a maximum pressure of 2,500 pounds per square inch (psi) at 80 gallons per minute (gpm). The work will be completed so that no materials are allowed to pass beyond the downstream structure of the authorized work. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail with cost based on a minimum two-man crew using either the "With PACP Assessment" or using the "Without PACP Assessment" as measured in the pipe horizontally from where the pipe starts to where the pipe ends and as accepted/approved by CCWA.

Work Items 27 - 28. CCTV (Stormwater Pipe): Defined as the Contractor removing and re-installing (at surface grade) existing structures' ring and covers, catch basin tops or solid tops as necessary, completing a CCTV inspection of stormwater pipe using Pipeline Assessment and Certification Program[®] (PACP) practices, or view the pipe using only video. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail with cost based on

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

a minimum two-man crew using either the “With PACP Assessment” or using the “Without PACP Assessment” as measured in the pipe horizontally from where the pipe starts to where the pipe ends and as accepted/approved by CCWA.

Work Item 29. CCTV (Standby): Defined as the Contractor remaining on-site idle in order to complete CCTV inspection work. Remaining on-site idle shall only be performed at the request of the CCWA. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail with cost based on time remaining on-site idle and as accepted/approved by CCWA.

Work Items 30 - 35. Heavy Cleaning (Sanitary Sewer Pipe) – Up to 60-inch Diameter: Defined as the Contractor removing and re-installing (at surface grade) existing structures’ ring and covers, tops as necessary, completing the removal and proper disposal of all soil, silt, rocks, other granular material, grease, roots, scale and as well as other foreign debris from the pipe that remains in the pipe after completing three (3) passes of appropriate water jet cleaning nozzles that produce a maximum pressure of 2,500 psi at 80 gpm. The work will be completed so that no materials are allowed to pass beyond the downstream structure of the authorized work. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as measured in the pipe horizontally from where Heavy Cleaning starts to where cleaning equipment and debris is removed from within the pipe and as accepted/approved by CCWA. Heavy cleaning shall only be performed at the request of the CCWA.

Work Items 36 - 50. Cleaning (Stormwater Pipe) – Up to 48-inch Diameter: Defined as the Contractor removing and re-installing (at surface grade) existing structures’ ring and covers, catch basin tops or solid tops as necessary, completing the removal and proper disposal of all soil, silt, rocks, other granular material, roots and as well as other debris from the pipe. The complete removal will include a final water rinse of the pipe. The work will be completed so that no materials are allowed to pass beyond the downstream structure of the authorized work. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail with percent (%) of diameter determined by measuring the depth of soil/debris in the pipe as compared to pipe’s diameter prior to the start of cleaning and linear footage as measured in the pipe horizontally from where cleaning starts to where cleaning stops in the pipe and as accepted/approved by CCWA. The percent (%) of pipe diameter selected to be cleaned for a particular

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

pipe shall be effective throughout the length of that pipe segment without adjustment after cleaning has commenced.

Work Item 51. Cleaning (Stormwater Pipe) – Larger than 48-Inch Diameter: Defined as the Contractor removing and re-installing (at surface grade) existing structures' ring and covers, catch basin tops or solid tops as necessary, completing the removal and proper disposal of all soil, silt, rocks, other granular material, roots and all other debris from the pipe. The complete removal will include a final water rinse of the pipe. The work will be completed so that no materials are allowed to pass beyond the downstream structure of the authorized work. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail with cost based on a minimum two-man crew removing debris from the pipe and as accepted/approved by CCWA.

Work Items 52 - 53. Cleaning Structure: Defined as the Contractor removing and re-installing (at surface grade) existing structures' ring and covers, catch basin tops or solid tops as necessary, completing the removal and proper disposal of all soil, silt, rocks, other granular material, roots and all other debris from the structure. The work will be completed prior to initiation of any work upstream of the structure being cleaned. Work shall be completed so that no materials are allowed to pass downstream of the structure being cleaned. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail with depth being measured from the top of structure to structure invert and quantity of soil/debris removed based on the total in-place cubic footage of material as measured in the structure and as accepted/approved by CCWA.

Work Items 54 - 67. Pre-Liner: Defined as the Contractor installing a pre-liner to properly prepare the host pipe for CIPP installation. Pre-liners may also be used as recommended by the Contractor and as approved by the CCWA to control leakage and allow installation of the CIPP. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as measured in the pipe horizontally from where the pipe starts to where the pipe ends and as accepted/approved by CCWA.

Work Item 68. Reinstatement of Existing Services: Defined as the Contractor locating, cutting, trimming and reconnecting an existing service connection after the completion of CIPP. The Work Item will be paid in

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 69 – 72. Cured-In-Place Pipe Service Laterals: Defined as the Contractor installing and curing the CIPP service lateral, inspecting and returning the pipe line to service. The Work Item will be paid for the connection to the sewer main and first six linear feet of lateral CIPP in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA. The Work Items will be paid for additional linear footage beyond six linear feet in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 73 – 118. Cured-In-Place Pipe: Defined as the Contractor completing the following work:

- a) Provide CIPP design calculations prepared under the supervision of a licensed Professional Engineer in accordance with the reference standards.
- b) Remove and re-install ring and covers, catch basin tops or solid tops as necessary.
- c) Cut and prepare ends of pipe within structures as necessary to successfully install required materials.
- d) Remove and properly dispose of all soil, silt, rocks, other granular material, grease, roots, scale, as well as other foreign debris from the pipeline using three (3) passes of appropriate water jet cleaning nozzles that produce a maximum pressure of 2,500 pounds per square inch (psi) at 80 gallons per minute (gpm). The work will be completed so that no materials are allowed to pass beyond the downstream structure of the authorized work and complete pre-CCTV for documentation.
- e) Plug upstream pipes as necessary when flow bypass pumping is not utilized.
- f) Install and cure the CIPP.
- g) Complete post CCTV inspections of the work.
- h) Collect and deliver samples for testing as directed by CCWA, provide submittals and return the pipeline to service.
- i) Remove from site and dispose of all associated waste material.

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as measured in the pipe horizontally from where the pipe starts to the where the pipe ends and as accepted/approved by CCWA. Where design calculations indicate a change in thickness from the base thickness, then the per linear foot cost of the base thickness will be modified on a per "linear foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as measured in the pipe horizontally from where the pipe starts to the where the pipe ends and as accepted/approved by CCWA.

Work Items 119 - 121. Sampling and Testing: Defined as the Contractor preparing samples, delivering samples to the independent testing laboratory and providing certified report results for material, structural/flexural, thickness, etc. properties in accordance with the reference standards. For pipelines up to 15-inches in diameter, field samples shall be based on taking a restrained sample of the actual CIPP as installed and cured in situ with the new CIPP. Samples for CIPP larger than 15-inch diameter shall be based on taking plate samples. Thickness testing for CIPP larger than 15-inch diameter and supplemental thickness testing as directed by CCWA shall be based on core drilling a minimum 2-inch diameter test coupon in the installed CIPP; repair of the core drilling shall be included in the Pay Item cost. Field sampling and third-party independent laboratory testing shall be provided as directed by the CCWA. The Work Items will be in accordance with the Pay Item Schedule and applicable Detail and as accepted/approved by CCWA. No payment will be made for samples for work that is not accepted/approved by CCWA.

Work Items 122. Brush Removal: Defined as the Contractor removing from the work site and disposing brush, undergrowth, small trees, limbs, stumps, tap roots and other roots exceeding 1-inch in diameter to a depth of at least 18 inches. A small tree is considered any tree or plant growth less than 4 inches in diameter as measured 54 inches up from adjacent bare ground surface. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 123 - 126. Tree Removal: Defined as the Contractor removing from the work site and disposing, trees, limbs, stumps, tap roots and other roots exceeding 1-inch in diameter to a depth of at least 18 inches. A tree is considered a tree when its diameter is 4 inches or greater as measured 54

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

inches up from adjacent bare ground surface. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 127 – 130. Fence Work: Defined as the Contractor removing chain-linked fencing, wired fencing, wood privacy fencing and posts and disposing or subsequent reinstallation. Where reinstallation is required, Contractor shall provide necessary fasteners to match existing to complete the work. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 131 - 134. General Excavation: Defined as the Contractor completing the excavation of soils and/or removal of structures, pipe and/or removal of debris to a required grade, dewatering as necessary and stockpiling or disposing. The Work Items may only be used when work cannot be completed through other Work Items of the Contract. The depth of work shall be determined by measuring from original ground surface to bottom of excavation. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 135 – 139. General Fill/Backfill: Defined as the Contractor placing soil and/or stone of varying sizes as listed in the Pay Item Schedule in excavations or other areas and dewatering as necessary or reinstalling previously removed structures. When placing soil, soil will be compacted to 95% of its maximum dry density as determined by a Standard Proctor Analysis. The Work Items may only be used when work cannot be completed through other Work Items of the Contract. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 140 - 148. Stone Placement: Defined as the Contractor placing stone of varying sizes as listed in the Pay Item Schedule to construct and/or add to sloped grade, access road or parking area at requested layer thickness. Stone shall be compacted using vibratory equipment. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 149. Geotextile Fabric Installation: Defined as the Contractor installing and anchoring geotextile fabric at a requested location. Geotextile

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

Fabric shall be of woven or nonwoven fabric materials used to reinforce or separate soil and other materials. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 150 - 152. Sediment Barrier: Defined as the Contractor installing silt fence or hay bales as requested in accordance with "The Manual for Erosion and Sediment Control in Georgia", latest Edition. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 153. Sediment Barrier Removal: Defined as the Contractor removing and disposing sediment barriers and stabilizing any subsequent disturbed soil in accordance with Work Items "Soil Stabilization", as applicable. The Work Item will be paid in accordance with the Pay Item Schedule and applicable as authorized/approved by CCWA.

Work Items 154 - 158. Soil Stabilization: Defined as the Contractor returning the disturbed soil grade to match existing conditions, removing and disposing all rocks and dirt clogs 3/4-inch in size and larger and installing straw mulch, seed and straw mulch, seed and matt blanket or sod to match existing grass type. Soil stabilization measures shall include lime and fertilizer and shall be installed in accordance with "The Manual for Erosion and Sediment Control in Georgia", latest Edition. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 159 - 163. Remove Asphalt Pavement: Defined as the Contractor saw cutting through asphalt surfaces, removing asphalt pavement from work site and disposing. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 164 - 169. Remove Concrete Flat Work: Defined as the Contractor saw cutting through concrete surfaces, removing concrete from work site and disposing. The Work Items shall be used where asphalt material is found to be over concrete material. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 170. Pavement Striping: Defined as the Contractor installing painted line of the appropriate color to asphalt and concrete surfaces of parking

Division 4

Specifications

Section 1: Work Assignment and Measurement for Payment

lots and roads. The Contractor shall provide a water-based paint, fast dry, formulated for pavement application; dry to the touch in 5 minutes, ready for traffic in 15 minutes. Sufficient paint shall be applied so that no asphalt or concrete color is visible through paint. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 171. Pavement Marking: Defined as the Contractor installing painted handicap symbol, complying with Figure 3B-22 of the Manual on Uniform Traffic Control Devices, of the appropriate color to asphalt and concrete surfaces of parking lots. The Contractor shall provide a water-based paint, fast dry, formulated for pavement application; dry to the touch in 5 minutes, ready for traffic in 15 minutes. Sufficient paint shall be applied so that no asphalt or concrete color is visible through paint. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 172. Pressure Washing: Defined as the Contractor using a minimum 3,500 psi pressure washer and removing soil / mud and stains from asphalt and concrete surfaces. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 173 - 174. Remove Concrete Structure: Defined as the Contractor removing a subgrade concrete structure from work site and disposing. The Work Items will be paid on a per "in-place cubic foot" (CF) unit cost or on a per "square foot" (SF) unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 175 - 176. Remove Brick Structure: Defined as the Contractor removing a subgrade brick structure from work site and disposing. The Work Items will be paid on a per "in-place cubic foot" (CF) unit cost or on a per square foot (SF) unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 177 – 178. Asphalt Patching: Defined as the Contractor preparing and compacting existing stone base and installing/compacting to a final 3-inch thick layer of Type E asphalt. Where a more or less than 3-inch thick layer of asphalt is required, layer shall be added or reduced in 1-inch thick increments.

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Comply with "Typical Asphalt Replacement" Detail. The Work Item will be paid in accordance with the Pay Item Schedule and applicable Detail as accepted/approved by CCWA. Where more or less asphalt is required the Work Item will be paid on a per "square foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 179 – 180. Asphalt Paving: Defined as the Contractor preparing and compacting existing stone base and using a mechanical/hydraulic spreader machine and vibratory roller to install/compact to a final 3-inch thick layer of Type E asphalt. Where a more or less than 3-inch thick layer of asphalt is required, layer shall be added or reduced in 1-inch thick increments. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as accepted/approved by CCWA. Where more or less asphalt is required the Work Item will be paid on a per "square foot" unit cost in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 181 – 182. Concrete Curb and Gutter: Defined as the Contractor preparing ground surface, installing necessary formwork and placing commercial grade 3,000 psi concrete. Control joints shall be installed at interval spacing not to exceed 10 feet. Control joints shall be installed by hand tooling during finishing. Concrete shall be finished with a brush finish parallel to road direction. Upon completion, formwork, wasted concrete and other debris shall be removed from the work site and disposed. Comply with "Slab-On-Grade" Detail. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 183 – 190. Concrete Slab-On-Grade: Defined as the Contractor excavating to grade where necessary, preparing ground surface, installing necessary formwork, installing wire mesh or steel reinforcing as requested by CCWA and placing commercial grade 3,000 psi concrete of varying thickness and area to a required grade. Placed concrete shall be vibratory consolidated prior to finishing. Control joints shall be installed at interval spacing of 1-1/2 times slab width or at maximum spacing of 10 feet, whichever is closer. Control joints, ¼ of slab thickness, shall be installed by hand tooling during finishing or saw cut within 24 hours of initial placement. Concrete exposed to walking traffic shall be finished with a brush finish perpendicular to walking direction. Concrete not exposed to walking traffic shall be finished with a smooth steel trowel finish.

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Upon completion, formwork, wasted concrete and other debris shall be removed from the work site and disposed. The "Wire Mesh" description is for 4x4 – W2.1xW2.1 wire mesh. The "Steel Reinforcement" description is for No. 4 or No. 5, Grade 60 bars spaced at 6 inches on-center each way supported on chairs and secured using tie wire. Install reinforcement in accordance with the Concrete Reinforcement Steel Institute (CRSI) manual for placing reinforcing bars, latest edition. Comply with "Slab-On-Grade" Detail. The Work Items for concrete will be paid on a per "square foot" (SF) unit cost in accordance with the Pay Item Schedule and applicable depth Detail as authorized/approved by CCWA. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 191 – 414. Pipe Installation - Open Cut: (CCWA Provides Pipe, Gaskets and Necessary Fittings and Contractor Delivers to Site) Defined as the Contractor completing excavation work to the required depth, cutting and removing existing pipe of various types from excavation and disposing as necessary, installing required bedding, installing PVC, DI, RC, HDPE, or CM pipe, solid sleeves / couplings or fittings of requested size at necessary grade, making all necessary connections and completing excavation backfill to original grade with soil compacted to 95% of its maximum dry density. Comply with "Pipe Installation on Grade – PVC and HDPE" Detail, "Pipe Installation on Grade – DI, RC, CM" Detail and "Lateral Connection" Detail. Gaskets for piping shall be standard rubber or Field-Lock®. Where Point Repair is indicated, up to 20 feet (length) of pipe and/or including a service connection at a single location is to be installed. Where Additional Footage is indicated, pipe is installed at a linear footage beyond 20 feet. The depth of work shall be determined by measuring from original ground surface to bottom of excavation and along the length of the excavation. Linear foot shall refer to the length of pipe installed including connecting couplings. The Work Items detailed as "Point Repair" will be paid on a per "each" unit cost in accordance with the Pay Item Schedule and applicable depth Detail as authorized/approved by CCWA. The Work Item "Additional Footage" will be paid on a per "linear foot" unit cost in accordance with the Pay Item Schedule and applicable depth Detail as authorized/approved by CCWA.

Work Items 415 - 416. Internal Point Repair: Defined as the Contractor completing the reshaping of pipe (up to ten feet per repair as measured longitudinally, upstream to downstream) or the removal of a protruding pipe from

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another pipe and disposing of debris. The Work Items will be in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 417 – 420. Flared End Section Installation: (CCWA Provides Material and the Contractor Delivers to Site) Defined as the Contractor completing excavation to grade and removing existing flared end section as may be required and disposing, installing a new flared end section or repositioning an existing flared end of RC, HDPE or Metal and of the indicated size and backfilling excavation to original grade with soil compacted to 95% of its maximum dry density. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 421 – 433. Precast Headwall Installation: (CCWA Provides Precast Headwall Material and Contractor Delivers to Site) Defined as the Contractor completing excavation to grade and removing existing headwall as may be required and disposing, installing a new precast concrete headwall or repositioning an existing precast concrete headwall of the indicated size and backfilling excavation to original grade with soil compacted to 95% of its maximum dry density. Where a double barrel headwall is to be installed, this Work Item may be used, and the work will be considered as two installations. Contractor shall provide and install brick and mortar to seal annular space between headwall and piping and/or space between adjacent headwall sections. Brick shall conform to ASTM C32-11, Grade MS and MM, plain textured surface. Mortar shall conform to ASTM C270, Type S. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 434 – 448. Precast Manhole Installation: (CCWA Provides Precast Manhole and Contractor Delivers to Site) Defined as the Contractor completing excavation to required grade, dewatering as necessary, installing precast concrete manhole of requested size and backfilling excavation to original grade with soil compacted to 95% of its maximum dry density. Contractor shall provide and install mortar to seal lift holes and sectional joints. Where applicable, Contractor shall provide and install brick and mortar to seal annular space between manhole and piping and/or space between adjacent headwall sections. Brick shall conform to ASTM C32-11, Grade MS and MM, plain textured surface. This Work Item may also be used to excavate and install additional riser

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sections or remove / replace riser sections. Comply with “Manhole Sections” Detail and “Dog House Manhole” Detail. Where Constructed Height is indicated, height is measured from top of structure to structure’s invert. For the first 6 Feet of completed structure, the Work Items will be paid on a per “each” unit cost in accordance with the Pay Item Schedule and applicable Detail as accepted/approved by CCWA. For additional height over 6 feet, the Work Items will be paid on a per “vertical foot” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 449 – 452. Concrete Catch Basin Single and Double Wing Top Slabs and Spillways (GA DOT): (CCWA Provides Ring and Cover and Contractor Delivers to Site) Defined as the Contractor excavating to grade where necessary and preparing ground surface for a spillway, installing necessary formwork, ring and cover, steel reinforcement and placing commercial grade 4,000 psi concrete to sizes in accordance with Georgia Department of Transportation (GA DOT) standards for a basin top slab and a basin spillway. Placed concrete shall be vibratory consolidated prior to finishing. Concrete for spill way shall be finished smooth. Concrete for top slab shall be finished with a brush finish. Upon completion, formwork, wasted concrete and other debris shall be removed from the work site and disposed. Steel reinforcement shall be No. 5, Grade 60 bars spaced at 6 inches on-center each way, supported on wire chairs and secured using annealed tie wire; other No. 3 bar reinforcement as required. Install reinforcement in accordance with the CRSI manual for placing reinforcing bars, latest edition. Comply with “GA DOT 1033D” and “GA DOT 1034D” Details; catch basin top slab and spillway with protruded back is not applicable. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 453 – 454. Concrete Catch Basin Top Slabs and Spillways Varying Sizes: (CCWA Provides Ring and Cover and Contractor Delivers to Site) Defined as the Contractor excavating to grade where necessary and preparing ground surface for a spillway, installing necessary formwork, ring and cover, steel reinforcement and placing commercial grade 4,000 psi concrete to varying sizes in general accordance with GA DOT standards for a basin spillway and a basin top. Placed concrete shall be vibratory consolidated prior to finishing. Concrete for spill way shall be finished smooth. Concrete for top slab shall be finished with a brush finish. Upon completion, formwork, wasted concrete and

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other debris shall be removed from the work site and disposed. Steel reinforcement shall be No. 5, Grade 60 bars spaced at 6 inches on-center each way, supported on wire chairs and secured using annealed tie wire; other No. 3 bar reinforcement as required. Install reinforcement in accordance with the CRSI manual for placing reinforcing bars, latest edition. Comply in general with "GA DOT 1033D" and "GA DOT 1034D" Details. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 455. Catch Basin Spillway Throat: Defined as the Contractor excavating to grade where necessary, preparing ground surface, installing necessary formwork and placing commercial grade 3,000 psi concrete. Concrete shall be finished with a brush finish perpendicular to road direction. Upon completion, formwork, wasted concrete and other debris shall be removed from the work site and disposing. Comply with "GA DOT 1033D" and "GA DOT 1034D" Details. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 456 – 458. Concrete Structure Top / Lid: (CCWA Provides Ring and Cover or Hatch and Contractor Delivers to Site) Defined as the Contractor installing necessary formwork, steel reinforcing, ring and cover or hatch and placing commercial grade 4,000 psi concrete of varying thickness and sizes over an existing structure. Placed concrete shall be vibratory consolidated prior to finishing. Concrete shall be finished with a brush finish. Upon completion, formwork, wasted concrete and other debris shall be removed from the work site and loaded for disposal. Steel reinforcement shall be No. 4 or No. 5, Grade 60 bars spaced at 6 inches on-center each way, supported on wire chairs and secured using annealed tie wire. Install reinforcement in accordance with the CRSI manual for placing reinforcing bars, latest edition. Comply with "Concrete Structure Top / Lid" Detail, "Reinforcement in Top / Lid at Circular Opening" and "Reinforcement in Top / Lid at Rectangular Opening". The area of a ring and cover or hatch is not deducted from the overall square footage. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 459 - 462. Concrete Core: Defined as the Contractor coring a hole of a requested size through existing concrete / steel reinforced concrete of

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varying thicknesses, removing concrete core piece and disposing and installing a Kor-N-Seal manhole to pipe connector or other seal required for the work. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 463 – 466. Brick Work Wall Construction: Defined as the Contractor installing brick and mortar to form walls of varying thickness and constructing boxes / vaults of requested sizes. Brick shall conform to ASTM C32-11, Grade MS and MM, plain textured surface. Mortar shall conform to ASTM C270, Type S. The “Brick Deep Wall Construction” description indicates the number of bricks used to construct the depth of the wall. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 467 - 468. Ring and Cover Installation: (CCWA Provides Ring and Cover and Contractor delivers to Site) Defined as the Contractor installing traffic rated or non-traffic rated cast iron ring and cover, setting ring to grade in formwork or with brick and mortar on structure as required, grouting ring to structure or brick work and backfilling excavation to original grade with soil compacted to 95% of its maximum dry density. Brick shall conform to ASTM C32-11, Grade MS and MM, plain textured surface. Mortar shall conform to ASTM C270, Type S. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 469 – 470. Manhole/Structure Invert Construction: Defined as the Contractor installing concrete or brick and mortar channels of the necessary shape and size in manholes to direct flow. Concrete shall be commercial grade 3,000 psi compressive strength. Brick shall conform to ASTM C32-11, Grade SS and SM, smooth surface on both ends and face side. Mortar shall conform to ASTM C270, Type S. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 471 – 473. Cementitious Invert Lining: Defined as the Contractor placing minimum 5,000 psi (24-hour compressive strength) grout, filling voids and lining pipe invert with a consistent grout cross-section to stabilize pipe’s structural capacity such that pipe may still receive CIPP, removing and disposing any waste material. The “Grout Mixed By Hand” description is where mixture is

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provided in a sack, water is added at the work site and mixture and water are combined and mixed together using hand tools; cubic foot quantity is indicated on the sack. The “Grout Mixed By Plant” description is where mixture and water are combined at a plant and mixed in a cement truck. The “Pump Mobilization” description is where a pump is utilized to place grout. The Work Item Detail “Grout Mixed By Hand” will be paid on a per “cubic foot” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item Detail “Grout By Plant Mixing” will be paid on a per “cubic yard” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item Detail “Pump Mobilization” will be paid once for a Project Work Order on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 474 – 476. Cementitious Grouting: Defined as the Contractor installing necessary piping and/or bulk heads to facilitate the work, placing minimum 200 psi grout and completely filling pipe, repairing pipe invert, swiping joints, swiping annular space between host pipe and structure or other work as may be necessary and disposing any waste material. The “Grout Mixed By Hand” description is where mixture is provided in a sack, water is added at the work site and mixture and water are combined and mixed together using hand tools; cubic foot quantity is indicated on the sack. The “Grout Mixed By Plant” description is where mixture and water are combined at a plant and mixed in a cement truck. The “Pump Mobilization” description is where a pump is utilized to place grout. The Work Item Detail “Grout Mixed By Hand” will be paid on a per “cubic foot” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item Detail “Grout By Plant Mixing” will be paid on a per “cubic yard” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item Detail “Pump Mobilization” will be paid once for a Project Work Order on a per “each” unit cost in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 477 – 478. Chemical Grouting: Defined as the Contractor installing necessary fittings, placing chemical grout to stop infiltration in concrete structures and/or fill voids in soil or other work as may be necessary and removing and disposing any waste material. The Work Item Detail “Grout Application” will be paid on a per “gallon” unit cost in accordance with the Pay Item Schedule as accepted/approved by CCWA. The Work Item Detail “Pump

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Mobilization” will be paid once for a Project Work Order in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Items 479 - 483. Hourly Labor: Work Items shall be utilized on a case-by-case basis only when work cannot be completed using other Work Items. Defined as the Contractor providing and utilizing the indicated labor position to complete work as requested for a certain amount of time. Only the time the labor position is on the work site and working will be considered for payment. The hourly rate shall be the Contractor’s total expense per hour for the indicated labor position. Contractor shall provide documentation showing Project hourly costs. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Items 484 - 495. Hourly Equipment: Work Items shall be utilized on a case-by-case basis. Defined as the Contractor providing and utilizing the indicated piece of equipment to complete work as requested for a certain amount of time. Only the time the piece of equipment is in operation will be considered for payment. The hourly rate shall be the Contractor’s total expense per hour for the indicated piece of equipment. Contractor shall provide documentation showing Project hourly costs. The Work Items will be paid in accordance with the Pay Item Schedule and applicable Detail as authorized/approved by CCWA.

Work Item 496. Equipment Rental: Work Item shall be utilized on a case-by-case basis. Defined as the Contractor furnishing equipment not included as part of other Work Items or listed in the Work Item “Hourly Equipment”, to complete work. The Contractor may furnish equipment through a rental company or through the Contractor’s company. Where the Contractor furnishes the equipment through the Contractor’s company, industry standard rental rates for equivalent equipment shall apply. Contractor shall provide invoice from Vendor showing Project costs. The Work Item will be paid at invoice cost plus a Contractor’s 10% percent markup in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 497. Special Material: Work Item shall be utilized on a case-by-case basis. Defined as the Contractor furnishing material, not included as part of other Work Items, needed to complete the work. Contractor shall provide invoice from Vendor showing Project costs. The Work Item will be paid at invoice cost

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plus a Contractor's 10% percent markup in accordance with the Pay Item Schedule as authorized/approved by CCWA.

Work Item 498. Special Services: Work Item shall be utilized on a case-by-case basis. Defined as the Contractor furnishing services through another firm, for work related to this Contract, that is not included on the Pay Item Schedule that is needed to complete the work. Contractor shall provide invoice from Vendor showing Project costs. The Work Item will be paid at invoice cost plus a Contractor's 10% percent markup in accordance with the Pay Item Schedule as authorized/approved by CCWA.

END OF SECTION

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Section 2: Material Requirements

2.1 General

- A. This section describes in general the materials that are to be provided for the work.
 - 1. Where a material is required and not specifically described below, the material shall be provided by the Contractor
 - 2. All materials provided shall be new and domestically manufactured unless approved otherwise.
- B. An indication is provided in each below section of whether the material is to be provided by the Contractor or provided by CCWA.
- C. The material conformance reference forms a requirement of the specification and shall be of the latest edition.

2.2 Material Submittals

- A. Submit, for CCWA approval to use, product information on all materials required to be provided by the Contractor unless noted otherwise.
 - 1. Submittals shall be sequentially numbered. Resubmission of a submittal shall have the original submittal number with sequential alphabetic suffix. Each submittal or resubmittal shall be provided with the following minimum information:
 - a) Project title.
 - b) Contractor name.
 - c) Submittal number.
 - d) Date of submittal.
 - e) Reference the material to the specific "Material Requirements" section.
 - 2. For each material supplied, provide the following minimum information.
 - a) Shop drawings and manufacturer's data showing compliance with Contract Documents.
 - b) Identify any deviation from Contract Documents.
 - c) Resubmission of a submittal shall clearly identify the correction or change made.
 - d) Handling and storage instructions, as applicable.
 - e) Installation instructions, as applicable.
 - f) Manufacturer's Warranty, as applicable.

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Section 2: Material Requirements

3. Additional information may be requested as indicated in the Specifications herein.
- B. Materials provided by the Contractor not approved by the CCWA shall be subject to rejection without further justification.

2.3 Cured-In-Place Pipe

- A. Material provided by Contractor.
- B. Material conformance reference.
 1. ASTM F1216: Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.
 2. ASTM D790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 3. ASTM D2122: Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.
 4. ASTM D5813: Standard Specification for Cured-in Place Thermosetting Resin Sewer Pipe.
- C. Fabric Tube description.
 1. The fabric tube shall consist of one or more layers of absorbent non-woven felt fabric, felt/fiberglass or fiberglass.
 2. The fabric tube shall be capable of absorbing and carrying resins, constructed to withstand installation pressures and curing temperatures and have sufficient strength to bridge missing pipe segments, and stretch to fit irregular pipe sections.
 3. The wet-out fabric tube shall have a uniform thickness and excess resin distribution that when compressed at installation pressures will meet or exceed the design thickness after cure.
 4. The fabric tube shall be manufactured to a size and length that when installed will tightly fit the internal circumference of the original pipe. Allowance shall be made for circumferential stretching during installation.
 5. The tube shall be properly sized to the diameter of the existing pipe and the length to be rehabilitated and be able to stretch to fit irregular pipe sections and negotiate bends.

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Section 2: Material Requirements

6. The outside and/or inside layer of the fabric tube shall be coated with an impermeable, flexible membrane that will contain the resin and facilitate, if applicable, vacuum impregnation and monitoring of the resin saturation during the resin impregnation (wet-out) procedure.
 7. No material shall be included in the fabric tube that may cause delamination in the cured cured-in-place pipe (CIPP). No dry or unsaturated layers shall be acceptable upon visual inspection as evident by color contrast between the felt fabric and the activated resin containing a colorant.
 8. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made. The hue of the color shall be dark enough to distinguish a contrast between the fully resin saturated felt fabric and dry or resin lean areas.
 9. Seams in the fabric tube, if applicable, shall meet the requirements of ASTM D5813.
 10. The outside of the fabric tube shall be marked a minimum of every 5 feet with the name of the manufacturer, manufacturing lot, diameter and thickness.
 11. The minimum length of the fabric tube shall be that deemed necessary by the installer to effectively span the distance from the starting manhole/access point to the terminating manhole/access point, plus that amount required to run-in and run-out for the installation process.
 12. The nominal fabric tube wall thickness shall be constructed, as a minimum, to the nearest 0.5 mm increment, rounded up from the design thickness for that section of installed CIPP. Wall thickness transitions, in 0.5 mm increments or greater as appropriate, may be fabricated into the fabric tube between installation entrance and exit access points.
 13. The quantity of resin used in the impregnation shall be sufficient to fill all of the felt voids for the nominal felt thickness.
- D. Resin description.
1. The resin shall be a corrosion resistant polyester "Filled" resin or vinyl ester resin and catalyst system that when properly cured within the tube composite meets the physical properties herein, and those, which are to be utilized in the design of the CIPP.

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2. The resin shall produce CIPP which will comply with or exceed the structural and of this specification and suitable for a sanitary sewer environment.
- E. Structural requirement description.
1. The CIPP shall exhibit a consistent quality which meets or exceeds the minimum properties specified herein.
 2. The CIPP design shall assume no bonding to the original pipe wall.
 3. The design shall set the long term (50 year extrapolated) Creep Retention Factor at 50% of the initial design flexural.
 4. The CIPP shall, at a minimum, meet or exceed the structural properties, as listed below.

MINIMUM STRUCTURAL PROPERTIES

Property	Test Method	Cured Composite Per ASTM F1216
Flexural Modulus of Elasticity (Short Term)	ASTM D-790	250,000 psi
Flexural Strength (Short Term)	ASTM D-790	4,500 psi

5. The required structural CIPP wall thickness shall be based, as a minimum, on the physical properties of the cured composite and per the design of the manufacturer and in accordance with the Design Equations contained in the appendix of the ASTM standards, and the following design parameters:

Design Safety Factor	2.0
Creep Retention Factor	50%
Ovality	2% or as measured by field inspection
Constrained Soil Modulus	Per AASHTO LRFD Section 12 and AWWA Manual M45
Groundwater Depth	As specified or indicated on the Plans
Soil Depth (above the crown)	As specified or indicated on the Plans
Live Load	Highway, railroad or airport as applicable
Soil Load (assumed)	120 lb/cu. Ft.
Minimum service life	50 years

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Section 2: Material Requirements

1. Manufacturer's Quality Control Plan. Provide a detailed description of materials, manufacturing and field procedures, sampling and testing schedules and documentation that are used to maintain product quality.
2. Sample warranty certification.
3. Curing schedule for each CIPP cure method.
4. Provide a description of the procedures used to remove defective products and/or remedy defects.
5. Published catalog data for the CIPP lateral methods/products to be used.
6. Use of CIPP pre liner justification.
7. Published catalog data for pre-liner material/products to be used.

Acceptable Manufacturers

- As Approved.

2.4 Ductile Iron Pipe and Fitting

- A. Material provided by CCWA.
- B. Material conformance reference.
 1. ANSI/AWWA C151/A21.51: Ductile-Iron Pipe, Centrifugally Cast.
 2. ANSI/AWWA C115/A21.15: AWWA Standard for Flanged Ductile-Iron Pipe with Threaded Flanges.
 3. ANSI/AWWA C110/A21.10: Ductile-Iron and Gray-Iron Fittings.
 4. ANSI/AWWA C153/A21.53: American National Standard for Ductile-Iron Compact Fittings for Water Service.
 5. ANSI/AWWA C111/A21.11: Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
 6. ANSI/AWWA C104/A21.4: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
 7. ANSI/AWWA C116/A21.16: Protective Fusion-Bonded Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings.
 8. ASTM A563: Standard Specification for Carbon and Alloy Steel Nuts.
 9. ASTM A307: Standard Specification for Carbon Steel Bolts, and Studs.

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Section 2: Material Requirements

C. Pipe description.

1. Push-on joint pipe four (4) inches and six (6) inches in diameter shall be Class 51.
2. Push-on joint pipe eight (8) inches in diameter and larger shall be Class 50.
3. Flanged pipe shall have a minimum pressure rating of 250 psi.
4. Restrained-joint pipe shall be of the flex-ring type having a welded bead lock ring or similar having a minimum pressure rating of 250 psi.
5. The following information shall be cast in or stamped on each pipe.
 - a) Weight, class or nominal thickness.
 - b) Casting period.
 - c) Manufacturer's identifying mark.
 - d) Year the pipe was manufactured.
 - e) The letters "DI" or "DUCTILE".
6. Nominal length per joint of pipe is 18 feet or 20 feet.
7. Joint lubricant as provided by the pipe manufacturer.

D. Fitting description.

1. Mechanical fittings for use with push-on joint pipe shall be standard mechanical, compact series, having a minimum pressure rating of 250 psi.
2. Flanged fittings shall have a minimum pressure rating of 250 psi.
3. Restrained-joint fittings shall be of the flex-ring type or similar having a minimum pressure rating of 250 psi.

E. Gasket description.

1. Gaskets for push-on and standard mechanical joints shall be plain rubber (Styrene Butadiene Copolymer).
2. Gaskets (FIELD LOK®) and (MJ FIELD LOK®) used to restrain push-on joint pipe and/or standard mechanical joint fittings, respectively, shall be plain rubber (Styrene Butadiene Copolymer) modified with stainless steel teeth.
3. Gaskets for restrained joint pipe of the flex-ring type and restrained joint fittings of the flex-ring type or similar shall be plain rubber (Styrene Butadiene Copolymer) modified with ductile iron segments.

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4. Gaskets for flanged joints shall be 1/8-inch thick, full-faced, clothed reinforced rubber.
- F. Retaining glands and adapter coupling description.
1. Retaining gland where joint restraint is not required shall be standard mechanical.
 2. Retaining gland (MEGALUG®) where the gland acts as the restraining mechanism, shall include gripping wedges with torque limiting twist-off nuts.
 3. Retaining gland (MJ FIELD LOK®) where the gasket acts as the restraining mechanism shall be suited for application.
 4. Adapter coupling (Foster Adapter®) shall be a bolt-through positive restraining connector between two standard mechanical joints.
- G. Bolt description.
1. Bolts and nuts used for standard mechanical connections shall be tee head type with heavy hex nut.
 2. Bolts and nuts used for flanged connections shall be hex type of low carbon steel, cadmium plated, or zinc plated.
- H. Coating and lining description.
1. Pipe and fittings placed on or beneath the ground surface shall have an exterior coating of asphalt (one mil).
 2. Pipe and fittings placed above the ground surface shall have an exterior manufacturer applied universal phenolic primer (one mil) capable of accepting an epoxy coating.
 3. Pipe that crosses or runs parallel to a gas transmission main, which is or may be cathodically protected, shall be encased in polyethylene tubing, eight (8) mil minimum thickness, overlapped 12 inches and taped.
 4. Pipe and fittings used in the distribution of potable water shall be cement lined.
 5. Pipe and fittings used in sanitary sewer systems shall be cement lined and cement lining sealed with asphalt or lined with 401 Protecto™ ceramic epoxy.

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6. Fittings in lieu of an asphalt coating and cement lining may be coated and lined with five (5) to eight (8) mils of fusion bonded epoxy. Fittings shall be listed by a certifying agency that the coating complies with ANSI/NSF 61.

Acceptable Manufacturers - Model

- U.S. Pipe.
- American Cast Iron Pipe Company.
- As Approved.

2.5 Polyvinyl Chloride Pipe and Fitting

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM D3034: Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings. Pipe requirements, gravity
2. ASTM F679: Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
3. AWWA C900: Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Transmission and Distribution. Pipe requirements, pressure
4. AWWA C905: Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 In. - 48 In. (350 mm - 1,200 mm). Pipe requirements, pressure (large diameter).
5. ASTM D1784: Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
6. ASTM D3139: Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
7. ASTM D3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
8. ASTM D2412: Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate.
9. ASTM F477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

C. Pipe and fitting description.

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1. Pipe for gravity flow applications shall be standard dimension ratio/pipe stiffness SDR 26 / PS115 push-on joint type.
 2. Pipe for pressure flow applications shall be C900/C905 dimension ratio DR 18 push-on joint type.
 3. The following information shall be stamped on each pipe.
 - a) Class identifier.
 - b) ASTM designation.
 - c) Manufacturer's identifying mark.
 4. Nominal length per joint of pipe is 14 feet or 20 feet.
 5. Pipe shall be green in color for sanitary sewer service.
 6. Joint lubricant as provided by the pipe manufacturer.
- D. Gasket and restrained joint description.
1. Gaskets shall be plain rubber suitable for sanitary sewer service.
 2. Gaskets used to restrain joint may be modified with stainless steel teeth.
 3. Pipe bell used to restrain joint may be fabricated with internal lock ring (removable).

Acceptable Manufacturers

- As Approved.

2.6 Reinforced Concrete Pipe

- A. Material provided by CCWA.
- B. Material conformance reference.
1. ASTM C76: Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 2. AASHTO M170: Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 3. ASTM C443: Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
 4. AASHTO M198: Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
- C. Pipe description.

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1. Pipe shall be push-on joint, round or arched, Class III with a shell thickness designation "Wall B".
 2. Manufacturer shall be listed on the Qualified Products List (QPL-4) by the Office of Material and Research, Georgia Department of Transportation.
 3. The following information shall be cast or painted on the interior of each pipe.
 - a) Weight, class or nominal thickness.
 - b) Manufacturer's identifying mark.
 - c) Pipe diameter.
 - d) Stamped with a G.D.T. (Georgia Department of Transportation) or C.P.T. (Certified Pipe/Precast Technician) number.
 4. Nominal length per joint of pipe is 8 feet.
 5. Plastic / rubber inserts to plug lifting holes as provided by manufacturer.
 6. Joint lubricant as provided by manufacturer.
- D. Gasket description.
1. Gaskets shall be Type "A" plain rubber suitable for storm water service.

Acceptable Manufacturers

- As Approved.

2.7 High Density Polyethylene Pipe and Fitting

- A. Material provided by CCWA.
- B. Material conformance reference.
 1. ASTM D3350: Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
 2. AASHTO M252 – Type S: Standard Specification for Corrugated Polyethylene Drainage Pipe.
 3. AASHTO M294 – Type S: Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter.
 4. ASTM F477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- C. Pipe and fitting description.
 1. Pipe shall be push-on, soil tight joint.

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2. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle.
 3. Pipe configuration shall be of integrally formed smooth waterway with circular cross-section braced circumferentially by circular ribs.
 4. Manufacturer shall be listed on the Qualified Products List (QPL-51) by the Office of Material and Research, Georgia Department of Transportation.
 5. The following information shall be stamped or painted on each pipe.
 - a) Manufacturer's identifying mark.
 - b) Pipe diameter.
 - c) Pipe must be pre-inspected and stamped, by means of a thermal branding iron on the interior wall of each pipe section with a P.P.T (Plastic Pipe Technician) number.
 6. Nominal length per joint of pipe is 20 feet.
 7. Joint lubricant as provided by manufacturer.
- D. Gasket description.
1. Gaskets shall be plain rubber suitable for storm water service.
 2. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris.

Acceptable Manufacturers

- As Approved.

2.8 Corrugated Metal Pipe

- A. Material provided by CCWA.
- B. Material conformance reference.
 1. ASTM A760: Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains.
 2. AASHTO M36: Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains.
 3. ASTM A929: Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe.
 4. AASHTO M218: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized), for Corrugated Steel Pipe.

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5. AASHTO M274: Standard Specification for Steel Sheet, Aluminum-Coated (Type 2), for Corrugated Steel Pipe. (aluminized)
- C. Pipe description.
1. Pipe shall be 16-gauge in thickness, round and manufactured with continuous locked seams.
 2. Pipe ends shall be annular corrugated for use with soil tight coupling bands.
 3. The following information shall be stamped or painted on each pipe.
 - a) Manufacturer's identifying mark.
 - b) Pipe thickness.
 - c) Weight of coating.
 4. Nominal length per joint of pipe is 20 feet.

Acceptable Manufacturers

- As Approved.

2.9 Transition Coupling (Rigid)

- A. Material provided by CCWA.
- B. Material conformance reference.
 1. ASTM A513: Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
 2. ASTM A635: Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability
 3. ASME SA36: Rigid follower requirement
 4. AWWA C111/ANSI A21.11: American National Standard for Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (76 mm through 1,219 mm), for Water
- C. Coupling description.
 1. Middle ring, bolts and nuts shall be carbon steel, fusion bonded epoxy coating for buried service.
 2. Followers shall be ductile iron.
 3. Gaskets shall be Buna (S blend).

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Acceptable Manufacturers

- Dresser.
- Smith Blair.
- As Approved.

2.10 Transition Coupling (Flexible Rubber)

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM D5926: Standard Specification for Poly (Vinyl Chloride) (PVC) Gaskets for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems.
2. ASTM C1173: Standard Specification for Flexible Transition Couplings for Underground Piping Systems.

C. Coupling description

1. Manufactured of elastomeric polyvinyl chloride.
2. Tightening bands shall be Series 316 stainless steel, torque setting 60 inch-pounds.
3. Maximum test pressure is 4.3 psi.

Acceptable Manufacturers

- Fernco.
- As Approved.

2.11 Transition Coupling (Flexible Woven Mastic)

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM C877: Standard Specification for External Sealing Bands for Concrete Pipe, Manholes and Precast Box Sections.
2. ASTM D3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

C. Coupling description

1. Coupler is a reinforced rubberized mastic with a woven polypropylene component.
 - a) Polypropylene shall have tensile strength: 4,000 psi minimum.

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- b) Polypropylene shall have a tear resistance: 1,500 psi minimum.
2. Coupler is sealed to pipe via mastic using mechanical compression strap.

Acceptable Manufacturers

- Mar Mac.
- As Approved.

2.12 Hydrophilic End Seal

- A. Material provided by Contractor.
- B. Material conformance reference.
 1. ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension
 2. ASTM D297: Standard Test Methods for Rubber Products – Chemical Analysis
- C. End Seal description.
 1. Designed for use with CIPP and manhole terminations.
 2. Seal material is hydrophilic neoprene.
 3. Seal is molded seamlessly and fitted with a spring-loaded retaining band.

Acceptable Manufacturers

- LMK Technologies.
- As Approved.

2.13 Utility Marking Tape

- A. Material provided by CCWA.
- B. Material conformance reference.
 1. ASTM D2103: Standard Specification for Polyethylene Film and Sheeting.
 2. ASTM D882: Standard Test Method for Tensile Properties of Thin Plastic Sheeting.

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C. Description.

1. Tape shall have a minimum overall thickness of 5 mils and a width as follows.
 - a) 2-inch width for pipes up to 12 inches in diameter.
 - b) 3-inch width for pipes greater than 12 to 24 inches in diameter.
 - c) 6-inch width for pipes greater than 24 inches in diameter.
2. Tape shall have a 0.35 mil solid aluminum foil core with a reverse print laminate to the aluminum foil.
3. Tape shall have a tensile strength of 35 pounds per inch.
4. Tape shall be color-coded in accordance with the American Public Works Association as follows.
 - a) "Blue" for potable water and associated lines.
 - b) "Green" for sanitary sewer and associated lines.

Acceptable Manufacturers

- As Approved.

2.14 Concrete Structures

A. Material provided by CCWA.

B. Material conformance reference.

1. ASTM C478: Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.
2. AASHTO M199: Standard Specification for Precast Reinforced Concrete Manhole Sections.
3. ASTM A615: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
4. ASTM D4101: Standard Specification for Polypropylene Injection and Extrusion Materials.
5. Fed. Spec. SS-S-00210: Sealing Compound, Preformed Plastic, For Expansion Joints and Pipe Joint.
6. ASTM C990: Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

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7. ASTM C923: Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
 8. ASTM C1478: Standard Specification for Storm Drain Resilient Connectors between Reinforced Concrete Storm Sewer Structures, Pipes, and Laterals.
 9. ASTM F2510: Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures and Corrugated High-Density Polyethylene Drainage Pipes.
 10. ASTM C1244: Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.
 11. ASTM A48: Standard Specification for Gray Iron Castings.
 12. AASHTO M306-10: Standard Specification for Drainage, Sewer, Utility, and Related Castings.
 13. ASTM D4833: Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.
 14. ASTM D6693: Standard Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes.
 15. ASTM D1004: Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
- C. Manhole and Structure Description.
1. Manholes shall be cylindrical and constructed of steel reinforced pre-cast concrete.
 2. Minimum compressive 28-day strength of concrete in all sections shall be 4,000 psi.
 3. Manholes shall have a minimum inside diameter of four (4) feet or as indicated on the Construction Drawings.
 4. Pre-cast sections shall consist of a base section (base slab monolithically poured with vertical wall), riser section, reducer section (as applicable) and eccentric cone top or flat slab top section. The sections shall form a continuous uniform assembly.
 5. Joints shall be tongue and groove.

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6. Each section shall have not more than two (2) holes for purposes of handling.
 7. Ring and cover shall be integrally cast in the top cone section unless indicated otherwise.
- D. Step Description.
1. Manhole/structure sections shall be fitted with polypropylene plastic-coated steel steps unless indicated otherwise.
 - a. Manholes sections larger than 4-foot diameter for sanitary sewer service shall not be fitted with steps.
 2. Steps shall be integrally cast into manhole sections.
 3. Steps shall be twelve (12) inches wide and spaced at 1'-0" on center.
- E. Joint Sealant Description.
1. Joints between each section shall be sealed water tight with a preformed semi-solid butyl plastic.
 2. Gasket shall be provided in such size so that when installed, "squeeze out" of the gasket material, can be observed along the entire joint when the joint is completed.
- F. Boot Connector Description.
1. Connector for sealing pipe to precast concrete structure opening shall be flexible natural or synthetic rubber suitable for sanitary sewer service.
 2. A sleeve/boot connector when used shall be fitted with series 300 stainless steel internal expansion sleeve components and series 300 stainless steel external compression take-up clamps, all constructed utilizing no welds.
 3. A gasket connector when used shall be integrally cast into the concrete section by the manhole manufacturer.
- G. Cast Iron Frame and Cover Description
1. Manhole frame shall provide a nominal opening of twenty-four (24) inches in diameter and be either traffic rated or non-traffic rated.
 2. Frame, cover, grate shall meet load specifications of AASHTO H-20 and H-25.

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3. Manhole cover shall have the word "WATER" or "SEWER" or "STORM", according to the service, cast on top in letters two (2) inches high.
4. Manhole cover required to be bolt-down shall be secured with not less than four (4) stainless steel bolts as provided by the manufacturer.
5. Grate and cover shall be nominal twenty-four (24) inches by thirty-six (36) inches and be either traffic rated or non-traffic rated.

H. Composite Frame and Cover Description.

1. Composite material shall be comprised of a polymer containing 45 to 70% fiber reinforcement with a thermoset resin matrix.
2. All components of the ring and cover shall be resistant to the effects of hydrogen sulfide gas.
3. Manhole frame shall provide a nominal opening of twenty-four (24) inches in diameter and be either traffic rated or non-traffic rated.
4. Ring and cover shall meet load specifications of AASHTO H-20 and H-25.
5. Ring and cover shall have an integrated gasket system, lockable with a cam-type assembly and have a combined weight not to exceed 100 pounds.
6. Cover shall have the word "SEWER" cast on top in letters 2 inches in size.
7. Provide a lock wrench with each cover as provided by the ring and cover manufacturer.

I. High Density Polyethylene (HDPE) Liner Description.

1. Where called for lining on manhole structures shall be provided on all vertical riser walls, cone sections and underside of reducer slabs.
2. Liner shall have a mechanical bond to the concrete structure.
3. Liner shall return through each opening created for pipe penetration.
4. Liner color shall be yellow in color.
5. Liner shall have a minimum thickness of 2 mm and resist a back pressure of 29 psi.
6. Section joints shall be sealed water-tight with suitable strips of liner material, extrusion welded by a representative of the liner manufacturer or section joints shall be sealed water-tight by providing a liner that

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returns over the section joint and by providing a joint sealant that contacts the entire lined surface of the return and is suitable to resist degradation by hydrogen sulfide.

Acceptable Manufacturers

- Structure – As Approved.
- Ring, Frame, Cover – As Approved.
- HDPE Liner – Agru America (HDPE AGRU Sure Grip).

2.15 Concrete and Reinforcement

A. Material provided by Contractor.

B. Material conformance reference.

1. ACI 318: Building Code Requirements for Reinforced Concrete: Concrete Mix Requirement.
2. ASTM C150: Standard Specification for Portland Cement.
3. ASTM C33: Standard Specification for Concrete Aggregates.
4. ASTM A615: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
5. ASTM A185: Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.

C. Concrete Mix Description.

1. Design mix shall be in accordance with ACI 318, latest revision.
2. Provide readily available commercial mix.
3. 28-Day Strength: 3,000 psi, unless otherwise noted.
4. Type: Normal Weight.
5. Slump Range: 3 inch to 5 inch.
6. Weight: 135 pcf to 160 pcf.
7. Air Content: 5% to 7%.
8. Water-Cement Ratio: 0.45 Maximum.

D. Concrete Materials Description.

1. Portland cement: Type I, natural color. Use only one brand of cement throughout project.
2. Fine Aggregates: Meeting ASTM C33.

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3. Coarse Aggregates: Meeting ASTM C33, No. 57 Stone.
 4. Water: Clean, potable and free from deleterious amounts of alkalis, acids and organic matter.
- E. Steel Reinforcement Description.
1. Reinforcement Bar: No. 4 size, Grade 60.
 2. Welded Wire: 4x4 – W2.1xW2.1 wire mesh.
 3. Tie Wire: 16-1/2 or 16-gauge black soft annealed wire.
 4. Bar supports, chairs and spacers shall comply with the CRSI “Recommended Practice for Placing Reinforcing Bars”.

Acceptable Manufacturer

- As Approved.

2.16 Grout

- A. Material provided by Contractor.
- B. Description.
1. Minimum 200 psi, cement/sand high-flow mixture, commercial readily available.

Acceptable Manufacturers

- As Approved.

2.17 Brick and Mortar

- A. Material provided by Contractor.
- B. Material conformance reference.
1. ASTM C32: Standard Specification for Sewer and Manhole Brick (Made From Clay or Shale).
 2. ASTM C270: Standard Specification for Mortar for Unit Masonry.
 3. ASTM C144: Standard Specification for Aggregate for Masonry Mortar.
- C. Description.
1. Brick shall be either solid or cored, medium hard or better, Grade SS and SM, plain textured surface for sewer service
 2. Mortar shall be comprised of one (1) part Portland cement to two (2) parts clean sand. Mortar shall be Type S.

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3. Sand shall conform to ASTM C-144.
4. Water shall be clean, potable and free from deleterious amounts of alkalis, acids and organic matter.

Acceptable Manufacturers

- As Approved.

2.18 Asphalt

- A. Material provided by Contractor.
- B. Material conformance reference.
 1. Georgia Department of Transportation "Asphalt Pavement Selection Guidelines, November 2006".
- C. Description.
 1. Aggregate shall be Group II.
 2. Asphalt cement shall be grade PG64-22, PG67-22 or PG76-22.
 3. Hot mix asphalt type shall be Mix Type 9.5, Type I or Type II.

Acceptable Manufacturers

- As Approved.

2.19 Pavement Striping Paint

- A. Material provided by Contractor.
- B. Description.
 1. Water-based paint intended for use for pavement application.
 2. Paint shall be fast dry, dry to the touch in 5 minutes, ready for traffic in 15 minutes.
 3. Color as required to match existing striping.

Acceptable Manufacturers

- As Approved.

2.20 Construction Stone

- A. Material provided by Contractor.
- B. Material conformance reference.

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1. ASTM D2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
2. ASTM D2487: Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
3. ASTM C33: Standard Specification for Concrete Aggregates.

C. Description.

1. Stone size shall be as indicated on Details or Construction Drawings.
2. Stone shall be Class I embedment or backfill material consisting of manufactured aggregates (crushed stone).
3. Stone shall be clean, tough, uniform quality, durable fragments of crushed rock, free from flat, elongated, soft or disintegrated pieces, or other objectionable matter occurring either free or as coating on stone.

Acceptable Manufacturers

- As Approved.

2.21 Erosion and Sedimentation Control Materials

A. Material provided by Contractor.

B. Description.

1. Materials shall be in accordance with the Manual for Erosion and Sediment Control in Georgia, 2016 Edition.

Acceptable Manufacturers

- As Approved.

END OF SECTION

Division 4 **Specifications**

Section 3: Construction Standards

3.1 General Requirements

Construction Details are included in this contract. Construction Drawings or Detailed Site Maps may also be provided as part of the work to show requirements that are to be followed. Where contradictions may arise between the Construction Standards below and Construction Details, Drawings or Site Maps, the Construction Standards shall govern.

3.1.1 Project Submittals

- A. The Contractor shall schedule and submit required information for CCWA review as to cause no delay in the work and/or Time for Completion of a Job.
- B. Submittal review by CCWA will not commence until a Notice to Proceed date is determined for the contract.
- C. Upon receipt of a submittal, CCWA shall complete its review and return CCWA comments to Contractor within 10 business days.
- D. Submittals may be provided via email. Where hard copy submittals are provided, three (3) copies of final approved material data will be required; one (1) copy of approved product material will be returned to the Contractor.

3.1.2 Differing Subsurface or Physical Conditions

- A. If Contractor believes that any subsurface or physical condition at or contiguous to the site that is uncovered or revealed either:
 - 1. Is of such a nature as to require a change in the Contract Documents; or
 - 2. Differs materially from that shown or indicated in the Contract Documents; or
 - 3. Is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

Then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any work in connection therewith except in an emergency, notify CCWA in writing about such condition. Contractor shall not further disturb such condition or perform any work in connection

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therewith (except as aforesaid) until receipt of written order to do so by CCWA. In the case of emergency, the Contractor must notify CCWA immediately, not to exceed 12 hours, of becoming aware of the condition.

- B. After receipt of required written notice, the CCWA and Contractor shall promptly review the pertinent condition, determine the necessity of obtaining additional exploration or tests with respect thereto, and determine a mutually accepted course of action.
- C. The contract price or the contract times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor cost of, or time required for, performance of the Work; subject, however, to that the condition meets above Section 3.1.3, Part A.

3.1.3 Weather Delays

- A. When no pipe installation work and/or no manhole installation work can be performed on a particular day due to measurable precipitation, freezing temperatures or frozen ground surface conditions, then the Work Order is subject to a time extension of one (1) day only. The Contractor cannot charge for labor, overday, equipment or incidental expenses due to a weather delay.
- B. When any pipe installation work and/or manhole installation work is performed on a particular day and measurable precipitation, freezing temperatures or frozen ground surface conditions do occur, then the Contract shall not be subject to a time extension.
- C. Weather recording devices shall be situated on the Project site.
- D. Contractor shall deliver a written Work Order time extension request to CCWA for a weather delay within 24 hours of measuring the weather event. A time extension shall not be granted should a written request not be received by CCWA as indicated.

3.1.4 Site Access and Work Times

- A. The work may require access to private property. The CCWA shall be responsible for coordinating and providing access to the area(s) of work. The Contractor shall contain work within area designated by CCWA.

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- B. The work may be accessed on paved surfaces or non-paved surfaces. Contractor shall provide equipment capable of maneuvering all surfaces. CCWA shall not be responsible for Contractor's equipment that becomes un-maneuverable due to site conditions.
- C. Work on a site shall be allowed Monday through Friday from 7:30 a.m. to 6:00 p.m.; other times may be allowed with CCWA permission only. CCWA shall not compensate Contractor for labor, equipment or incidental expenses should work be required to be completed during times other than Monday through Friday from 7:30 a.m. to 6:00 p.m.
- D. No work shall be allowed on the following CCWA recognized Holidays:
 - 1. Memorial Day
 - 2. Independence Day
 - 3. Labor Day
 - 4. Thanksgiving Day and the following Friday.
 - 5. Christmas Eve and Christmas Day
 - 6. New Year's Day
 - 7. Martin Luther King Jr. Day

3.1.5 Site Safety and Precaution

- A. Construction shall comply with the Department of Labor, Occupational Safety and Health Administration (OSHA), 29 Code of Federal Regulations Part 1926, latest revision.
- B. The Contractor shall be responsible for preparing and implementing a Confined Space Entry Plan in accordance with OSHA's Permit Required Confined Space standard, contained in 29 Code of Federal Regulations (CFR) 1910.146. The CCWA reserves that right to have this document submitted at any time.
- C. The Contractor shall provide all staff with photo identification and use vehicles with permanent company logos/markings/identification that are prominently displayed and clearly visible at all times.

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Section 3: Construction Standards

- D. The Contractor shall provide an experienced supervisor in charge of field operations and subcontractors. The field supervisor shall be responsible for the safety of all site workers and site conditions, as well as ensuring that all work is conducted in conformance with these Specifications and to the level of quality specified. The field supervisor shall be responsible for reporting any safety or regulatory issue of concern immediately to CCWA. The Contractor's superintendent or foreman shall be on-site at all times when any work is being performed, including any work being performed by their subcontractors.
- E. The Contractor shall be responsible for site security. Contractor shall remove as necessary fences and gates and/or other controls to facilitate work. Removed fences shall be reinstalled no later than at the end of that day the fence was removed.
- F. The Contractor shall use special care in work methods and take all necessary precautions against improper use of equipment to avoid damaging pipe and/or structures or CCWA, public and private property. If, in CCWA's opinion, the Contractor's work has caused damage, the Contractor shall repair the damage timely and to the complete satisfaction of CCWA at no additional cost. In the event that funds are expended by CCWA related to these activities the Contractor shall reimburse CCWA for any and all such costs.
- G. The CCWA shall not be responsible or compensate the Contractor for the damage to and/or loss of Contractor's equipment as result of the work.
- H. Note that some job site areas are situated within flood zone and flood during low frequency storm events. Take precautions to protect work, equipment and materials. The CCWA shall not be responsible or compensate the Contractor for the damage to and/or loss of Contractor's equipment as result of flooding.

3.1.6 Construction Facilities and House Keeping

- A. The Contractor may utilize areas within the "construction limits" designation as shown on the Construction Drawings for Project use.

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- B. The Contractor or any other worker may not establish quarters for the purpose of overnight stay or temporary residency on the Project site or other CCWA property.
- C. The Contractor shall employ the “best practicable means” to minimize and mitigate noise as well as disturbance resulting from operations. Mitigation measures shall include the utilization of sound suppression devices on all equipment and machinery, particularly in residential areas and in the near vicinity of hospitals and schools and especially at night.
- D. The Contractor shall remove and dispose of papers, plastics, tin cans and general garbage from the site on a daily basis. Keep the Project site clean.
- E. The Contractor shall remove and dispose all construction related debris associated with their work.
 - 1. Where in these specifications the term “disposal of” is used, the contractor shall dispose of the material/debris off of the project site in accordance with local and state regulations.
- F. The burning of materials is not permitted on the Project site or other CCWA property.

3.1.7 Temporary Utilities

- A. CCWA shall provide the Contractor a meter/backflow device to collect potable water from a nearby fire hydrant at no cost to the Contractor.
 - 1. The Contractor shall be responsible for and return the meter/backflow device to CCWA in the same condition as received. Should the Contractor damage or lose the meter/backflow device, then the Contractor shall be responsible for compensating CCWA for the damages.
 - 2. The Contractor shall be responsible for moving water to Project site area.
- B. The Contractor shall provide and maintain sanitary sewer facilities for Contractor’s employees, subcontractors and all other on-site employees. Service, clean and maintain facilities and enclosures.

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C. Contractor shall provide any necessary electrical power.

3.1.8 Material Handling and Storage

A. CCWA intends for all material (supplied by CCWA) to be delivered to the CCWA Warehouse Building "B" located at 7340 Southlake Parkway in Morrow, Clayton County. Material delivered to the Warehouse Building "B" location will require Contractor pickup.

B. In some cases, material may be delivered to the Project site area.

C. Prior to accepting (unloading) any material on a Project site, the Contractor shall complete a thorough inspection of the material for contract compliance and damages.

1. Once the Contractor takes possession of materials at a CCWA facility or an unloading process on a project site of materials provided by CCWA has started, the Contractor is responsible for storage and protection of the material until Final Acceptance by CCWA.

2. Any material found to be out of compliance with contract conditions or damaged shall be immediately reported to CCWA and its manufacturer for further inspection.

3. Should CCWA agree to accept a material that is out of compliance with contract conditions or damaged, then the Contractor shall not be responsible for the material.

D. The Contractor shall furnish equipment and facilities for loading, unloading and material distribution on a Project site.

1. The Contractor shall handle the material in accordance with the manufacturer's instructions.

2. Any pipe, piping component or material dropped, dumped or damaged by the Contractor during handling procedures shall be subject to rejection by the CCWA without further justification and replaced at the expense of the Contractor.

3.1.9 Material Testing Services

A. CCWA shall contract with a materials testing laboratory and provide soil compaction and concrete strength material testing services.

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1. Testing shall be performed at intervals selected by CCWA.
 2. The Contractor shall cooperate and facilitate material testing services' work.
- B. Testing and reporting shall be performed in accordance with applicable ASTM standards.
1. Testing services shall promptly notify CCWA of irregularities or deficiencies in the work.
 2. Testing services shall provide CCWA and the Contractor copies of field reports and test results.
- C. The testing of pipe and manhole components is described in later sections and is not included as part of CCWA's provided material testing services.

3.2 CCTV Work

3.2.1 General

- A. As requested, perform spot or continuous length inspections of pipe using CCTV.
- B. As necessary, provide all-terrain equipment that can access non paved areas.

3.2.2 Equipment

- A. The CCTV system shall provide a color pan and tilt camera(s) to facilitate the survey and inspection of sewers and laterals.
 1. A 360° rotational scan indicating general conditions must be implemented at every 50 feet interval (min.) along sewers, and at manholes and any notable or defect features.
 2. In the case of bellies in the line, the pipe shall be cleared of any standing water to provide continuous visibility during the inspection.
- B. CCTV equipment shall be self-propelled and capable of surveying/inspecting a length of sewer up to 1,000 feet with access from one manhole only.

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1. Transponder accessory shall be available to locate CCTV equipment from ground surface.
2. The speed of the CCTV camera shall be limited to 40 feet per minute for surveys to enable the inspection to record adequate details.
3. The Contractor shall use a suitable metering device, which enables the cable length to be accurately measured; this shall be accurate to $\pm 1\%$ or 3 inches, whichever is the greater. The Contractor shall demonstrate compliance with the accuracy tolerance at the start of each day or as required by the CCWA. Correct adjustment of the recording apparatus and monitor shall be demonstrated by use of the test tape or other device approved by the CCWA.

3.2.3 Inspection and Submittal

- A. Complete a continuous length pipe inspection and condition assessment in accordance NAASCO PACP standards and best practices, PACP 6.0 format.
 1. All video shall be in a MPEG format.
 2. The Contractor shall insure compatibility with CCWA formats.
- B. At the start of each pipe length being surveyed or inspected and each reverse set-up, the length of pipeline from the entrance to the pipe shall be recorded and reported in order to obtain a full record of the sewer length.
 1. Only one survey shall be indicated on a final report. All reverse set-ups, blind manholes, and buried manholes shall be recorded on a separate report.
 2. Video shall be recorded so that every recorded feature has a correct tape measurement and elapsed time stamp.
 3. Each report shall make reference to a start (ST) and finish (FM) manhole/structure, unless abandonment took place because of blockage
 4. Manhole/structure number shall be indicated in the remark's column of the detail report.

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- C. A data generator shall electronically generate and clearly display on the viewing monitor and subsequently on the recording a record of data in alpha-numeric form containing the following minimum information:
 - 1. Project name/location.
 - 2. Date of survey.
 - 3. Time of start of survey.
 - 4. Pipe/manhole/structure ID reference numbers.
 - 5. Material of construction of the pipe.
 - 6. Pipe dimensions.
 - 7. Automatic update of the camera's footage position from the opening of the pipe from adjusted zero.
 - 8. Direction of survey and direction of sewer flow.
- D. Each inspection shall be saved as an individual file in an electronic format using a "Facility Identification Number _ yymmdd.file type" naming convention. Facility Identification Numbers will be as assigned by CCWA.
- E. For each job, submit CCTV data to CCWA on a flash drive labeled with the Contractor's Company Name and Job Name.

3.3 Cured-In-Place Pipe Work

3.3.1 Design Submittal

- A. A design shall be prepared that meets the structural requirements of the CIPP for the anticipated installation condition.
 - 1. The existing host pipe's condition shall be assumed to be fully deteriorated.
 - 2. Design calculations and an indication of the required CIPP thickness shall be submitted to CCWA prior to installation.
 - 3. CCWA may request the design be reviewed by a third-party engineer with experience in CIPP design.
- B. The following items as a minimum shall be submitted to CCWA for review as part of the design.

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1. Use of CIPP preliner justification.
2. Curing schedule for CIPP cure method.
3. List of possible CIPP defects and a description of the procedures used to remove and/or remedy defects.
4. Name and contact information for the Independent Testing Laboratory that will be used.

3.3.2 Cleaning

- A. Clean existing pipe and remove all internal debris from the pipe line that will interfere with the installation and the final product of the CIPP.
 1. Perform CCTV work while performing cleaning activities.
 2. Take precaution to avoid damaging the pipe.
 3. Clean pipe using high pressure water cleaning techniques. Other cleaning techniques may be utilized upon CCWA approval.
 4. Any loose debris that would produce visible lumps, bumps or protrusions into the CIPP shall be removed.
 5. Any debris resulting from the cleaning shall not enter any adjacent piping system.
- B. Perform post-cleaning video in accordance with current NASSCO and PACP guidelines.
 1. CCWA will view all video work with the Contractor as the work is being performed.
- C. Contractor should notify CCWA immediately of any concerns.

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3.3.3 Installation Work

- A. Install preliner, as necessary, and wet-out tube into the host pipe and cure per the manufacturer's specifications.
 - 1. The wet-out tube shall be positioned in the host pipe using the method specified by the manufacturer.
 - a) The tube shall be inverted through an existing structure and fully extend to the next designated structure.
 - b) The wet-out tube shall be positioned such that no air gap exists between the host pipe and the finished CIPP.
- B. A seal, consisting of a resin mixture or hydrophilic seal compatible with the installed CIPP shall be installed at host pipe's ends in accordance with the CIPP System manufacturer's recommendations.
- C. Prior to installation, remote temperature gauges or sensors as recommended by the CIPP manufacturer shall be placed inside the host pipe to monitor the temperatures during the cure cycle. Liner and/or host pipe interface temperature shall be monitored and logged during curing of the liner.
- D. Curing shall be accomplished by utilizing hot water or steam in accordance with the manufacturer's recommended cure schedule.
 - 1. The curing source (in and output temperatures) shall be monitored during the cure cycles.
 - 2. Temperatures and curing data shall be monitored throughout the installation process.
 - 3. All monitoring and curing data shall be recorded (typed) and submitted to CCWA.
- E. The Contractor shall cool the CIPP in accordance with the approved CIPP manufacturer's recommendations.
- F. The Contractor shall manage the curing/cool down process so that no water/liquid/steam/resin/work debris shall be released downstream.
 - 1. Water released downstream shall not exceed a temperature of 90 degrees Fahrenheit.

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3.3.4 Service Reinstatement

- A. At structures, cut the CIPP neat and square and no more than 1-inch beyond from the end of the host pipe.
- B. At internal services, cut the CIPP using a remote cutting tool with CCTV camera.
 - 1. The machined opening shall be at least 95 percent of the service connection opening and the bottom of both openings must match.
 - 2. The opening shall not be more than 100 percent of the service connection opening. The edges of the opening shall not have pipe fragments or liner fragments, which may obstruct flow or snag debris.
 - 3. In the event that connection reinstatements result in openings that are greater than 100 percent of the service connection opening, the Contractor shall install a CIPP type repair, sufficiently in size to completely cover the over-cut service connection. No additional compensation will be paid for the repair of over-cut service connections.
- C. All cut CIPP material shall be collected and disposed of off site.

3.3.5 Post CCTV and Submittal

- A. Perform a continuous length inspection in accordance with ASTM and NAASCO standards and best practices after installation of the CIPP and reinstatement of the existing services.
- B. Flow control shall be provided to minimize flow from entering the line during the inspection. In the case of bellies in the line, the pipe shall be cleared of any standing water to provide continuous visibility during the inspection.
- C. Immediately prior to conducting the CCTV inspection, thoroughly clean the newly installed liner and remove all debris and buildup that may have accumulated.
- D. Complete a CCTV inspection of the line using a radial view (pan and tilt) TV camera.

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1. The camera shall be panned 360 degrees around the circumference of the pipe and along the wall of the finished pipe at 10 foot intervals.
 2. The data shall note the inspection date, location of all reconnected side sewers, debris, as well as any other defects in the liner, including, but not limited to, gouges, cracks, bumps, or bulges.
 3. CCWA will view the video as the inspection is being performed.
- E. Submit unedited digital documentation of the inspection to the CCWA.

3.3.6 Testing Submittal and Acceptance

- A. The physical properties of the installed CIPP shall be verified through field sampling and laboratory testing.
1. Samples for testing shall be prepared and delivered to a third party laboratory by the Contractor.
 2. Testing shall be performed by an independent third party laboratory selected by the CCWA and as recommended by the CIPP manufacturer.
 3. Tests shall be in accordance with applicable ASTM test methods to confirm compliance with the requirements specified in these contract documents.
- B. Take samples from the actual installed CIPP and test samples for comparison to structural requirements.
1. The sample shall be cut from a section of cured CIPP that has been inverted or pulled through a like diameter pipe which has been held in place by a suitable heat sink.
 2. For pipelines greater in diameter than 15-inches, plate samples may be cured with the CIPP. Plate samples tested shall be of fabric tube and the specific resin proposed for actual construction.
 3. All curing, cutting and identification of samples will be witnessed by the CCWA.
 4. The laboratory results shall identify the test sample location as referenced to the nearest manhole and station.

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- C. Take samples from the actual installed CIPP and test samples for comparison to design thickness.
 - 1. Thickness measurements shall be taken from non-destructive, restrained samples.
 - 2. The liner thickness shall have a tolerance of minus 5% plus 10%. Where liner thickness does not meet the tolerances of the approved design, additional samples may be taken at the Contractor's expense and averaged to determine thickness.
 - 3. Results of measurements must show samples exhibit a thickness within the listed tolerances.
 - 4. Liners installed that are thicker than required designed will not be approved for additional payment.
- D. CIPP shall be accepted when all of the following exist.
 - 1. The finished liner is continuous over the entire length of the installation and free of visual damage, holes, leaks and other defects.
 - 2. Samples from the CIPP show that structural properties meet or exceed material requirements.
 - 3. Samples from the CIPP show that thickness tolerances meet the required design thickness.
- E. Submit all laboratory documentation and test results to CCWA.
- F. CIPP not being accepted by CCWA will be removed and disposed of at the Contractor's expense.

3.4 General Site Work

The prime contractor shall have a representative from the prime contractor's company on site whenever any work is being performed on a project.

3.4.1 Permits and Utility Locates

- A. CCWA will procure the necessary Land Disturbance Activity permits, Georgia Department of Transportation permits, Natural Gas permits and Rail Road permits.

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- A. Contractor shall display permits and contact respective agencies as required by applicable permit conditions.
- B. Contractor shall locate existing utilities in accordance with local and state regulations.

3.4.2 Traffic Control

- A. Traffic control shall be provided as required to maintain a safe work site.
- B. Contractor should assume that traffic control is required for all work. The cost of traffic control shall be incorporated into the pricing of Work Items to complete the work.
 - 1. Provide to the applicable local authority for approval a traffic control plan in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), latest revisions, when any work is being performed in the road right of way.
 - 2. Provide the approved traffic control plan to CCWA a minimum of five (5) business days in advance of the start of work.

3.4.3 Clearing and Grubbing

- A. Construction Limits shall be staked/flagged in advance of the Contractor's work. Contractor shall not remove stakes or clear those flagged trees/brush.
- B. Area within the permanent easement, road right-of-way or 20-foot width centered over the pipe shall be cleared of all trees, stumps, other limbs affecting the work area, buried logs, brush, grass and other unsatisfactory debris unless indicated otherwise.
- C. Areas outside the permanent easement but within the construction limits may be cleared at the Contractor's discretion.
- D. Trees to remain in or near work area shall be protected from clearing activities. Should trees left remaining in the construction limits at the discretion of the Contractor subsequently die during the warranty period, then the Contractor shall be responsible for their removal and disposal and any related restoration work.
- E. All damaged trees over three (3) inches in diameter shall be repaired by an experienced nursery expert.

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- F. Tap roots and other projections exceeding 1-inch in diameter shall be grubbed out to a depth of at least 18 inches.
- G. All holes remaining after grubbing activities shall be filled with suitable material and properly compacted in layers to density required for in-place backfill.
- H. All materials cleared and grubbed shall be disposed of off-site in accordance with applicable local, state and federal regulations.
- I. Burning of any material or debris shall not be permitted.
- J. Prior to and upon completion of clearing and grubbing activities, install erosion control measures as identified on the construction drawings.

3.4.4 Topsoil Stockpiling

- A. Remove topsoil to full depth encountered in areas to be graded and stockpile soil.
- B. Soil shall be placed such that the integrity of an excavation or proposed excavation is not jeopardized.
- C. Stockpile shall be shaped to drain or covered to keep dry and install appropriate erosion control measures.

3.4.5 Existing Utilities

- A. Remove and subsequently replace at same grade and elevation existing utility pipes and associated components.

3.4.6 Removing Pavement

- A. Roadway pavement shall be removed for the entire lane width or as indicated on the Construction Drawings. Removal of roadway pavement shall be performed so as not to endanger roadway activity. Work shall be coordinated and in compliance with the appropriate road and highway agencies.
- B. Driveways shall be removed to their full width from the edge of road pavement to the back of right-of-way or construction lane whichever is greatest distance from edge of road pavement, unless indicated otherwise.

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- C. Sidewalks shall be removed to their full width from the edge of curb, road pavement or construction/control joint to the nearest adjacent construction/control joint.
- D. Curbs shall be removed for the entire length from control joint to control joint.
- E. Pavement shall be marked squarely and neatly to size as indicated on Construction Drawings.
- F. Pavement shall be scored and broke along the marked lines using a rotary saw and jackhammer. Pavement shall not be machine pulled for initial brake.
- G. Adjacent pavement damaged during construction shall be removed as described above and replaced in accordance with the Construction Drawings at the expense of the Contractor.
- H. Upon removal, asphalt and concrete shall be loaded and disposed of off-site the same day of removal.

3.4.7 Grading

- A. Finish grade areas to lines and elevations indicated as existing grades on drawings or to surrounding surface grades.
- B. Graded areas shall be within 0.10 foot of required subgrade elevation and shall not permit the ponding of water.
- C. In areas to receive grassing, redistribute stockpiled topsoil over graded areas to a minimum depth of four (4) inches. Provide additional topsoil to achieve required depth.
- D. Where finish grade meets or abuts curbs, walks or pavement, uphill grades shall be slightly higher than curb or pavement to permit drainage.
- E. In yard, right-of-way and mowed areas, remove rocks and dirt clods $\frac{3}{4}$ -inch in size and larger.
- F. Excess soil, rock and debris shall be removed from the project site.

3.4.8 Erosion Control

- A. Install perimeter erosion control measures (when necessary) prior to initiating any work.

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- B. Stabilize Project site areas in accordance with the erosion control plans and details and/or the “Manual for Erosion and Sediment Control in Georgia”, latest edition.

3.4.9 Clean-Up

- A. Upon completion of each day’s work, broom sweep/pressure wash as necessary any dirt/mud/debris from side walk, curb and pavement surfaces and dispose.
- B. Upon site being stabilized with vegetation, all erosion control measures and any remaining debris (i.e. silt fence, stakes, hay bales) shall be removed from site areas.

3.5 Flow Interruption

3.5.1 General

- A. Flow interruption may be completed using plugging and/or bypass pumping methods.
- B. Flow interruption methods shall be capable of handling peak flow conditions as determined by CCWA.
- C. The Contractor shall take all necessary steps to eliminate the overflow of sewage. In the event of an overflow of sewerage, the Contractor shall be responsible for cleanup of the area and all other pertinent activities as required by the Georgia Environmental Protection Division (GAEPD). All costs of these restoration/cleanup activities shall be the responsibility of the Contractor. In the event that funds are expended by the CCWA related to these activities the Contractor shall reimburse the CCWA for any and all such costs including but not limited to the costs expended by the CCWA for fines levied by the GAEPD.
- D. The Contractor shall be responsible for damage to public or private property due to flow interruption. All costs of restoration/cleanup activities shall be the responsibility of the Contractor. In the event that funds are expended by the CCWA related to these activities the Contractor shall reimburse the CCWA for any and all such.
- E. The Contractor will indemnify and hold harmless the CCWA for any fines or third-party claims for personal or property damage arising from flow interruption that is the responsibility of the Contractor.

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Should fines subsequently be imposed as a result of any flow interruption for which the Contractor is fully or partially responsible, the Contractor shall pay all such fines and all of the legal, engineering, and administrative costs in defending such fines and claims associated with flow interruption.

3.5.2 Flow Interruption Submittal

- A. Submit a flow interruption plan for CCWA approval whenever flow interruption of any type is to be utilized.
- B. CCWA will provide flow rates.
- C. Indicate flow interruption method and include a map that shows manholes/structures affected; this includes plugging/suction points, flow discharge points, space required for pump(s) set up and route for discharge piping.
- D. Indicate pump and piping size; pumping capacity shall be capable of handling peak flows.
- E. Include an emergency response plan to be followed in the event of a failure of the system.

3.5.3 Pumping System

- A. Furnish, install and maintain a primary pumping system and a redundant pumping system with automated emergency call services, appurtenances, bypass piping and fuel required to maintain anticipated flows and services.
- B. All pumps used shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered. All pumps used must be capable of running dry. Bypass pumping systems will be equipped to be operated continuously 24 hours per day.
- C. Each pump shall have an individual suction line. Suction lines of two or more pumps can not be manifolded together. No more than two (2) pump discharge hoses shall be used for the bypass/diversion. If the flow exceeds the capacity of 2 hoses, then rigid piping shall be used. Rigid piping shall consist of HDPE or steel pipes with suitably pressure rated couplings to withstand twice the maximum system

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pressure or 50 psi, whichever is greater. Under no circumstances will aluminum irrigation type piping or glued PVC pipe be allowed.

- D. Pumped sewage shall be in an enclosed hose or pipe that is adequately protected from traffic. Install traffic rated hose/ramp assemblies where discharge crosses paved surfaces and entrances to business/residential properties.
- E. All bypass pumps shall be installed with the bottom of the skids out of or above the 100-year flood elevation. Piping crossing swamps and creeks shall be installed above the 100-year flood elevation and secured to a ridged structure. All other piping within the 100-year flood elevation shall be secured to prevent pipe movement during rain events and flooding.
- F. All pump/engine assemblies shall be fully enclosed and equipped with sound suppression systems.
- G. All bypass pump suction point locations and discharge point locations shall be covered/sealed to prevent odor.
- H. A bypass pumping "drill" shall be performed by the Contractor to demonstrate system readiness if requested by CCWA. The drill shall demonstrate the incorporation of all standby equipment, including callout services, to handle flows when the main pump set is switched off. Provisions to accommodate any of the CCWA's review comments following the drill shall be adhered to in full at no additional cost.
- I. Install temporary fence (8-feet in height) around bypass pumps, suction point locations and discharge point locations to provide precautionary measures for the protection of persons or property.

3.6 Dewatering

- A. Provide dewatering systems as necessary to maintain excavations dry at all times during construction.
- B. Water withdrawn from excavations or dewatering systems shall be filtered using containerized sedimentation systems, filter bags and/or filter tubes.
- C. Install appropriate erosion control measures as may be necessary.
- D. Sediment collected within the systems shall be disposed of offsite.

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3.7 Excavation

3.7.1 Shoring

- A. The Contractor shall assume the responsibility for design and construction of excavation shoring and bracing capable of supporting excavations and construction loads.
 - 1. Where depths require, provide shore design and details stamped and sealed by a Professional Engineer Licensed in the State of Georgia for CCWA review.
- B. Use trench boxes, steel sheets, and/or sheet piles where ever possible to prevent the weakening of surrounding soils.
- C. Use trench boxes, steel sheets, and/or sheet piles when digging next and near power/utility poles.

3.7.2 Pit and Trench

- A. Excavation shall include those measures necessary to establish trench widths and required grades.
 - 1. Excavation shall include removal and disposal off-site of all pipe and manhole materials encountered in the proposed locations of new pipe and manholes.
 - 2. Excavation should be completed to natural undisturbed soil. Where unsuitable material is encountered, over excavate through unsuitable material and backfill to required grade with Surge Stone or No. 57 stone. The CCWA Inspector shall determine depth of over excavation.
- B. Excavated soil shall be placed in a location such that the integrity of the excavation is not jeopardized.
- C. Excavated soil shall be kept dry for subsequent use. Install appropriate protection measures and erosion control measures.
- D. The excavation shall provide space for inspection of utilities and appurtenances.
- E. Maintain excavations dry at all times using pumps, well points or other dewatering means.

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- F. When laying pipe, limit trenching to not greater than 100 feet ahead of completely backfilled work.
- G. Open excavations shall be made safe at all times. Contractor should assume that traffic plating will be required on all jobs.
 - 1. When work on a site is not ongoing (construction not actually occurring), cover all excavations with traffic plating or barricade with concrete barrier wall or other safety related barrier wall and rope-off with identifying tape as approved by CCWA; only staking and use of caution tape is not acceptable.
 - 2. Install steel traffic plates where applicable to facilitate ongoing construction, e.g. to cover excavations overnight, to cover placed concrete during cure, to cover excavations in roadways, to provide access to property, to cover backfilled excavations in heavy traffic areas as determined by CCWA, etc.

3.7.3 Rock

- A. Rock is defined as removing and disposing of solid material being greater than one (1) cubic yard in size which by actual demonstration cannot, in the opinion of the CCWA Engineer, be reasonably excavated with a minimum 135 horsepower excavator, in good condition and equipped with manufacturer's standard boom and rock points or similar approved equipment; and which must be systematically drilled and blasted or broken by power-operated hammer, hydraulic rock breaker or expansive compounds.
- B. Excavation shall include those measures necessary to establish grades indicated on drawings for utilities and appurtenances. Rock shall be excavated to a minimum depth of six (6) inches below grades indicated on drawings.
- C. The Contractor shall be responsible for determining methods required for removal of rock or hard materials (i.e. systematically drilled and blasted or broken by power-operated hammer, hydraulic rock breaker or expansive compounds).
- D. A licensed explosive contractor shall perform blasting operations.
- E. Blasting operations shall be conducted in accordance with all local, state and federal regulations. The Contractor is responsible for

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repairs and/or replacement of damaged property(s) resulting from the work.

- F. Excavated rock shall not be used as backfill in excavations. Contractor shall replace volume of excavated rock with suitable soil.

3.8 Open Excavation Pipe Work

3.8.1 Bedding

- A. Pipe bed shall be established to elevations and grade as shown on the Construction Drawings or to match a requested condition.
- B. Pipe bed material and depth shall be as indicated on the Construction Detail / Construction Drawings. Stone shall be shovel sliced from beneath the pipe up to one-third (1/3) the pipe diameter. The entire length of barrel shall be fully supported with stone.
- C. Stone shall be used to backfill pipe to a height of six (6) inches above the top of the pipe.
- D. When installing pipe in areas of excavated rock, pipe shall be placed on a bed of stone, minimum six (6) inches in depth.
- E. Soil determined to be unsuitable by the CCWA Inspector shall be removed to a determined depth and replaced with stone to desired grade.

3.8.2 Pipe Installation

- A. Comply with manufacturer's installation instructions.
- B. Install pipe of material type and size as shown on the Construction Details or Construction Drawings.
- C. Prior to placement, the interior of pipes and fittings shall be cleaned free of dirt and debris.
- D. Pipe, fittings and accessories shall not be laid or jointed in water.
- E. Pipe, fittings and accessories shall be handled and lowered into their respective positions using choker straps.
- F. A slight hole shall be dug where pipes are to be jointed to relieve pipe bell of any load. Pipe barrel shall be supported for its entire length.

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- G. Install compression type full-face gasket coupling or solid sleeve style coupling on pipe to ensure proper joint sealing. The pipe mating ends and coupling shall be thoroughly cleaned and soaped before jointing. The mating ends shall be aligned in accordance with the manufacturer's tolerance and carefully shoved together using a steady force.
- H. Install polyethylene tube plastic on piping at locations where natural gas transmission mains exist as directed by CCWA.
- I. Where casing is being installed in an open excavation, casing lengths shall be as long as practicable and joined by single grooved butt weld for the entire circumference of the casing.
- J. Prior to joining consecutive pipe, backfill previously jointed pipe with sufficient material to prevent movement.
- K. Backfill pipe trench to the required grade in accordance with backfill and compaction requirements.
 - 1. Install warning tape over buried piping during backfill operations. Detection tape shall be installed centered, approximately 24 inches above the pipe.
 - 2. Install tracer wire taped to pipe and terminated at locations determined by CCWA.
- L. New pipe and existing pipe shall be cut to lengths as required in accordance with manufacturer instructions using a rotary-type saw. Prepare cut ends in accordance with manufacturer instructions.
- M. When installing a pipe into a manhole or box structure, pipe end shall not extend greater than 12-inches beyond the inside face of the structure as measured at the 3 or 9 o'clock position.
- N. When installing a pipe into a headwall, pipe end shall be flush with the outlet face of the structure.
- O. Place a plug in the open end of uncompleted laid piping at the end of each day.
- P. When installing water mains/piping, piping shall be laid to above existing grade and to direction as requested by CCWA to facilitate flushing. CCWA shall perform all flushing operations and Contractor

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shall provide access/cooperate to facilitate the work. Upon completion of flushing, mains/piping shall be laid to required grade.

- Q. Pipe shall not be placed in service until all testing has been accepted by CCWA.
- R. Pipe not laid to the requested grade/alignment shall be removed and subsequently laid to the requested grade/alignment and the expense of the contractor.

3.8.3 Pipe Testing

- A. Testing shall be performed when backfill to finished grade and compaction are complete and dewatering has been discontinued for a minimum 24 hour period at the location of the test.
 - 1. All pipe installed shall be tested as indicated below.
 - 2. Contractor shall document all testing in such manner as necessary to show completion of the work.
 - 3. A CCWA Inspector must be present and witness any type of testing for acceptance.
 - 4. Any pipe not passing required testing shall be replaced or repaired at the Contractor's expense.
- B. Air Pressure Testing: Sanitary sewer gravity-flow pipe installed between new manholes shall be subjected to a low air pressure test at each joint. Pipe shall be free of dirt and debris prior to testing. The internal air pressure of the pipe shall be raised to approximately four (4) psi. The test shall begin when the stabilized pressure is at a minimum of 3.5 psi. Test and pipe shall be considered acceptable when an air pressure equivalent to the stabilized pressure is maintained for a period of five (5) minutes.
- C. Deformation Testing: All pipe shall be tested for deformation. Pipe shall be free of dirt and debris. Any measured location may not show deformation of more than three (3) % of the pipe's manufactured published inside diameter.
 - 1. The diameter of other pipe shall be determined by using a mandrel measuring device being pulled throughout the entire length of the pipe segments.

Division 4

Specifications

Section 3: Construction Standards

- D. Televising Testing: All pipe shall be televised to ensure integrity and document installed condition. Pipe shall be free of dirt and debris prior to televising. A video recording in general compliance with ASTM and National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) standards shall be completed through the pipe from manhole to manhole to show completed work. A video recording of each segment laid shall be provided to CCWA.

3.9 Concrete Structure Work

3.9.1 Structure Installation

- A. Install structures of required sizes and at locations and elevations as shown on Construction Drawings. Structures shall be set atop stone as indicated on the Construction Drawings/Details.
- B. The bed shall be prepared so that the structure is set level.
- C. Sections shall be handled with lifting straps or hooked cables using a minimum of two (2) of the manufactured manhole lifting holes.
- D. Sections shall be positioned such that influent and effluent piping enter the center of their respective opening not pinching the rubber boot seal. Pipe shall not rest on invert of opening.
- E. Sections shall be stacked level and plumb at all times.
- F. Prior to joining consecutive sections, tongue-and-grooved ends shall be cleaned free of dirt and debris.
- G. Tongue-and-grooved ends shall be fitted with preformed gasket sealing compound. Sealing compound shall be installed in such manner that when consecutive sections are stacked, sealing compound can be visually observed "squeezing out" from all sections of the joint.
- H. Lifting holes shall be plugged with rubber stoppers or sealed using non-shrink grout throughout the entire depth of hole.
- I. Seal annulus between pipe and core opening using rubber boot in accordance with the manufacturer's instructions or brick and mortar when applicable.

Division 4

Specifications

Section 3: Construction Standards

- J. Upon completion of visual testing activities, where applicable, install HDPE cap over joint locations.
- K. Manholes may not be placed in service until all testing has been accepted by CCWA.
- L. Structures not set to the requested grade/alignment shall be removed and subsequently set to the requested grade/alignment and the expense of the contractor.

3.9.2 Invert Construction

- A. Clean base free of dirt and debris before constructing invert.
- B. Construct "U-shape" style smooth invert from brick and mortar or cast-in-place concrete to size and elevation as shown on the Construction Drawings and as necessary to direct flow.
- C. Special care shall be taken such that the finished invert does not touch any pipe material.
- D. Invert construction shall have sufficient time to cure as not to be affected by in-service conditions.

3.9.3 Manhole Testing

- A. Testing shall be performed when backfill to finished grade and compaction are complete and dewatering has been discontinued for a minimum 24 hour period at the location of the test.
 - 1. Every newly installed manhole shall be tested.
 - 2. Contractor shall document all testing in such manner as necessary to show completion of the work.
 - 3. A CCWA Inspector must be present and witness any type of testing for acceptance.
 - 4. Any manhole not passing required testing shall be replaced or repaired at the Contractor's expense.
- B. Visual Water Infiltration Testing: Manhole testing shall be performed by visually observing for water infiltration at all manhole sections, at all pipe / rubber boot seal connections, at all manhole / rubber boot seal connections. Test shall be considered acceptable when no water infiltration is observed at any described observation points.

Division 4 **Specifications**

Section 3: Construction Standards

- C HDPE Liner Testing: Holiday test HDPE caps at joints using applicable voltage spark test. Test shall be considered acceptable when spark test reveals no holidays. Other testing procedure may be considered.

3.10 Backfill and Compaction

3.10.1 Backfill

- A. Excavations shall be backfilled using suitable material in accordance with the Construction Drawings or applicable Details.
- B. Place no backfill until any poured concrete has sufficient compressive strength.
- C. Place backfill against below grade walls (i.e. manhole sections) in uniform level lifts to prevent wedging action.
- D. When backfilling areas to be paved, the final 6 inches is to be filled with graded aggregate base. Prior to paving, remove required aggregate and dispose.
- E. Backfill shall not be placed on surfaces that are saturated, frozen or containing frost or ice.
- F. Place backfill in excavations as follows.
 - 1. Backfill in loose lifts not exceeding 6 inches when compacting using manual tamping devices (jumping jack).
 - 2. Backfill in loose lifts not exceeding 12 inches when compacting using vibrating/ramming devices (sheep-foot vibratory roller).
- G. Any settlement shall be filled and compacted to conform to adjacent surfaces.

3.10.2 Compaction

- A. Backfill shall be compacted using manual tamping devices or vibrating/ramming devices.
- B. Use manual tamping devices to compact soil as follows, otherwise use vibratory devices.
 - 1. When area is inaccessible to vibrating devices and within 2 feet of below grade walls (includes manholes).

Division 4

Specifications

Section 3: Construction Standards

2. From bottom of pipe trench to twelve (12) inches above the top of pipe.
- C. Compaction requirements are as follows.
 1. Backfill in road right-of-way shall be compacted the entire depth to a minimum of 95% of the maximum dry density as determined by a Standard Proctor Analysis.
 2. Backfill not described above shall be compacted for the entire depth to a minimum of 90% of the maximum dry density as determined by a Standard Proctor Analysis.
 3. Soil installed and not meeting the compaction requirements shall be removed and re-installed and compacted or replaced with other approved material and compacted at the expense of the contractor.

3.10.3 Compaction Testing

- A. Samples from the proposed construction area shall be analyzed for maximum dry density in accordance with ASTM 698 – Method C or applicable GDOT standard.
- B. The extent of testing required shall be dependent upon soil conditions, Contractor's methods of construction and regulatory requirements.
- C. Minimum compaction testing shall be as follows.
 1. Backfill in excavations shall be tested at 2-foot lift intervals per 1,000 square feet of fill or as deemed necessary by the CCWA Inspector.
 2. Backfill in trench excavations shall be tested at 2-foot intervals per 400 linear feet of fill or as deemed necessary by the CCWA Inspector.
- D. Soil failing compaction tests shall be subsequently retested. Any retests shall be performed by the CCWA provided material testing company at the expense of the contractor.

Division 4

Specifications

Section 3: Construction Standards

3.11 Asphalt and Concrete Placement

3.11.1 Asphalt Placement

- A. Compact existing base and/or add and compact necessary aggregate base/concrete material in accordance with the Construction Drawings.
- B. Cut edges of existing asphalt neat and square.
- C. Apply prime / tack coat as necessary to facilitate asphalt placement.
- D. Install asphalt using mechanical spreader machine and compact to thicknesses as shown on the Construction Drawings or to thickness to match existing asphalt.
- E. Install within thickness layers as described in Table 3 of Georgia DOT document "Asphalt Pavement Selection Guidelines", November 2006.

3.11.2 Concrete Placement

- A. Construct formwork to lines and elevations as shown on Construction Drawings.
- B. Clean forms of dirt and debris prior to each use.
- C. Install steel reinforcement and/or wire, support on chairs and secure to prevent movement.
- D. Concrete shall not be placed on loose, saturated or frozen soil.
- E. Concrete shall be placed only when ambient temperature is at 40° F and rising.
- F. Place concrete to thicknesses as shown on the applicable Details or to thickness to match existing concrete using suitable means and consolidate concrete with vibrator of suitable vibrations per minute.
- G. Screed slabs / curbs by use of straight edge or screed board.
- H. Saw control joints as soon as concrete can be traveled by foot without leaving impressions.
 - 1. Control joints shall be installed at interval spacing of 1-1/2 times slab width or at a maximum spacing of 10 feet, whichever is closer.

Division 4

Specifications

Section 3: Construction Standards

2. Saw joint depth shall be $\frac{1}{4}$ of the slab depth.
- I. Concrete shall be finished with a slight broom finish perpendicular to the travel path.
- J. Begin curing after placement and finishing of concrete as soon as free water has disappeared from concrete surface.
 1. Curing methods shall be by the continuous application of water for 72 hours or by applying a liquid membrane forming curing-sealing compound to the fresh concrete surface.
- K. Removal of formwork shall take place no sooner than 24 hours after placement of concrete.

3.11.3 Concrete Testing

- A. Concrete from each truck shall be subjected to a slump test in accordance with ASTM C172 and C143.
 1. Concrete arriving on the Project site and not exhibiting the required slump may be rejected at the discretion of the CCWA inspector.
- B. Concrete shall be laboratory tested for compressive strength at the discretion of the CCWA Inspector.
 1. Samples shall be collected in accordance with ASTM C172 and ASTM C31.
 2. Samples shall be tested for compressive strength in accordance with ASTM C39.
 3. Concrete placed not meeting the required compressive strength shall be subject to rejection and removal at the discretion of the CCWA inspector.

3.12 Acceptance

- A. A CCWA Inspector shall inspect all components of work for compliance with the Contract. The Contractor shall, at all times, permit and facilitate inspection of work by the CCWA. The presence of a CCWA Inspector or other CCWA staff on the site of work shall not be construed to, in any manner, relieve the Contractor of their responsibility for strict compliance with the Contract. The CCWA Inspector shall inform the Contractor when

Division 4

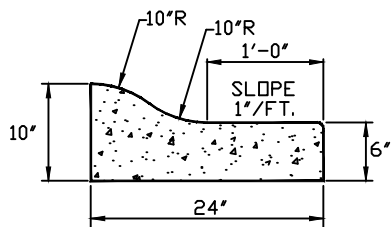
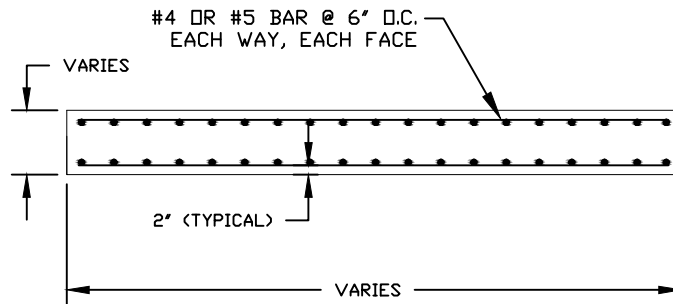
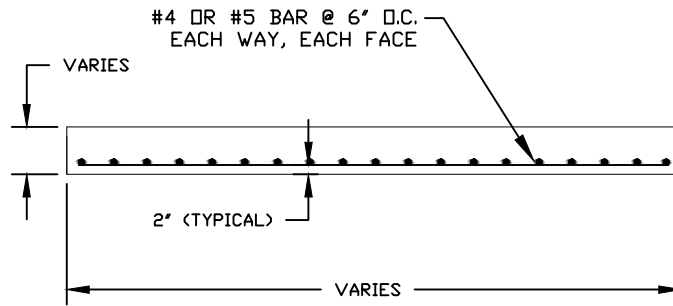
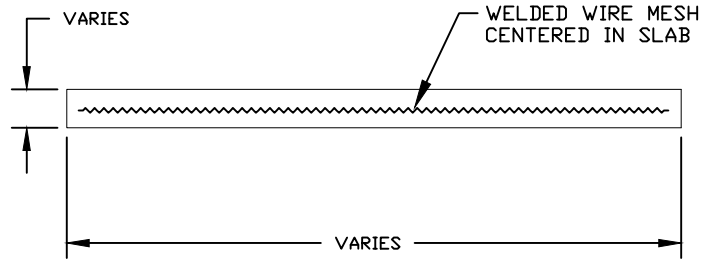
Specifications

Section 3: Construction Standards

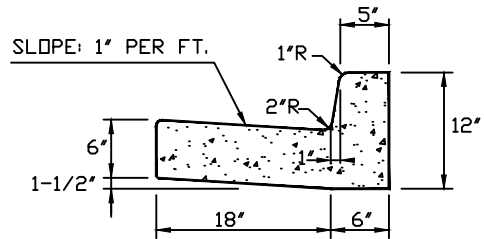
work is deficient from the Contract. Deficiencies shall be addressed in a timely manner as determined by the CCWA Inspector.

- B. Final Acceptance of the work by the CCWA shall be when the Contractor has met all terms and conditions as set forth by the Contract. The date of Final Acceptance shall be no later than the date the CCWA approves the Contractor's final request for payment. Where applicable, Final Acceptance shall be written, signed and dated by the CCWA.

END OF SECTION



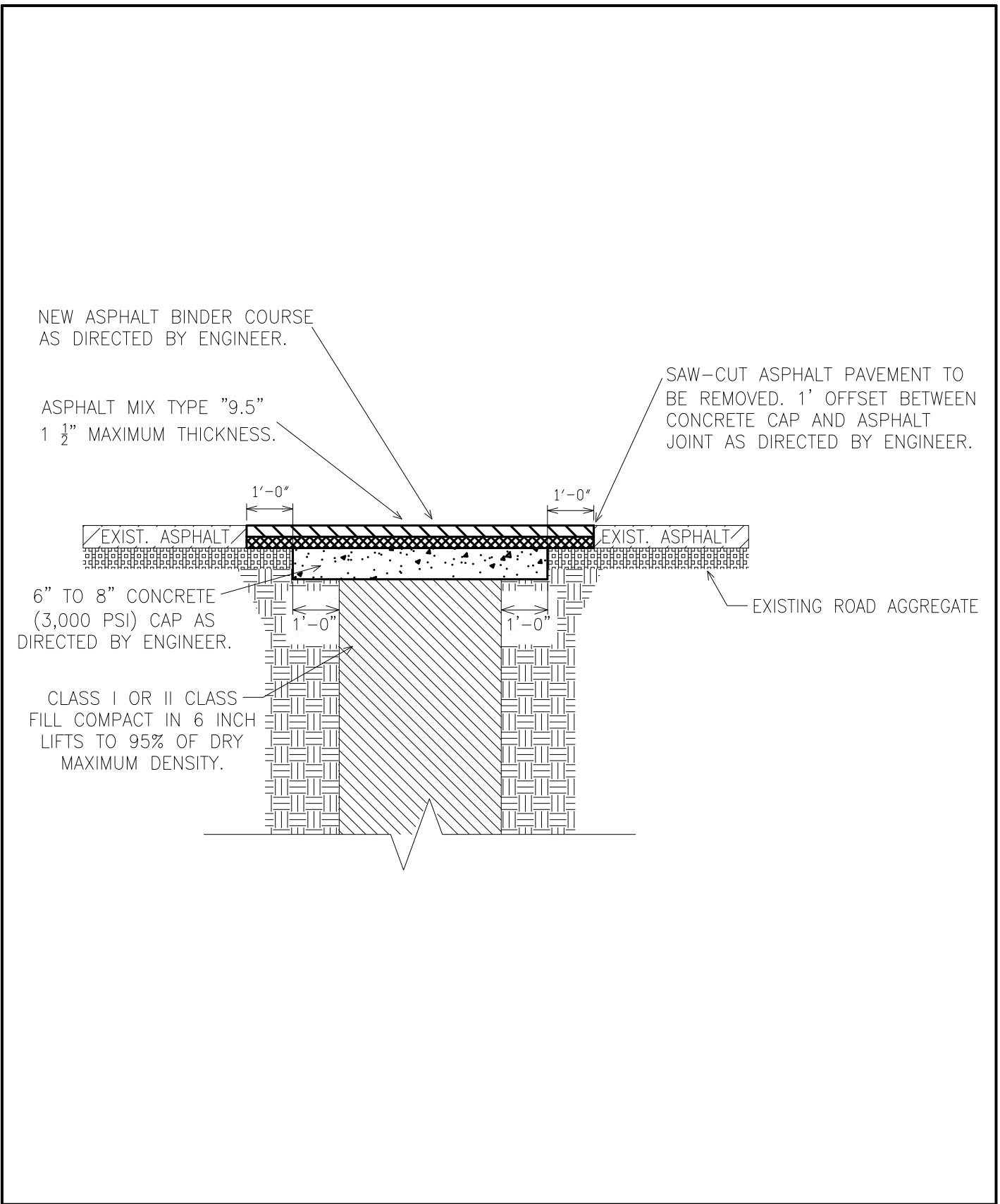
ROLLED TYPE CURB AND GUTTER



24" VERTICAL CURB AND GUTTER

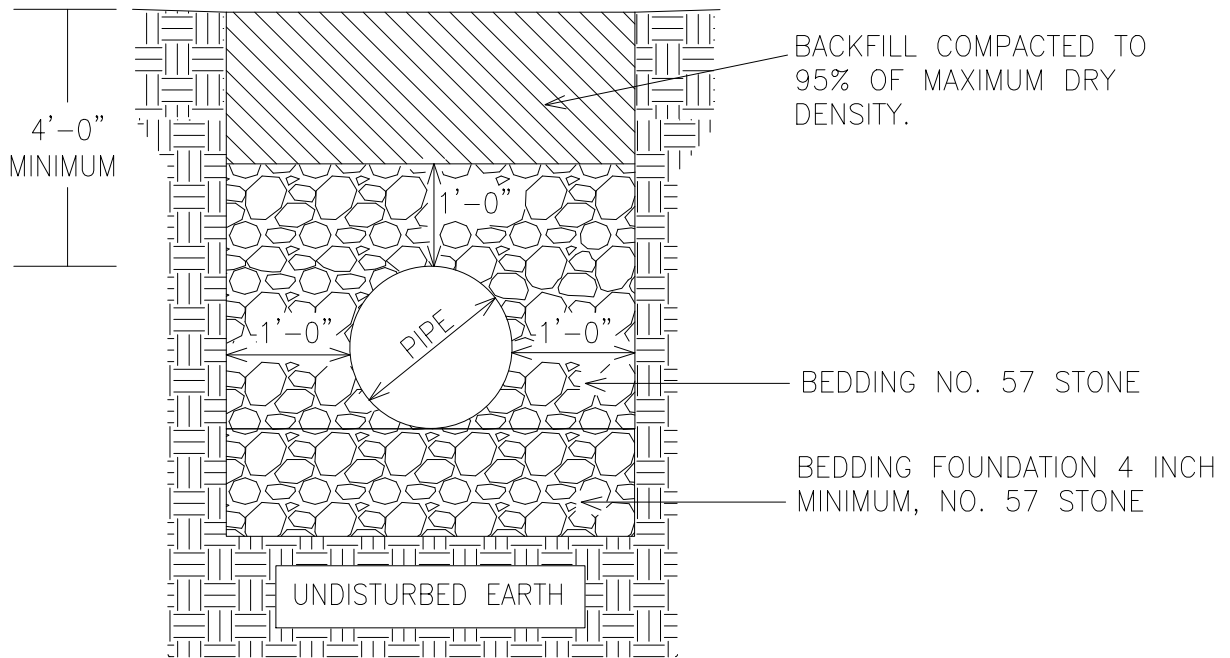
CLAYTON COUNTY WATER AUTHORITY

DATE:	12 AUGUST 2013	DETAIL TITLE:
SCALE:	N.T.S.	SLAB ON GRADE
DRAWN BY:	WWB	



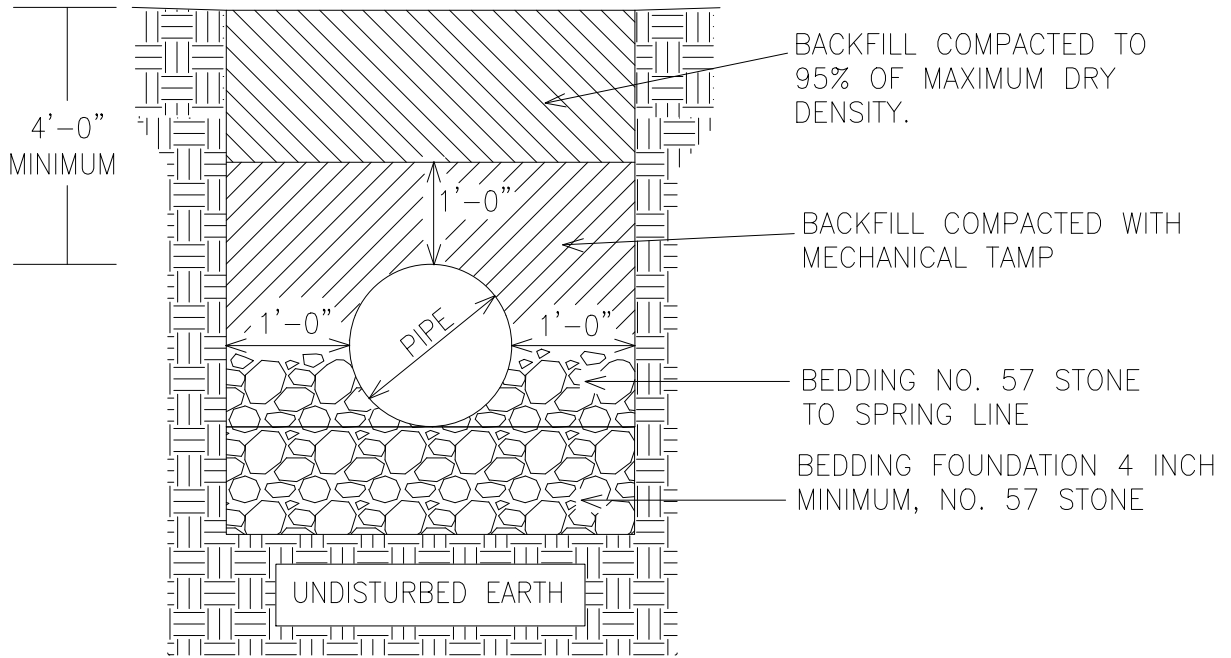
CLAYTON COUNTY WATER AUTHORITY

DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	ASPHALT REPLACEMENT AT EXCAVATION
DRAWN BY:	WWB	



CLAYTON COUNTY WATER AUTHORITY

DATE:	16 MAY 2013	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION ON GRADE
DRAWN BY:	WWB	PVC, HDPE, CM

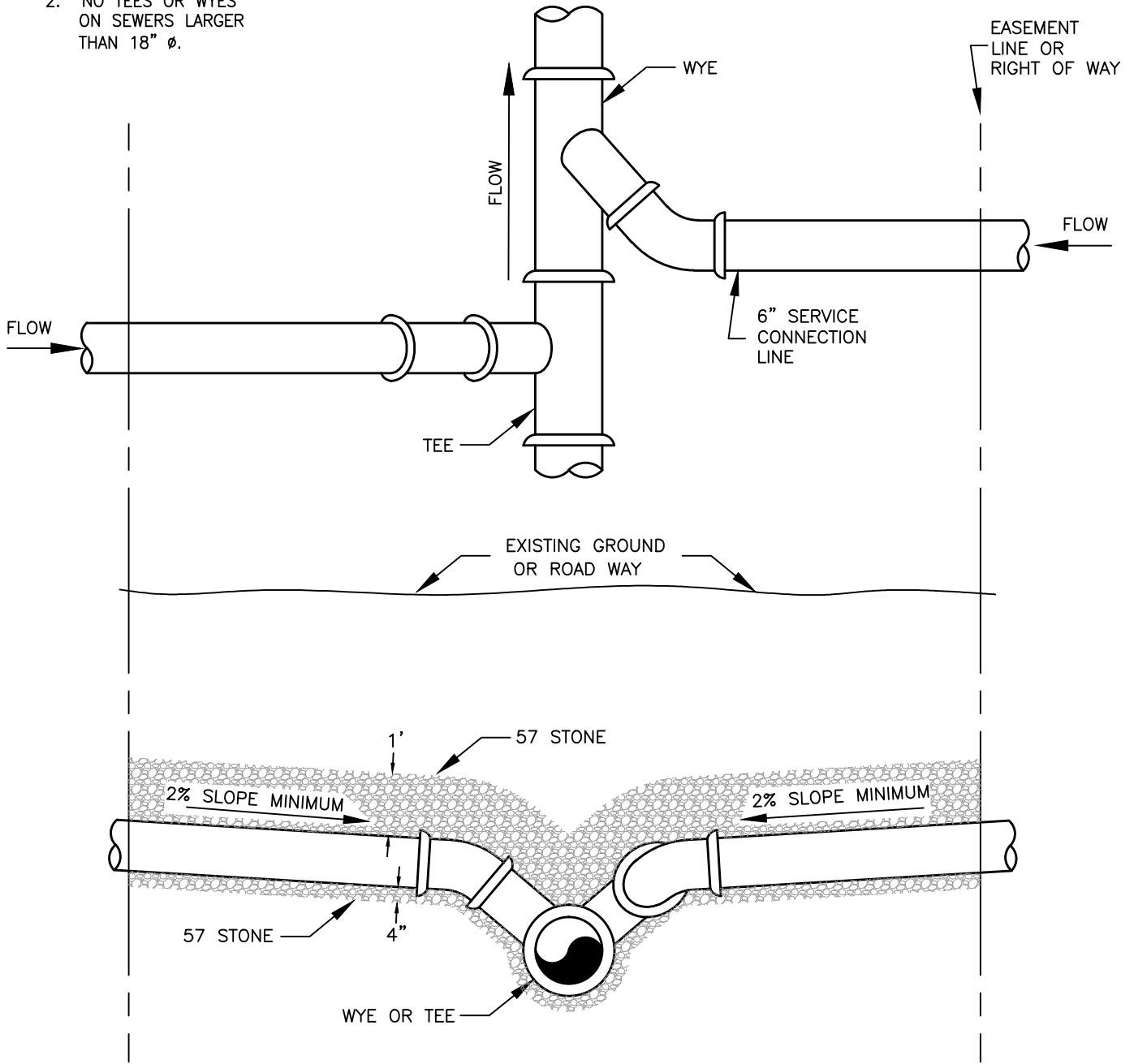


CLAYTON COUNTY WATER AUTHORITY

DATE:	16 MAY 2013	DETAIL TITLE:
SCALE:	N.T.S.	PIPE INSTALLATION ON GRADE
DRAWN BY:	WWB	DI, RC, VC

NOTES:

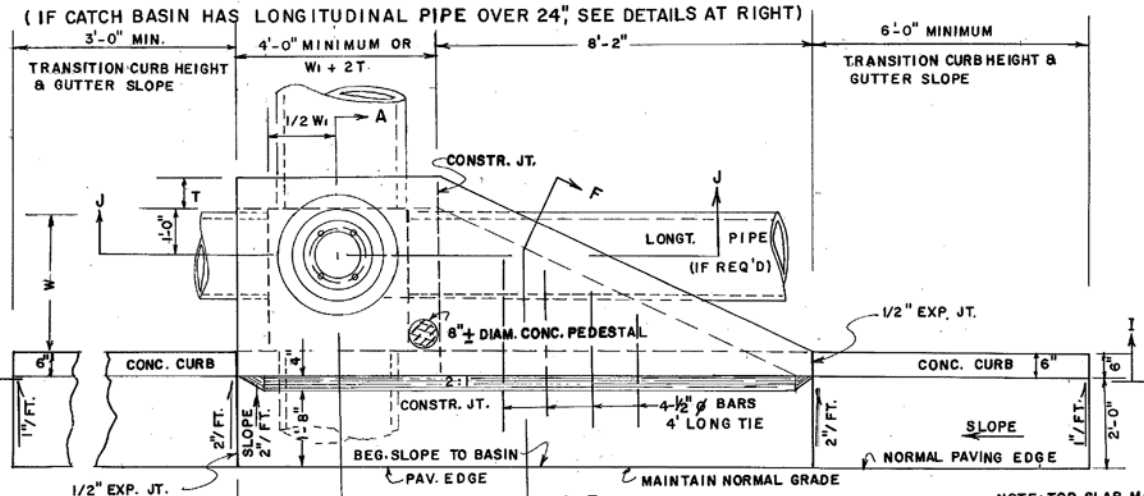
1. CONNECTION TO NEW SEWER SHALL BE WITH TEE OR WYE.
2. NO TEES OR WYES ON SEWERS LARGER THAN 18" ϕ .



CLAYTON COUNTY WATER AUTHORITY

DATE:	06 DECEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	LATERAL CONNECTION
DRAWN BY:	WWB	

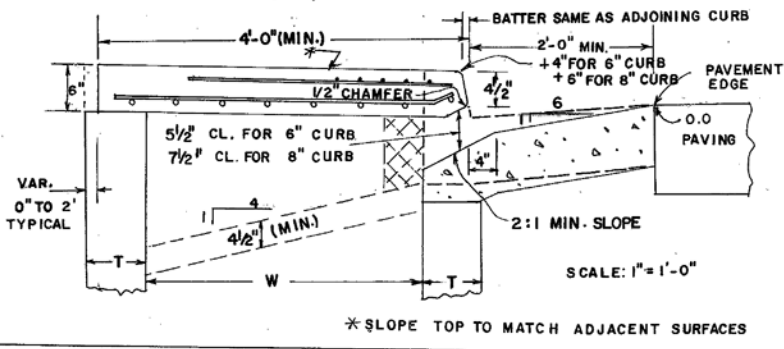
CATCH BASIN



NOTE: 12'-0" (MIN.) PAYMENT FOR CATCH BASIN INCLUDES ALL QUANTITIES BETWEEN THESE LINES EXCEPT ADDITIONAL DEPTH (UNLESS OTHERWISE NOTED IN THE PLANS)

PLAN

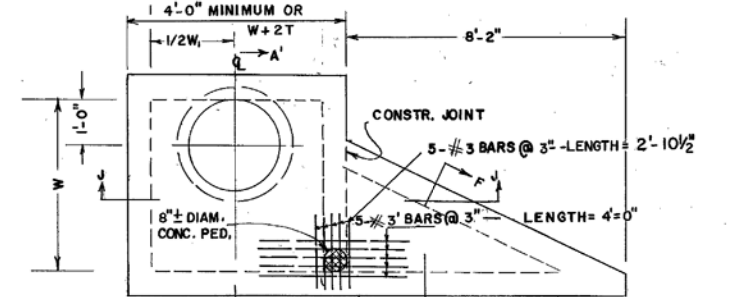
DETAIL OF TOP SLAB, REINF. STEEL & CLEARANCES REQ'D.



*SLOPE TOP TO MATCH ADJACENT SURFACES

(TYPICAL FOR CATCH BASIN WITH LARGE LONGITUDINAL PIPE OR RECESSED BOX)

CATCH BASIN - (WITH PROTRUDED BACK)

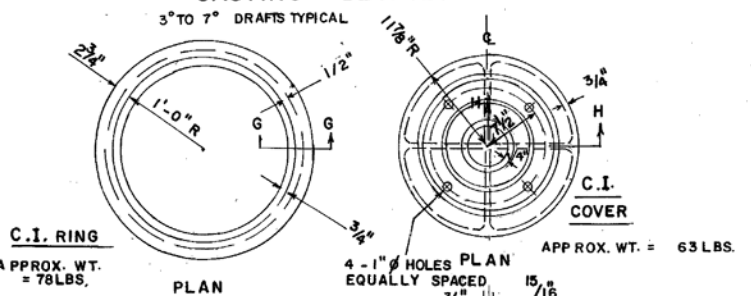


NOTE: CATCH BASIN DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT LEFT FOR NORMAL CATCH BASIN.

PART PLAN

NOTE: RECESSED BOX TO BE USED ONLY WHERE SPECIFIED. SHALLOW LONG PIPE OR UNDERGROUND OBSTRUCTION TYPICAL

CASTING DETAILS



C.I. RING

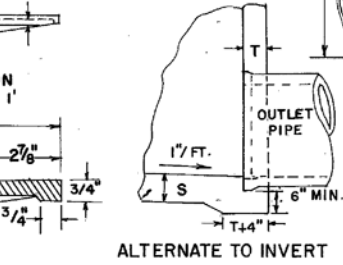
PLAN

ELEVATION

ELEVATION

SECTION G-G

SECTION H-H

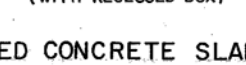


ALTERNATE TO INVERT

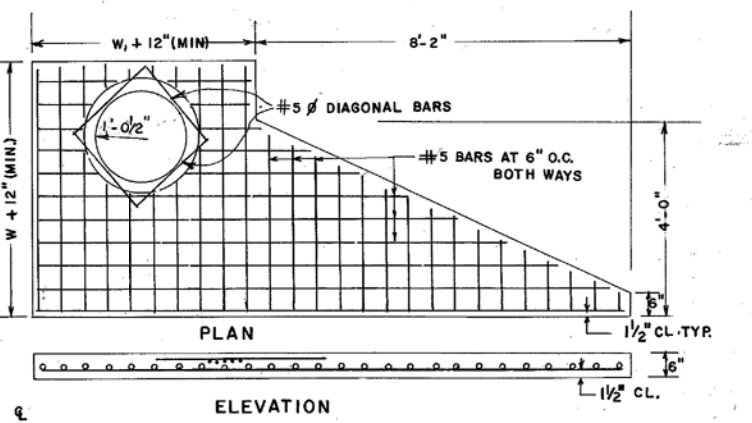
SECTION A-A' (WITH LARGE LONGITUDINAL PIPE)



SECTION A-A' (WITH RECESSED BOX)



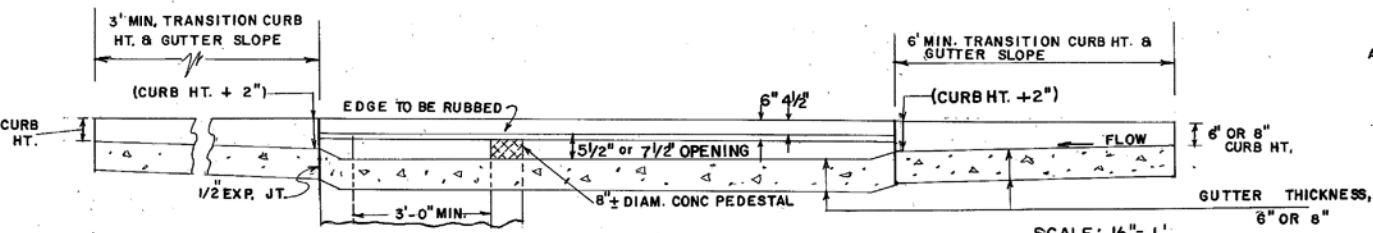
DETAIL OF TOP REINFORCED CONCRETE SLAB



PLAN

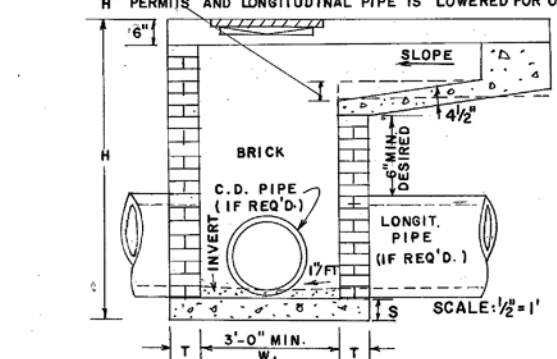
ELEVATION

NOTE: PIPE SIZES, NUMBER, ALIGNMENT, AND INVERT SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS TO BE FORMED WITH GROUT OR CONCRETE AS DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS.

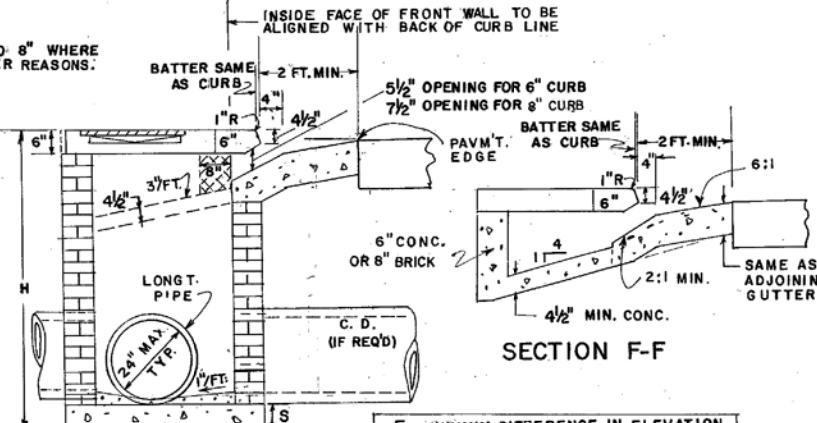


SECTION I-I

NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED BY 4\"/>



SECTION J-J

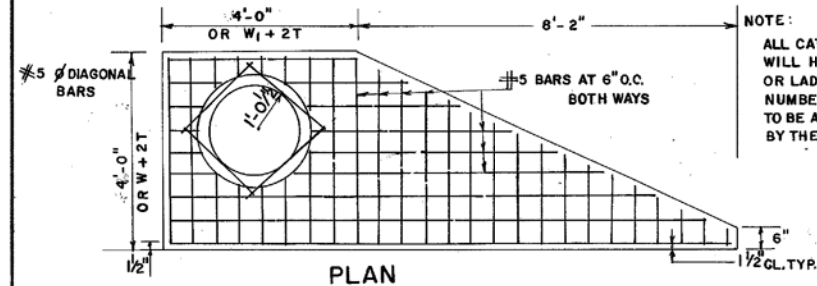


SECTION F-F

ΔE = MINIMUM DIFFERENCE IN ELEVATION FROM PAVEMENT EDGE TO FLOW LINE OF OUTLET PIPE.

SECTION A-A'

DETAIL OF TOP REINFORCED CONCRETE SLAB

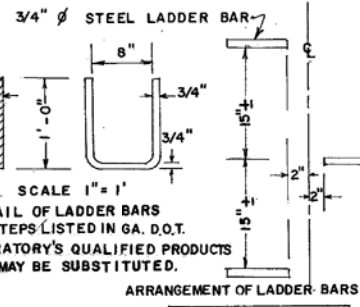


PLAN

ELEVATION

NOTE: ALL BARS IN PLAN VIEW ARE SPACED AT 6\"/>

NOTE: FOR PLAN DETAIL OF REINFORCING STEEL IN TOP PORTION OF SLAB, SEE PART PLAN AT TOP RIGHT.



NOTE: M.H. STEPS LISTED IN GA. D.O.T. LABORATORY'S QUALIFIED PRODUCTS LIST MAY BE SUBSTITUTED.

ARRANGEMENT OF LADDER BARS

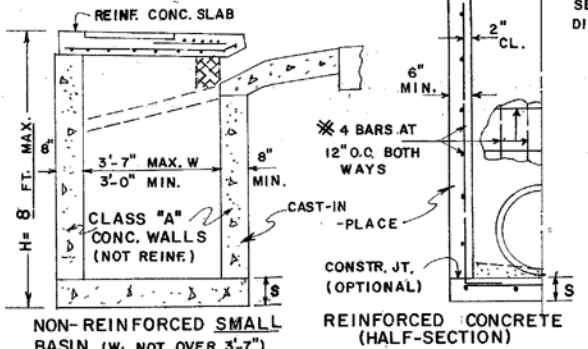
W OR W ₁ (MAX.)	BOTTOM SLAB	
	MATERIALS	S
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W/ #4 BARS 12" O.C. BOTH WAYS 2' CL. FROM SLAB TOP	8"

PIPE DIA.	H (MIN.)	W OR W ₁	ΔE (MIN.)
12	4'-4"	3'-0"	3'-3"
15	4'-7"	3'-0"	3'-6"
18	4'-10"	3'-0"	3'-9"
24	5'-6"	3'-0"	4'-4"
30	6'-2"	3'-7"	5'-0"
36	6'-10"	4'-6"	5'-7"
42	7'-4"	5'-3"	5'-11"
48	8'-0"	6'-0"	6'-6"
54	8'-6"	6'-8"	7'-0"
60	9'-2"	7'-4"	7'-7"

NOTE: THE MIN. R & MIN. ΔE GIVEN IN ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED IF CONDITIONS PERMIT WITH VARIED DIMENSIONS SPECIFIED IN THE PLANS OR DIRECTED BY THE ENGINEER. W & W₁ DIMENSIONS DO NOT HAVE TO BE EQUAL.

PRECAST BOX ON BRICK (HALF-SECTION)

NOTE: TYPICAL TREATMENT FOR SKEWED PIPE ARE: CIRCULAR PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZE.



NON-REINFORCED SMALL BASIN (W. NOT OVER 3'-7")

REINFORCED CONCRETE (HALF-SECTION)

CONSTRUCTION ALTERNATES

NOTE: DETAILS NOT SHOWN ABOVE FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO BRICK CATCH BASIN DETAILS. SEE SEPARATE STANDARDS FOR PRECAST ALTERNATES.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

STANDARD CATCH BASINS

FOR USE WITH CURB (6" HT. OR 8" HT.) & GUTTER

SCALE AS SHOWN

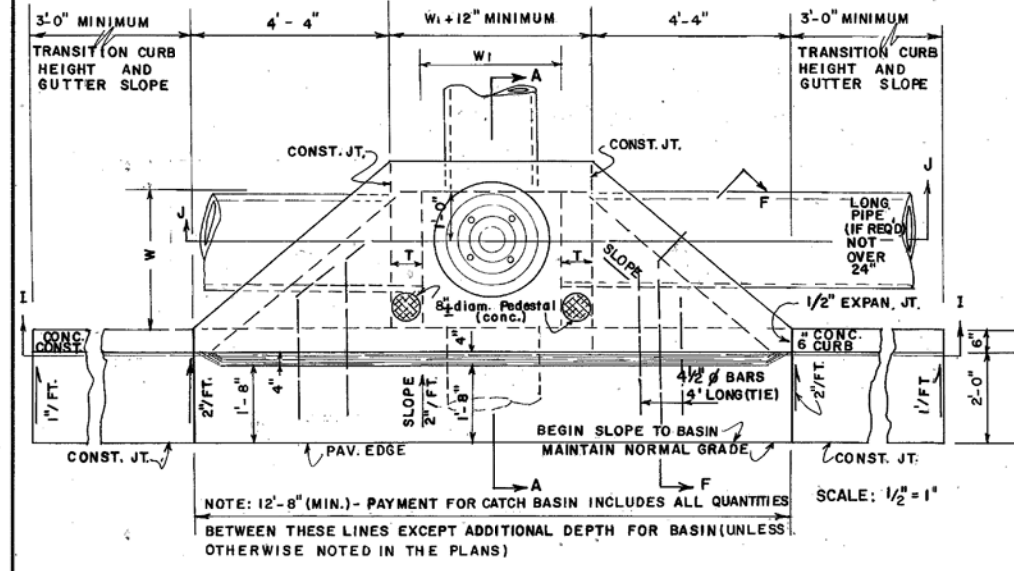
REV. & REDR. AUGUST, 1982

REV. & REDR. R.M.U. (SUBMITTED) *Flord G. Hardy*
 TRA. G.M.E. STATE ROAD & AIRPORT DESIGN ENGR.
 CHK. R.K.C. (APPROVED) *Thomas D. Hardy*
 STATE HIGHWAY ENGINEER

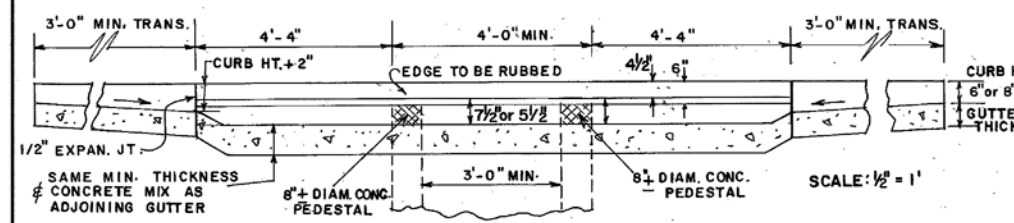
NUMBER
1033 D

CATCH BASIN

(FOR CATCH BASIN WITH LONGIT. PIPE OVER 24" SEE DETAILS AT RIGHT.)

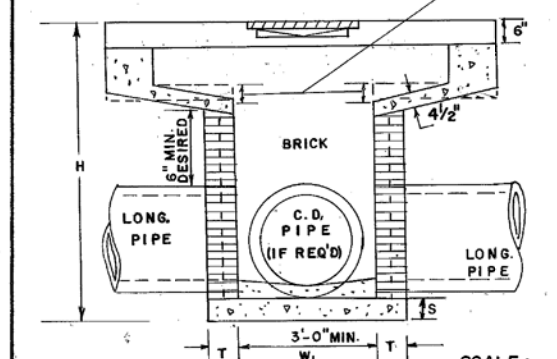


NOTE: 12"-8" (MIN.) - PAYMENT FOR CATCH BASIN INCLUDES ALL QUANTITIES BETWEEN THESE LINES EXCEPT ADDITIONAL DEPTH FOR BASIN (UNLESS OTHERWISE NOTED IN THE PLANS)



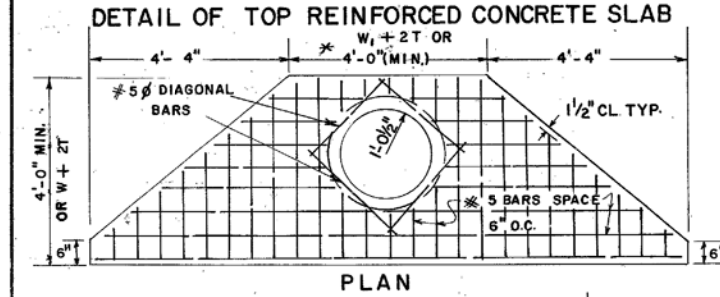
SECTION I-I

NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED UP TO 8" TOTAL WHERE "H" PERMITS AND LONGITUDINAL PIPE IS LOWERED FOR OTHER REASONS.



SECTION J-J

NOTE: PIPE SIZES, NUMBER, ALIGNMENT AND INVERTS SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS TO BE FORMED WITH GROUT OR CONC. AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

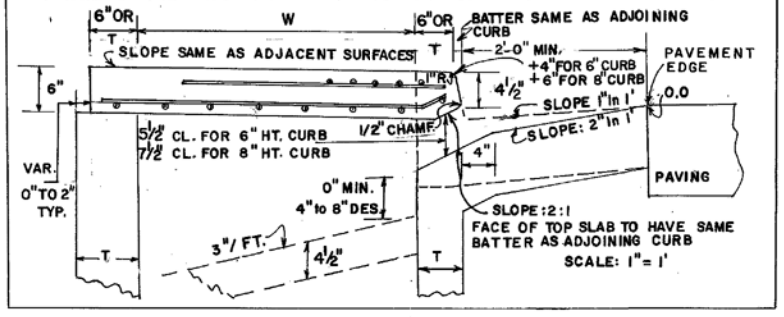


PLAN

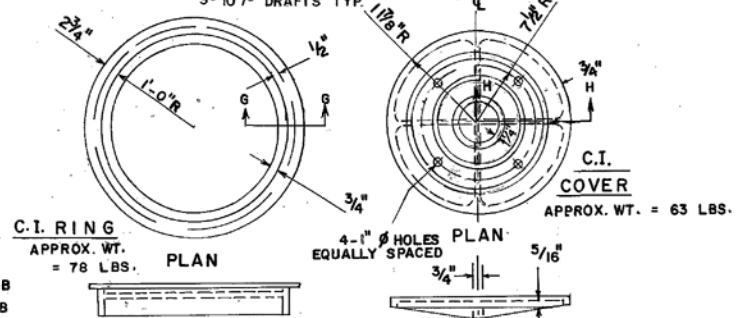
NOTE: ALL BARS IN PLAN VIEW ARE SPACED AT 6" O.C. NOTE: FOR PLAN DETAIL OF REINFORCING STEEL IN TOP PORTION OF SLAB. SEE PART PLAN AT TOP RIGHT.

NOTE: TOP SLAB MAY BE CAST IN PLACE OR PRECAST. IF CAST IN PLACE, BUILDER'S PAPER IS TO BE PLACED BETWEEN THE CATCH BASIN AND TOP SLAB.

DETAIL OF TOP STAB REINF. STEEL & CLEARANCES REQ'D.

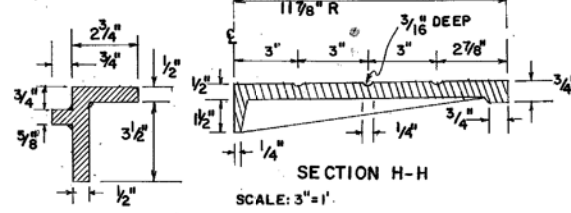


CASTING DETAILS



ELEVATION

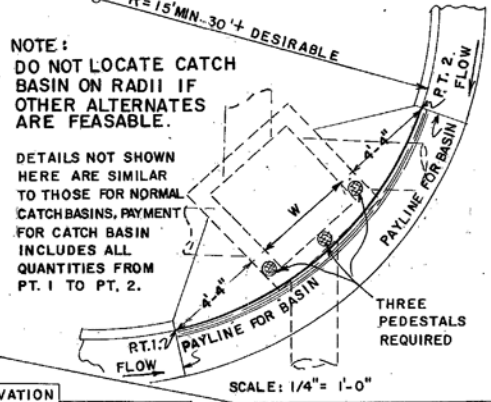
ELEVATION



SECTION G-G

SECTION H-H

CATCH BASIN ON RADII



NOTE: DO NOT LOCATE CATCH BASIN ON RADII IF OTHER ALTERNATES ARE FEASIBLE. DETAILS NOT SHOWN HERE ARE SIMILAR TO THOSE FOR NORMAL CATCH BASINS. PAYMENT FOR CATCH BASIN INCLUDES ALL QUANTITIES FROM PT. 1 TO PT. 2.

THREE PEDESTALS REQUIRED

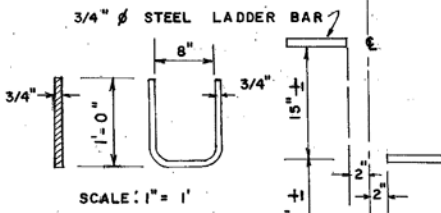
SCALE: 1/4" = 1'-0"

ΔE = MINIMUM DIFFERENCE IN ELEVATION FROM PAVEMENT EDGE TO FLOW LINE OF OUTLET PIPE.

TYPICAL MIN. DIMENSIONS

PIPE DIA.	H (MIN.)	W or W1	MIN. ΔE
12	4'-4"	3'-0"	3'-3"
15	4'-7"	3'-0"	3'-6"
18	4'-10"	3'-0"	3'-9"
24	5'-6"	3'-0"	4'-4"
30	6'-2"	3'-7"	5'-0"
36	6'-10"	4'-6"	5'-7"
42	7'-4"	5'-3"	5'-11"
48	8'-0"	6'-0"	6'-6"
54	8'-6"	6'-8"	7'-0"
60	9'-2"	7'-4"	7'-7"

NOTE: THE MIN. H & MIN. ΔE GIVEN IN ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED, IF CONDITIONS PERMIT WITH VARIED DIMENSIONS SPECIFIED IN THE PLANS OR DIRECTED BY THE ENGINEER. W & W1 DIMENSIONS DO NOT HAVE TO BE EQUAL.



DETAIL OF LADDER BARS

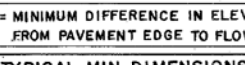
NOTE: M.H. STEPS LISTED IN GA. D.O.T. LABORATORY'S QUALIFIED PRODUCTS LIST MAY BE SUBSTITUTED.

ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS. NUMBER & LOCATION TO BE AS DIRECTED BY THE ENGINEER.

DETAIL OF LADDER BARS

PRECAST BOX ON BRICK (HALF-SECTION)

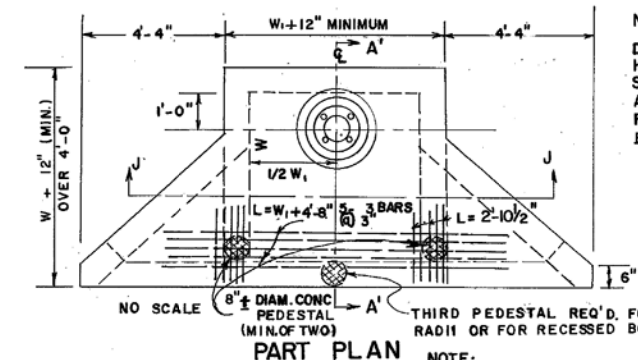
NOTE: SEE SEPARATE STDS. FOR PRECAST ALTERNATES. ADAPTERS (STD. 1040) WILL BE REQUIRED WITH CIRCULAR PRECAST UNITS. PRECAST BOX, CIRCULAR, AND/OR BUILT-IN-PLACE CONSTR. MAY BE USED IN COMBINATIONS.



PRECAST BOX ON BRICK (HALF-SECTION)

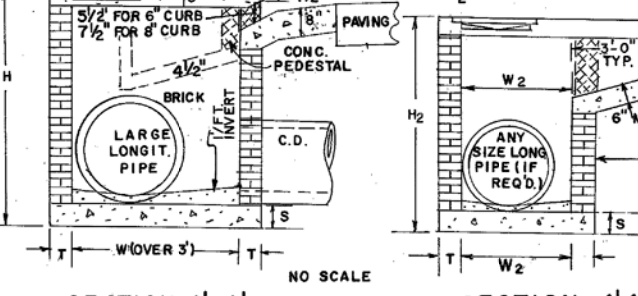
CATCH BASIN (WITH PROTRUDED BACK)

FOR USE WITH LONGITUDINAL PIPE OVER 24" OR FOR USE WITH RECESSED BOX

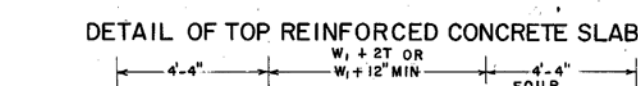


NOTE: DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THOSE AT FAR LEFT FOR NORMAL CATCH BASINS.

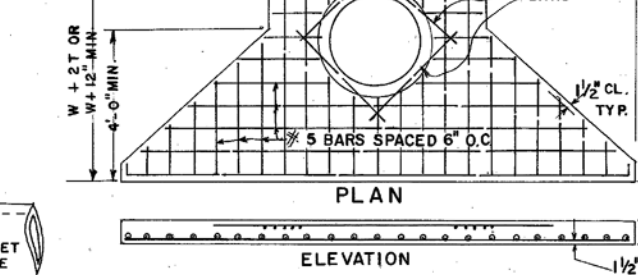
SECTION A'-A' (FOR RECESSED BOX)



SECTION A'-A' (FOR LONGIT. PIPE OVER 24")



DETAIL OF TOP REINFORCED CONCRETE SLAB



PLAN

ELEVATION

NOTE: TYPICAL TREATMENT FOR SKEWED PIPES ARE: CIRCULAR PRECAST UNITS; PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZES TO ACCOMMODATE THE SKEWS.

SEE SEPARATE STANDARDS FOR PRECAST ALTERNATES.

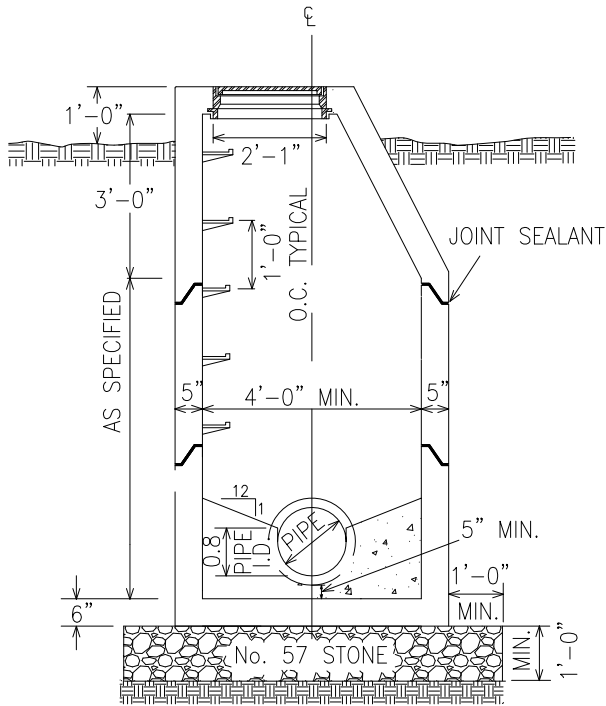
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CATCH BASINS
FOR USE WITH CURB (6" OR 8" HT.) & GUTTER
(IN SAGS OR LOW POINTS)

SCALE AS SHOWN

REV. & RED. AUGUST, 1982

REV. & RED. R.M.U. (SUBMITTED) <i>Floyd E. Hardy</i> STATE ROAD & AIRPORT DESIGN ENGR.	NUMBER 1034D
TRA. G.M.E. (APPROVED) <i>Thomas D. ...</i> STATE HIGHWAY ENGINEER	

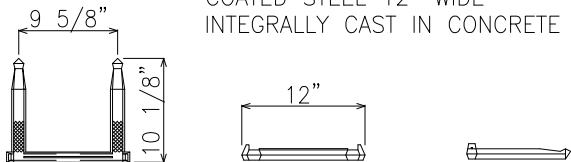


NOTES:

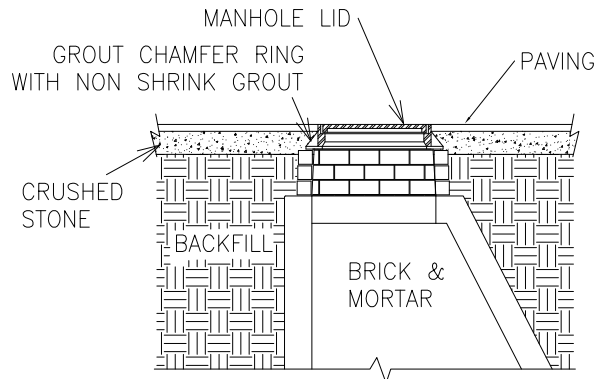
1. SHELF AND INVERT MAY BE CAST-IN OR BUILT-IN-PLACE AND SHALL HAVE SMOOTH FINISH.
2. WHEN BRICK IS USED AS A FILLER, PROVIDE MINIMUM 1/2 INCH GROUT OVER BRICK.

MANHOLE SECTION

POLYPROPYLENE PLASTIC COATED STEEL 12" WIDE INTEGRALLY CAST IN CONCRETE



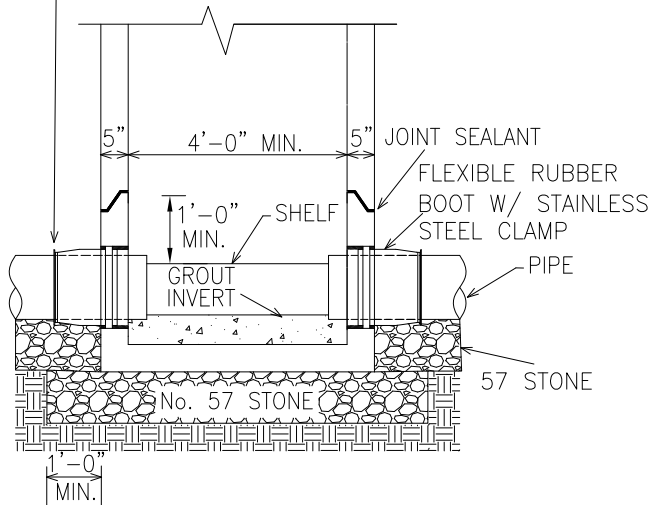
MANHOLE STEP DETAIL
SCALE: N.T.S.



- NOTES: 1. BRICKS SHALL BE STACKED NO MORE THAN FIVE COARSE.

TYPICAL MANHOLE IN PAVEMENT DETAIL

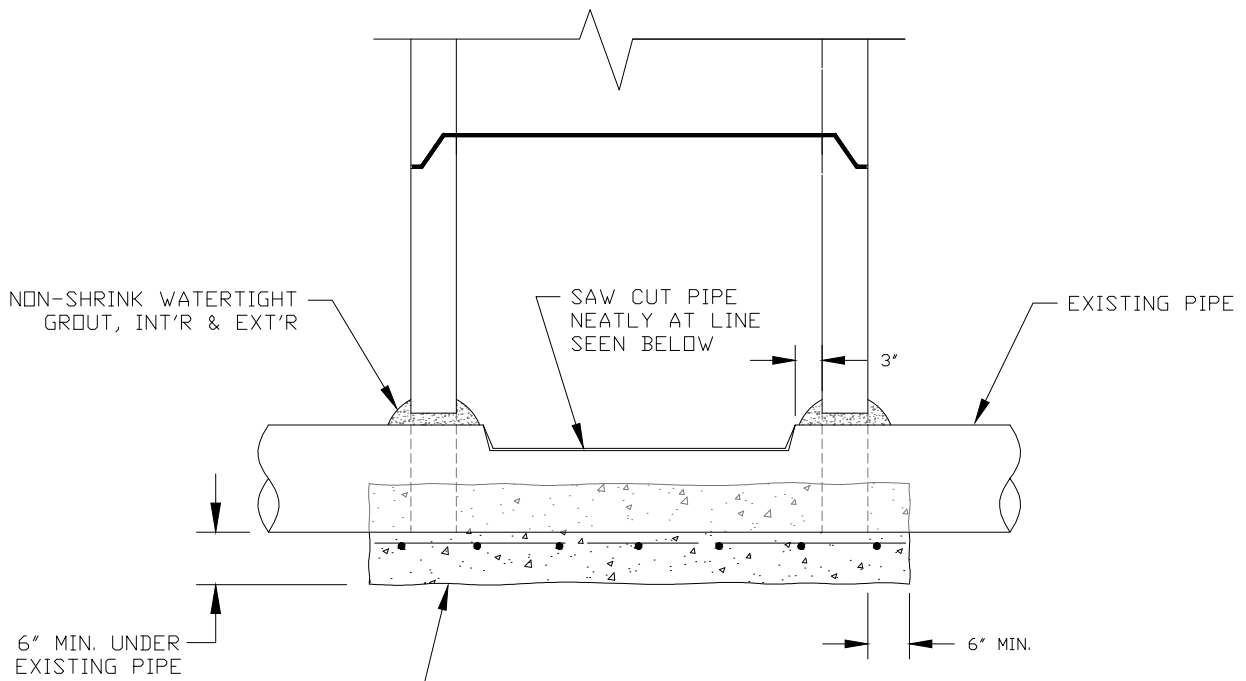
PIPE CENTERED IN PRECAST OPENING



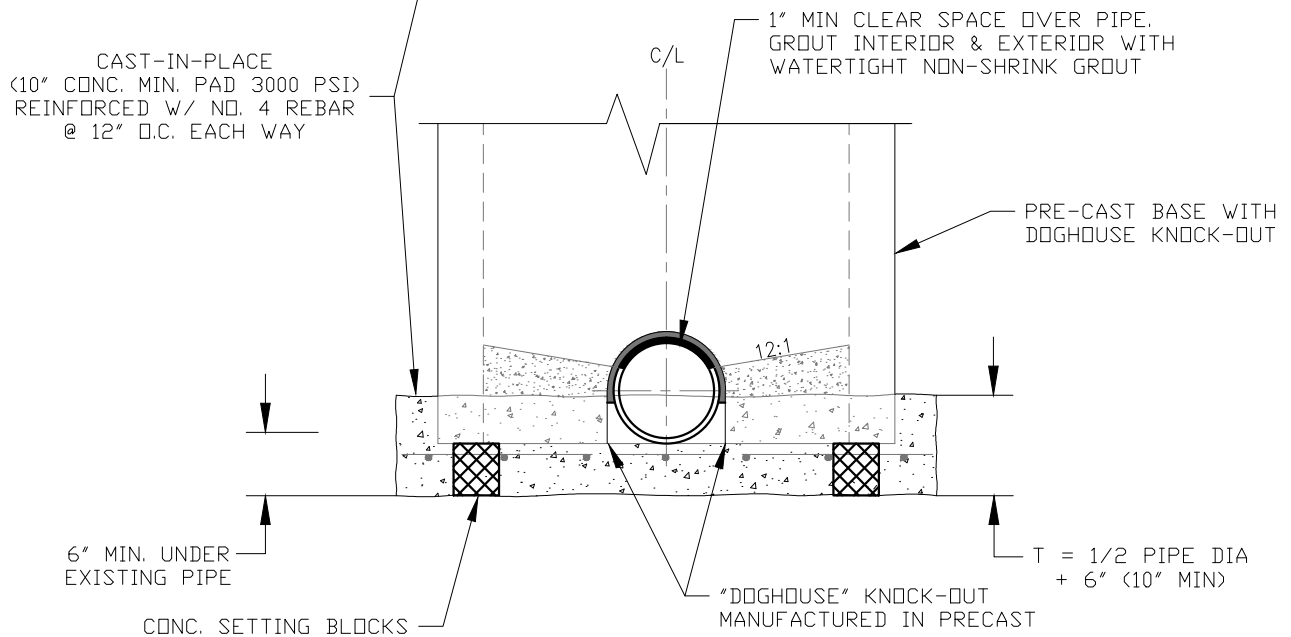
MANHOLE SECTION

CLAYTON COUNTY WATER AUTHORITY

DATE:	09 SEPTEMBER 2016	DETAIL TITLE:
SCALE:	N.T.S.	MANHOLE SECTIONS
DRAWN BY:	WWB	



SECTION



ROTATED SECTION

CLAYTON COUNTY WATER AUTHORITY

DATE:	09 SEPTEMBER 2016
SCALE:	N.T.S.
DRAWN BY:	WWB

DETAIL TITLE:	DOG HOUSE MANHOLE SECTIONS
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**STATE OF GEORGIA
COUNTY OF CLAYTON**

INTERIM WAIVER AND RELEASE UPON PAYMENT

The undersigned mechanic and/or materialman has been employed by the Clayton County Water Authority to furnish:

_____ [describe materials and/or labor]; for the construction of improvements known as:

_____ [title of the project or building];

which is located in the City of _____, County of _____, and is owned by the Clayton County Water Authority at the following address:

and more particularly described by the following metes and bounds description, land lot district, or block and lot number:

See Attachment: yes no

Upon the receipt of the sum of: \$ _____;

the mechanic and/or materialman waives and releases any and all liens or claims of liens it has upon the foregoing described property through the date signed below and excepting those rights and liens that the mechanic and/or materialman might have in any retained amounts, on account of labor or materials, or both, furnished by the undersigned to or on account of said contractor for said building or premises.

NOTICE: WHEN YOU EXECUTE AND SUBMIT THIS DOCUMENT, YOU SHALL BE CONCLUSIVELY DEEMED TO HAVE BEEN PAID IN FULL THE AMOUNT STATED ABOVE, EVEN IF YOU HAVE NOT ACTUALLY RECEIVED SUCH PAYMENT, 60 DAYS AFTER THE DATE STATED ABOVE UNLESS YOU FILE EITHER AN AFFIDAVIT OF

NONPAYMENT OR A CLAIM OF LIEN PRIOR TO THE EXPIRATION OF SUCH 60 DAY PERIOD.

_____(L.S.)
(Signature of Deponent)

(Printed/Typed Name and Title)

Deponent, individually, and as duly authorized agent and duly elected and acting officer of Contractor

(Company Name)

PERSONALLY APPEARED BEFORE ME, a Notary Public in and for said State and County, the Deponent, who, being personally known to the undersigned and being duly sworn and on oath deposed and said that the within and foregoing statements are true and correct this _____ day of _____, 20_____.

Notary Public _____

Commission Expiration Date: _____

(NOTARY SEAL)

(Witness)

(Address)

**STATE OF GEORGIA
COUNTY OF CLAYTON**

WAIVER AND RELEASE UPON FINAL PAYMENT

The undersigned mechanic and/or materialman has been employed by the Clayton County Water Authority to furnish:

_____ [describe materials
and/or labor]; for the construction of improvements known as:

_____ [title of the project or building];

which is owned by the Clayton County Water Authority at the following address:

and more particularly described by the following metes and bounds description, land lot district, or block and lot number:

See Attachment: yes no

Upon the receipt of the sum of: \$ _____;

the mechanic and/or materialman waives and releases any and all liens or claims of liens or any right against any labor and/or material bond it has upon the foregoing described property.

THE MECHANIC AND/OR MATERIALMAN WAIVES AND RELEASES ANY AND ALL LIENS OR CLAIMS OF LIENS IT HAS UPON THE FOREGOING DESCRIBED PROPERTY OR ANY RIGHTS AGAINST ANY LABOR AND/OR MATERIAL BOND ON ACCOUNT OF LABOR OR MATERIALS, OR BOTH, FURNISHED BY THE UNDERSIGNED TO OR ON ACCOUNT OF SAID CONTRACTOR FOR SAID PROPERTY.

NOTICE: WHEN YOU EXECUTE AND SUBMIT THIS DOCUMENT, YOU SHALL BE CONCLUSIVELY DEEMED TO HAVE BEEN PAID IN FULL THE AMOUNT STATED ABOVE, EVEN IF YOU HAVE NOT ACTUALLY RECEIVED SUCH PAYMENT, 60 DAYS AFTER THE DATE STATED ABOVE UNLESS YOU FILE EITHER AN AFFIDAVIT OF NONPAYMENT OR A CLAIM OF LIEN PRIOR TO THE EXPIRATION OF SUCH 60 DAY PERIOD.

PERSONALLY APPEARED BEFORE ME, the undersigned attesting officer, duly authorized by law to administer oaths (the "Deponent"), who being duly sworn according to law, deposes and says on oath:

1. That Deponent is the duly authorized agent and duly elected and acting officer of _____ (the "Contractor"), and is duly authorized to execute this Final Contractor's Affidavit, Lien Waiver and Indemnification (this "Affidavit") in a representative capacity on behalf of Contractor, as well as in Deponent's individual capacity, and Deponent has made diligent inquiry into and is personally familiar with and has full knowledge of all facts set forth herein.

2. That Contractor acted as the sole general contractor in charge of and directly responsible for the building and construction of all improvements (the "Work") located as reflected above (the "Property"), all of which Work was performed pursuant to the terms of that certain agreement dated _____ (the "Agreement") by and between Contractor and the Clayton County Water Authority as the owner or agent of the owner of the Property (the "Owner"). The Work includes, without limitation, all Work under or related to the Agreement and all change orders to the Agreement, and all supplemental contracts and subcontracts, whether oral or written, for any extra, additional or replacement labor or materials. Contractor is, and performed the Work as, an independent general contractor and Contractor is not an agent of Owner, and all of the Work was furnished and performed at the instance of Contractor as general contractor.

3. That the Work has been fully and finally completed in strict accordance with the terms of the Agreement, and Contractor has at all times since the commencement of the Work been in direct charge of all aspects of the Work, and Contractor has obtained a current valid permanent certificate of occupancy for the Property and the Work, and the Work has been completed within the boundary lines of the Property.

4. Upon receipt of the sum reflected above, Contractor acknowledges that Owner has paid in full to Contractor the full contract price under the Agreement (the "Contract

Price"), which Contract Price includes, without limitation, all amounts and bills for all labor, materials, fixtures and supplies of any type whatsoever used in the Work. Upon receipt of these monies, all contractors, subcontractors, subcontractors of subcontractors, materialmen, suppliers and laborers will be paid in full the agreed price or reasonable value for all materials and supplies ordered, used or furnished and services and labor rendered in connection with or as a part of the Work, and none of such parties have or will have any claim, demand or lien against the Property, and all of the amounts paid by Owner to Contractor under the Agreement have been and will be used to pay for labor or materials used in the Work when no liens or claims of lien were filed or outstanding. There are no disputes regarding the Agreement or any other contracts or subcontracts with respect to the Work or the Property, and, except for bills associated with these final monies, there are no amounts due or unpaid bills of any nature, either for labor or services related to the Work or the Property or any materials which have been or may have been placed upon, or applied or delivered to the Property, and Contractor does hereby unconditionally agree to hold harmless and indemnify Owner from and against all claims for mechanic's or materialman's liens or claims of lien, including, without limitation, any attempted foreclosure thereof, which in any way arise out of or are related to the Work or the Property, including, without limitation, any attorney's fees incurred in connection therewith.

5. That Contractor does hereby for itself, and its employees, suppliers, subcontractors, mechanics and materialmen and all other persons acting for, through, or under Contractor, waive, remise, relinquish and release all right to file or to have filed or to maintain any materialman's or mechanic's lien or liens or claim or claims against the Property or arising out of or related to the Work. This Affidavit is executed and given in favor of and for the benefit of, and may be relied upon by, Owner and each and every party legally or equitably, now or hereafter, owning or holding any interest in the Property.

6. That this Affidavit is a sworn statement made under the provisions of Official Code of Georgia Annotated Section 44-14-361.2, and is made for the purpose of inducing Owner to pay to Contractor the balance of the Contract Price pursuant to the terms of the Agreement.

[SIGNATURES ON NEXT PAGE]

_____(L.S.)
(Signature of Deponent)

(Printed/Typed Name and Title)

Deponent, individually, and as duly authorized agent and duly elected and acting officer of Contractor

(Company Name)

PERSONALLY APPEARED BEFORE ME, a Notary Public in and for said State and County, the Deponent, who, being personally known to the undersigned and being duly sworn and on oath deposed and said that the within and foregoing statements are true and correct this _____ day of _____, 20_____.

Notary Public _____

Commission Expiration Date: _____

(NOTARY SEAL)

(Witness)

(Address)